

## Roads & Wildlife

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NATIONAL WILD  
TURKEY FEDERATION



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*Man is very mobile and dependent upon roads. Roads are people things that can have positive and negative attributes for man and wildlife.*

Roads, roads and more roads, everywhere you travel, there is another road. People's love affair with vehicles and their dependence on transportation via roads has resulted in a high density of roads. We are a very mobile people, and we need a car, van, truck, and 4-wheeler. Roads are people things.

There are many types of roads: interstate; U.S. and state highways; and county, public, and private (e.g., Forest Service, forest industry) roads. You may use 6 different kinds of roads to get to your hunting camp. High standard roads, those meeting federal and/or state specifications (concrete, asphalt) are not wildlife habitat; associated rights-of-ways (ROW) are habitat. Many lower standard roads, such as county (e.g., gravel, dirt); privately owned (e.g., ranch, farm, hunting club) or publicly owned (e.g., National Wildlife Refuge, state park) can be wildlife habitat. Roadsides, ROWs and low standard roads or trails can be linear strips of wildlife habitat.

Roads have positive and negative attributes for man and wildlife. We demand more and better roads: they are absolutely essential for movement of goods and people. Our economy is heavily dependent on fast, efficient transportation via trucks. We can quickly travel anywhere in the country but the downside is a tremendous amount of injury, death and property damage.

Many conservation or environmental battles have been (and will be) fought over roads. Large roadless tracts (e.g., wilderness areas) are essential for some wildlife species, and these tracts are becoming scarce. Roads fragment large forests into smaller units and have detrimental effects on many species. Roaded areas have more edge, which may be beneficial for some generalist species, but have negative aspects to many other species. Each year, hundreds of thousands of acres of wildlife habitat are lost, gone forever due to new roads or additional lanes to existing



*This example of a high standard U.S. Forest Service road, complete with gate that can be closed and locked, can provide good wildlife habitat if managed properly.*

roads. In addition, millions of critters, from butterflies to bears, raccoons to rabbits, and dogs to deer are killed each year on roads. Can you imagine the number of snakes, frogs, toads, turtles, birds, and mammals that are killed on roads each day or year? Many roads are hazardous to man because of great increases in deer, moose, etc., populations, as well as drunk drivers.

Department of Transportation (DOT) programs are trying to decrease wildlife losses with warning signs and construction of wide “tunnels” under major highways to allow safe passage of southern cougars, bears, and other land animals. Special toad and salamander crossings have also been constructed.

Indirectly, roads have a negative impact on wildlife because they serve as a medium for illegal activities – road-shooting, night-lighting or spot-lighting. Roads may mean poachers can gain easy access to remote areas to slaughter wildlife. The death toll is staggering. Higher road density means more problems for law enforcement personnel. The fact that we have so many roaded

areas leads to a great disturbance of wildlife. However, people who use roads and view wildlife gain an appreciation for the resource and might further support our wildlife programs.

Vehicles are a constant and large source of pollution (i.e., toxic gases, gasoline, oil, rubber, salt, and heavy metals). Road construction and repair are major causes of erosion, sedimentation, lower water quality, degraded wetlands, etc.

Engineers have tried to decrease erosion problems, make roads safe, and landscape architects have tried to make them more appealing, even scenic. Some states have wildflower programs to make roadsides beautiful. Forest products companies leave a narrow strip (screen) of trees to obstruct our view of ugly, but necessary harvest operations. We have programs, including prison work-release groups and volunteer organizations, to pick up litter. Control or elimination of roadside billboards has been an active program. People have strong opinions on roads, and we spend billions of dollars on roads.

## **ROADS AND WILDLIFE:**

Many critters are killed on roads. However, wildlife managers use roads in several ways. Wild turkeys have been captured by cannon net or drugged at bait sites on road edges. Road counts of wildlife (living) have provided relative abundance, population trend, and reproductive success (e.g., number of poults/hen) data. Roadside counts of pheasant and quail by rural mail carriers, conservation officers, or school bus drivers have yielded important data. Biologists conduct call counts (e.g., dove, quail) from roads. Recently, counts of dead raccoons, skunks, and similar predators on roads in Ohio documented fantastic increases in these populations. Several state wildlife agencies use road counts as part of the data base to set hunting regulations. Check stations and road-blocks are an important management tool, and they depend on roads.

