

The North American Model of Wildlife Conservation – Part I

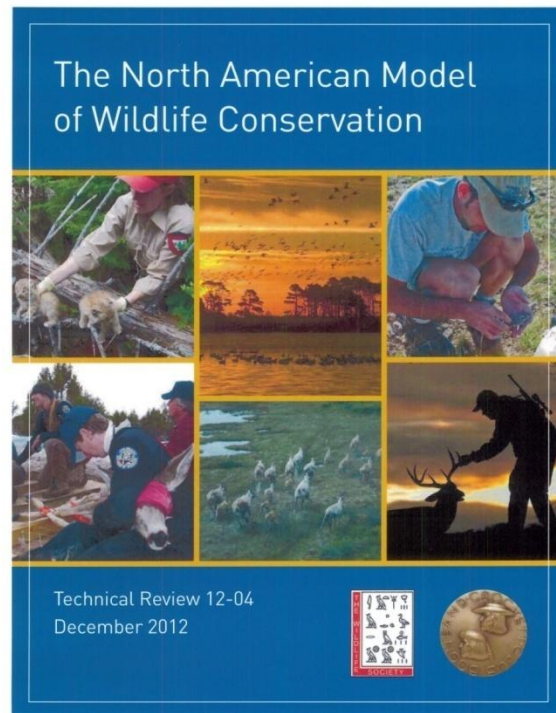
Model Foundations

Dr. Darren A. Miller, Certified Wildlife Biologist®, Southern Timberlands Technology

Editor's Note: The North American Model of Wildlife Conservation is arguably the most successful effort to restore and conserve wildlife resources in the world. The Model is based on the role of hunters in conservation, but the story of The Model is very poorly known. This series will explore The Model in 4 installments: Model Foundations, Model Pillars 1-3, Model Pillars 4-7, and The Future.

The North American Model of Wildlife Conservation is a concept intertwined with the history of North America and developed, over many decades, by giants of conservation – leaders such as Theodore Roosevelt, Aldo Leopold, and George Bird Grinnell. It is important to understand that the Model was not developed all at once. Rather, it was an evolution of thought and components, with hunting as an integral component, that were finally articulated as “The Model” by Dr. Valerius Geist in 1995. Recently, several organizations, such as The Wildlife Society, have worked to publicize

the Model and its importance to wildlife conservation.



The North American Model of Wildlife Conservation has recently become a focus of several wildlife conservation organizations and state and federal wildlife agencies.

The Model is composed of 7 pillars:

1. Wildlife resources are held in a public trust;
2. Markets for game animals are eliminated;
3. Allocation of wildlife is by law;
4. Wildlife can be killed only for legitimate purposes;
5. Wildlife is considered an international resource;
6. Science is the proper tool to discharge wildlife policy;
7. Democracy of hunting is standard.



After European settlement of North America, market hunting was legal and wildlife were slaughtered to feed growing populations on the East Coast.

Top photo from Wisconsin History.org and photo at left from the U.S. Fish and Wildlife Service.

However, before we can explore these pillars, the conservation landscape in North America must first be understood as, in this history, are roots of the Model.

The foundational concept of the Model, that wildlife is owned by the people, came across the Atlantic Ocean as North America was settled by Europeans. In Europe, wildlife was owned by the land owners – the aristocracy. Commoners were not allowed to use this resource and it was commoners that largely settled the New World. When they arrived, they found a vast resource, thought to be inexhaustible, of wild beasts and fowl, and this resource was vital to survival of those early colonists, as it had been for centuries before for the native Americans.

From settlement of North America by Europeans, wildlife belonged to the people. However, this created a new problem – a tragedy of the commons whereas the resource was overexploited. For many decades, wildlife was harvested for human

use without regard to sustainability or the next generation. Growing populations on the east coast of North America demanded an increasing supply of food, including wild game. At the time, it was legal to harvest and sell wildlife and the profit motive was a monumental motivator for this exploitation. Over time, development of railroads allowed harvest of animals further and further away from city centers. The result was a vast, unregulated slaughter of wildlife. Some species, such as the heath hen, Carolina parakeet, and passenger pigeon, did not survive. Other species such as

American bison, wild turkey, and white-tailed deer, were barely hanging on.

The root cause of this exploitation was a profit motive, as mentioned above, and lack of regulation. However, a new type of wildlife user was emerging in North America – the recreational hunter. As standards of living increased, individuals were able to pursue wildlife for recreational value and not to make a living or to sustain themselves. These hunter-conservationists began to realize that unless something changed, the animals they cherished and enjoyed pursuing would be gone forever.

In fact, the Boone and Crockett Club, the oldest conservation organization in North America, was organized in part to begin recording measurements of big game species thought to be vanishing. Founded by Theodore Roosevelt and George Bird Grinnell in 1887, the Boone and Crockett club had another important role – to use influential members to promote wildlife conservation measures such as passage of laws, establishment of wildlife management institutions, designation of wild lands, and “fair chase” ethics which became the basis for many hunting laws in the U.S.