In our study of a wild turkey population on a large tract (35,000 acres) of loblolly pine plantations, we learned that important informa-

tion on reproduction and population density could be obtained by observing turkeys at bait sites on company spur roads (short roads off a main branch). Dr. Lenny Brennan and I wrote a paper on the summer diet of quail based on DOR BWQs. Say what? I collected dead-on-road bobwhite quail over a 10-year period in eastern Mississippi. From crop contents, we found that during the reproductive period female quail ate significantly more insects (protein) than did males. We must manage habitats to provide insects for wild turkey hens and later, for their chicks during the breeding, nesting and brood rearing season.

### WILD TURKEY USE OF ROADS, ROADSIDES AND ROWS:

Wild turkeys use roadsides or ROWs of all types of roads. I have seen flocks of turkeys feeding on interstate and state highways, and all lesser roads. If you slow down or stop far enough away, you can enjoy viewing turkeys on roadsides. On several occasions on spur or woods roads, I have had turkeys continue to run ahead of my truck before finally darting into the forest. Are turkeys killed by collisions with vehicles? Yes, several of our radio-transmitted hens have been killed by vehicles on county roads. On several occasions, I barely missed a hen trying to cross a road. Watch out for single hens near roads during the nesting period. My neighbor worked for the DOT and he collected several trophy beards/spurs from carcasses on roadsides.

Several studies found that disturbance by people on roads and trails caused turkeys to decrease use of these areas. In 1968, Wayne Bailey stated in North Carolina that human disturbance on roads must be limited to benefit the wild turkey. In areas with high road density and excessive traffic, turkey use was minimal. In Virginia, road access was found to play a major role in number of turkeys killed and the proportion of the kill lost to crippling. During the hunting sea-

son, radio-tagged turkeys died closer to roads than during other seasons. Road access increased hunting pressure and crippling losses.

Plant communities on roadsides or ROWs are usually dominated by grasses with a lesser forb (e.g., ragweed, pokeweed, daisy, goldenrod) component. Mowing and spraying (herbicide) favor grasses. Turkeys obtain food such as green forage, insects and other invertebrates, fruit

thing. He stopped his truck, got out and chased the birds away. He may have saved their lives because roadshooters are still with us.

Turkey use of road ROWs seems to be more prevalent in late winter to early spring because of mating activities and exhaustion of foods in adjacent forests. Green forage, seeds and insects are probably more abundant in open, sunny habitats.



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*Wildlife managers use roads in several ways. This wild turkey hen has been attracted to a bait site at a potential trap location. Road counts of living wildlife provide relative abundance, population trend and reproductive success data.*

(e.g., blackberry), and seeds from many plants on roadsides. They also find spilled soybeans or corn along roads.

Because of mowing, roadside vegetation on ROWs is usually short, like that of fields or pastures in late winter. Turkeys use some roadsides or ROWs as courtship areas. Several times I have seen gobblers with hen flocks on roadsides in March. A turkey hunter friend saw a gobbler in full strut near a flock of hens on a well traveled state highway in March. It might seem silly but he did a good

Most turkey hens nest near an edge, including roadside edges. During the past 14 years, many of our radio-transmitted hens nested close to road edges. Egg-laying and incubating hens use roadsides as foraging areas. Some brood hens also use roadside edges.

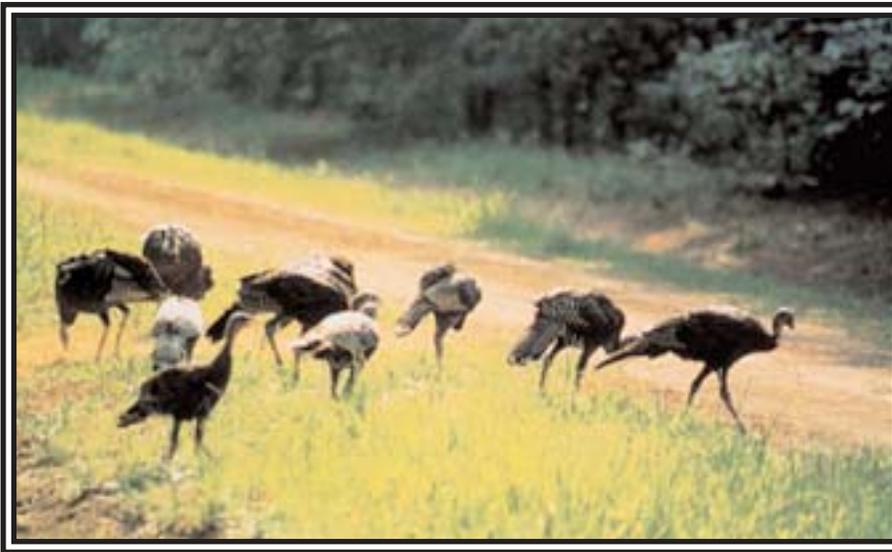
Turkeys use woods and spur roads and roadsides as travel lanes or corridors. They use farm or ranch roads to go from one habitat to another. They can avoid unsuitable habitat(s) by walking on a road to better habitat(s). In our study of turkeys and pine plantations, we

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Turkeys use roads and roadsides as courtship areas in late winter as well as flocking areas before spring breakup.

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Juvenile and adult hens use roads more prevalently in early spring because green forage, seeds and insects are probably more abundant in open, sunny habitats.

found that an important factor determining whether or not turkeys used a plantation was the presence of a spur road in the plantation.

Turkeys use sandy roadbeds or roadsides for dusting, where they can also obtain grit (gravel) for their gizzard. Observations from our study areas indicate that turkeys frequently use county (dirt), spur and woods roads after a rain. We actually hope for rain so turkeys will come to roads and find bait (corn) sites. I do not know why turkeys increase their use of roads after a rain. Maybe they come to roads after a rain to dry-off in open areas. Getting away from the noise of water dripping from forest vegetation may give turkeys an edge in

hearing predator movement. If you want to see turkeys, travel forest industry or ranch roads after a rain. In very cold areas, turkeys could also use roads to get out of deep shade and warm themselves in the sun for awhile.

### OTHER WILDLIFE USE OF ROADSIDES AND ROWS:

Many species use roads, roadsides or road ROWs as places to find food, cover, etc. Small mammals (e.g., cottonrats, mice) inhabit the grass/forb plant communities. Other herbivores, such as rabbits and groundhogs also live on road ROWs. Since these prey species are present, predators (carnivores) such

as bobcat, fox, coyote, snake, hawk, and owl hunt roadsides. Obviously, roads and roadsides are very dangerous places to live; the DORs are food for scavengers (e.g., vultures). For a couple of weeks in Louisiana, I counted DOR barred owls, and at 22, I quit. I have even found DOR great horned owls, predators of turkey hens. Think of all the hawks you see perched along road sides, searching for prey.

Generalists, like the raccoon, skunk and opossum make frequent use of roadsides. The white-tailed deer is everywhere. Some amphibians (frogs, toads) use small pools, ditches or wetlands associated with roads. I have found many frog and toad eggs in ditches beside low standard roads and in skidder ruts on woods roads.

Reptiles, both predators (lizards, snakes) and herbivores (turtles, gopher tortoise) use roadsides or ROWs. Grass communities with some flowering plants attract a multitude of insects and some birds (e.g., meadowlark, crow, robin, cardinal). Roadrunners are doing well on interstate highway ROWs in Texas. Bluebirds often perch on signs or posts and search for insects on roadsides. Bluebird trails, a series of nesting boxes on a roadside, are becoming common. Several states are now implementing a roadside nesting box program for the American kestrel (sparrow hawk). Perhaps you have noticed a bumper sticker – **I brake for wildlife?** Give'em a break.



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Obviously, roads and roadsides are very dangerous places to live. This DOR (dead-on-road) raccoon is an example of the generalist wildlife species that make frequent use of roadsides.

## MANAGEMENT OF ROADSIDES AND ROWS OF MAJOR ROADS:

The general public or wildlife managers can do little about road management practices. However, you can write letters, make phone calls, and vote for more sympathetic representatives when you see something you think is harmful to wildlife. However, authority and responsibility for road management lie with the DOT. They must (state or federal regs) mow, spray, scrape, and put up signs for safety. Fortunately, mowing and spraying have declined in recent years to save money. Fences have been erected to keep some wildlife off roads. Only the roadside nearest the road has to be mowed frequently to keep the vegetation short. The wide ROWs need not be mowed every year. You can suggest that some practices be curtailed or delayed to provide wildlife habitat. Quail could certainly use more nest/brood habitat.

On newly created roads, the DOT blows-on seed and mulch to decrease erosion. Turkey people would like them to plant crimson or ladino clover, vetch, ryegrass, or wheat. These plants provide green forage and some seeds for our birds, and green forage for herbivores. Too often, the "F" grass – fescue, a low value grass for most wildlife, is planted. Ask your DOT to plant something better for wildlife. It would be best to allow a natural plant community (forbs, grasses, vines) to occupy the ROW, increasing plant species diversity.

In the Southeast, too many ROWs are planted to pine, yes, more dense pine plantations. After a few years, the ROW is dominated by pines, which are of little value to wildlife, and they prevent us from seeing the beautiful countryside. It is like driving through a "pine tunnel."

Sometimes, the DOT permits local ranchers to mow and bale hay on ROWs. Wildlife managers have asked for modifications of this practice, such as delay or do not mow



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*Farm, forest roads and trails on public and private lands offer opportunities to enhance wildlife habitats. Human access of roads must be controlled with locked gates to see how deer and turkey populations rapidly increase.*

parts to permit species (e.g., pheasants, ducks) to nest.

## MANAGEMENT OF LOWER STANDARD ROADSIDES OR ROWS:

Farm, forest (spur or woods) roads and trails on public and private lands offer opportunities to enhance wildlife habitats. Traffic is low and you can manipulate the vegetation to improve habitat(s), and you can control disturbance.

First, you **must** control human use (access) of roads. People are the problem, not the roads. It is amazing how deer and turkey populations rapidly increase once road control via locked gates is established. If you do nothing else, lock 'em up (roads and outlaws). Keep road-shooters, poachers and slob hunters off roads. Logging crews using your roads must not be permitted to carry guns.

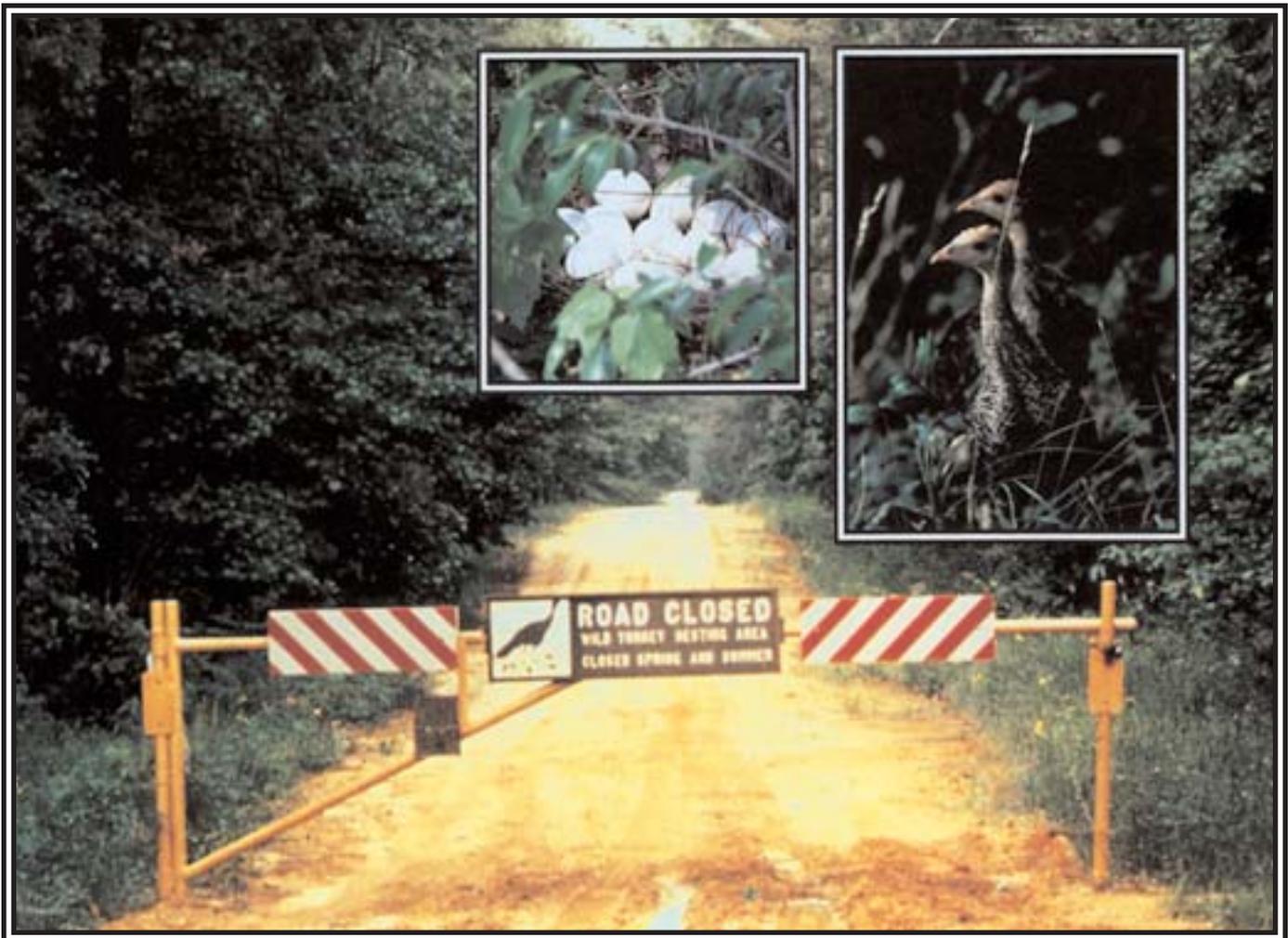
You have often heard that wildlife management is people management, well restriction of road use is wildlife management. For instance, when juvenile turkeys reach "frying-size," SOBs (sorry ol' boys) cruise to find brood hens/juveniles and shoot them. We once found a pile of corn on a county road, alerted the local conserva-

tion officer, and he busted a junior college president shooting a turkey over bait! Be alert, watch for road-shooters, and make that call to an officer. You must prosecute all trespassers and poachers. You cannot be a nice person to this breed of people. Road-shooters do not respect anything.

## HOW CAN YOU HELP?

An example: the Mississippi Chapter, NWTF, used Super Fund money, matched by Forest Service challenge-grant money, to close (locked gate) many roads on the state's National Forests. Signs (e.g., cooperative project, reward, posted) are available from state or local chapters, NWTF. Put the signs up high and be prepared to replace them. One of the best signs I have seen was on locked gates across all Forest Service roads on the Strong River District of the Bienville National Forest, MS, "Road Closed, Wild Turkey Nesting Area." Seasonal closure permits access for other activities.

Another antiroad-hunter project is the use of beautiful, big, mechanical decoy gobblers and hens. Recently, the Mississippi Chapter, NWTF, used Super Fund money to purchase mechanical birds and to



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have real turkeys mounted. Conservation officers can place the decoys or stuffed turkeys on ROWs or in adjacent fields in an attempt to apprehend road-shooters in the act of committing a wildlife violation.

Invest in strong, heavy gates and super locks. Make it a challenge before you enhance roadside habitats or ROWs for wildlife. You can obtain gate plans from several sources. Remember, you must have a landowner's permission. Placement of a gate is critical; make sure outlaws cannot drive around locked gates. Poachers will try to slip onto your property another way, be observant. In fact, when outlaws learn you are managing for more turkeys or deer, your efforts will attract them, be vigilant.

### WALK-IN-ONLY AREAS:

Another way to manage people (roads?) is to create **Walk-in-Only** turkey hunting areas to improve

hunting quality, curtail road-hunting, reduce hunter conflicts and hunting pressure. make them walk.

For example, wildlife managers and Forest Service personnel created a **Walk-in-Only** turkey hunting program by closing some roads entirely, and closing parts (1/3, 1/2) of other roads. You had to walk or travel by bike (no motor), horse or mule. The managers discussed the plan with many hunters before implementing it. They planned the lock-out so that access to most areas was still practical. After the hunting season, a survey of hunters that hunted on the area was conducted. Because the hunters felt road closures improved hunting quality and reduced interference from other hunters, they strongly supported (92%) walk-in-only turkey hunting. Many wanted more roads closed. Hunters who disapproved of road closures were significantly older than those who approved. Affected parties, landowners, managers, and

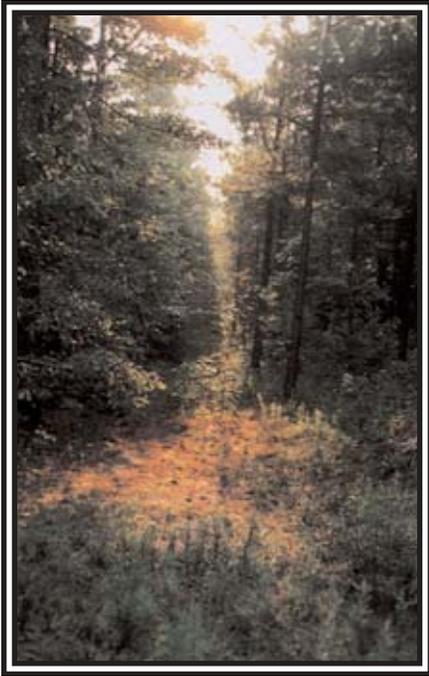
*Cooperative projects involving NWTf chapter Super Fund monies can lock gates to areas designated as wild turkey nesting areas. Roadsides can provide areas for nesting and growth of poults without human disturbance.*

hunting clubs can work together to select which roads to close.

Another option is to design or change road entrances or junctions so that poachers cannot see very far down your roads. Put a sharp curve at the entrance (junction), establish a vegetative screen (evergreen trees-pine, cedar), or an earth mound to hide the road. The obstacle or screen can quickly be altered for timber harvest operations, but make sure the loggers put it back.

Another people management practice is to make most roads dead end. Road-blocks and check stations are more effective on dead end roads. Construct a turn-around at the end: this can become a food plot. Trespassers do not like to go out the way they came in; leave them no escape route.

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Narrow and overgrown, this woods road is an example of a road that can be opened to sun and wind by a procedure called day-lighting.

### DAY-LIGHTING FOR WILDLIFE?

Many woods or secondary (spur) roads are too narrow. Forest industry learned the costly lesson of having narrow roads with a complete tree canopy over them. Sunlight and wind cannot reach the road surfaces, thus they remain dark and wet. Road maintenance costs are high. Therefore, widen roadsides and ROWs, remove most trees at the road edge to allow sunlight and wind to quickly dry roads. Wildlife managers like the

above practice, and call it day-lighting roads, improving the vegetation for wildlife. Undesirable trees and brush are removed, and more desirable plants (i.e., forbs, grasses, vines) proliferate. These plants provide turkey food (i.e., insects, berries, seeds, green forage). A field-like habitat is created next to roads. A few highly productive mast trees (e.g., white oak, persimmon) can be left. The width (75 feet?) and how much of a roadside (1/2 mile?) to day-light varies.

Day-lighting can be expensive but may be conducted as part of a timber sale. Merchantable trees (pulpwood, sawlogs) can be sold to defray the costs. The Tombigbee National Forest personnel and the

Mississippi Chapter, NWTf, entered into a cooperative program to day-light closed roads. Super Fund money was used to initiate the project, then timber sale money was used to complete mechanical (bulldozer) and chemical (herbicide) work. Stump removal and disking were part of the contract. Best Management Practices, known as BMPs to foresters, must be used to minimize erosion.

Vegetation on day-lighted roads will have to be managed by control burning, disking or spraying to prevent "take-over" by hardwood brush and pines. Spot (back-pack) spraying can be used to selectively kill hardwood tree species, while leaving bushes (e.g., blueberry) that



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Day-lighting improves the surrounding vegetation for wildlife so more desirable plants may grow. A field-like habitat is created along the roadside.

GENE SMITH; INSET: NWTf STAFF

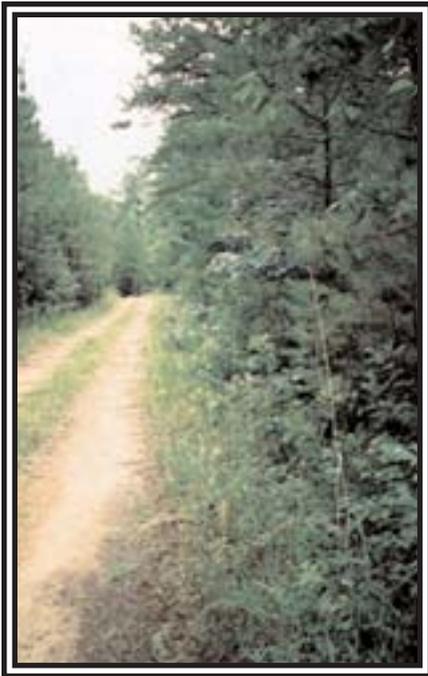


This successful father and son team is probably part of the 92% of turkey hunters who strongly support Walk-in-Only turkey hunting and want more closed roads. INSET: Walk-in-Only hunting areas reduce hunter conflicts and hunting pressure and can improve the quality of hunting. Signs, such as this example, are another use of NWTf chapter Super Fund monies.

produce fruit. Parts of day-lighted strips can be planted to permanent or temporary turkey food plots.

Often, roadside vegetation is dominated by hardwood brush and volunteer pine trees. This vegetation is of little use to turkeys and it can be controlled by a herbicide. Rig a boom spray to a farm tractor, and deal death to the brush so more favorable plants (e.g., grasses, forbs) can grow. Roadsides that are not too rank with hardwood brush can be bush-hogged about every 2 years to control invading brush and pine.

Smaller tract woods, spur roads and trails can be even narrower, but they can be improved for turkeys by widening them via chainsaw or



*Often roadside vegetation is dominated by hardwood brush and volunteer pine trees which can be controlled by bush-hogging or herbicide application. Wider roadsides decrease a predator's chances of ambushing a turkey.*

bush-hog. Control access by gates or place a heavy log or a partially cut (living) tree across trails or lanes. Earth mounds also work. To assist with costs, include road-widening in a timber sale contract. During timber harvest operations, trails or skidder lanes are made. Include a clause in the contract that states that trails or skidder lanes be cleared and widened. Following a timber sale, there are usually log decks next to roads. Put in the contract that these sites be cleared of heavy logging debris and trash.

Log decks, woods roads and trails can be allowed to return to native vegetation or they can be planted to turkey food plants. Usually, these sites are taken over by dense brush and are no longer good turkey habitat. You will have to apply a herbicide, control burn or

disk to maintain a field-like habitat before planting.

Another reason to widen roads is to decrease a predator's chances of ambushing a turkey. Roads are excellent travel corridors and hunting places for bobcat, coyote, fox, and feral dog. Roads have lots of edge; predators hunt edges! Once, a hunter told me how a bobcat had easily ambushed and killed a hen on a narrow (20+ feet) bulldozed trail in a hardwood regeneration area. Turkeys and other species will have to be wary. Managing roadsides to enhance turkey habitat is a risk, but the positives out-weigh the negatives.

Finally, more people-road management. Leasing land to hunting clubs is widespread. Land owners (i.e., farmers, ranchers, forest industry) and hunters have formed alliances through leasing, which helps turkeys and most wildlife. Forest industry owns and manages millions of acres of forests and plantations, and these properties usually

have high road densities. This status could be a problem, but most lands are leased to hunting clubs. Clubs and companies work together to limit road access; gates are the best tool to control road-shooters. Club members will control road use, gates/locks, and will take care of outlaws. Owners and hunters must agree on what types of vehicles are allowed, and when. A bond should be posted to cover repair of roads at the end of a hunting season.

Despite the many negatives associated with roads, managed roads can be beneficial to most wildlife. On the road again?



*Leasing land to hunting clubs is widespread. Club members can control road use through locked gates and patrolled areas and maintain the roads throughout the year.*