Emergence of a conservation ethic, led by hunter-conservationists, most notably Theodore Roosevelt, changed the conservation landscape, including passage of 2 landmark laws – the Lacey Act in 1900 which eliminated market hunting and the Migratory Bird Treaty Act in 1916. By the 1920’s, much infrastructure was in place, including developing state wildlife agencies, directed to work toward wildlife conservation and management, but wildlife

populations were still in peril. Part of this reason was a lack of science needed to develop effective wildlife policy and funding to support such efforts. These needs were articulated in 1930 by Aldo Leopold, considered to be the father of modern wildlife management, and others. Within 10 years, game management curricula were developed, cooperative wildlife research units were established, a professional organization for wildlife biologists (The Wildlife Society) was founded, and 2 key funding mechanisms were enacted – the federal Duck Stamp program and the Federal Aid in Wildlife Restoration Act. The Duck Stamp program requires waterfowl hunters to purchase stamps with funds used for wetland conservation. The Federal Aid Act instituted an excise tax, now at 11%, on hunting equipment and firearms with funds collected allocated to states for wildlife conservation. These dedicated funding sources, along with license and permit sales, are still the primary, stable sources of funding for wildlife conservation in the U.S. today – conservation largely paid for by hunters. Later laws and rules were passed to further wildlife conservation, such as the Endangered Species Act in the U.S., but conservation success, articulated in the Model, was born from hunter-conservationists and these same individuals remain critical to conservation in North America today.

An example of this success can be seen in recovery of wild turkeys. Historically low populations in the 1920s due to over-exploitation and habitat loss were recovered from a combination of habitat recovery,

laws regarding take, science, actions of state and federal agencies, and the conservation ethic of turkey hunters.

Before we discuss pillars of the Model, we must briefly discuss a missing element from the Model. That is, the need for wildlife habitat. Like the wildlife that inhabits it, the forests and grasslands of North American were regarded as inexhaustible resources with no concept of sustainable use. The vast eastern forests were cleared and the prairie was plowed under.

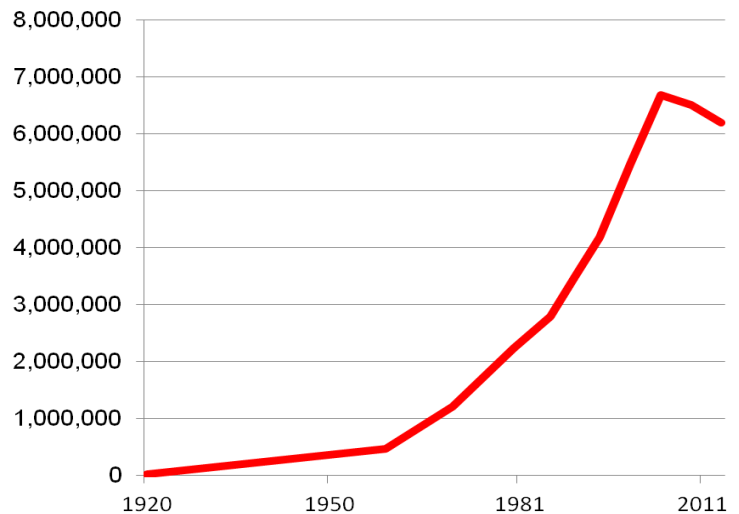
However, Theodore Roosevelt and others realized that wildlife need a place to live. Thus, a system of public lands was

developed. Also, concurrent with development of the Model as discussed, was recovery of habitat conditions needed for many species. For example, in the east, farms on highly erodible, low fertility forest soils were abandoned and forest conditions returned, providing the matrix for recovery of many wildlife populations. Today, we clearly recognize importance of habitat for wildlife sustainability and that habitat loss is likely our most significant threat to wildlife into the future.

In the next installment, I will explore the first 3 Model pillars and use the wild turkey as an example species throughout the series.



Estimated wild turkey population in the United States



Recovery of wild turkey populations in the U.S. exemplifies success of The North American Model of Wildlife Conservation. Turkeys reached a population low of < 100,000 in the entire U.S. during the 1920's due to overharvest and habitat loss. However, elimination of market hunting, establishment of laws, and application of science restored turkeys so that today this species occurs in 49 states with an estimated population of over 6 million birds.

Species of the South

Dr. Jessica A. Homyack, Certified Wildlife Biologist ®, Southern Timberlands Technology

One of my favorite things about being a biologist is that there is a seemingly unending list of things in the natural world that I know little about. Thus, there are always opportunities for me to improve my naturalist skills and knowledge and pass that information on to others. Lately, I've been learning about butterflies and have been fascinated by their complex and amazing lives and hopeful about the conservation challenges they face. In this column, I focus on the most well-known of butterflies, the monarch.



Monarch butterflies feed on nectar of many different flowers as adults but rely on native milkweed for successful breeding.

Monarch butterflies occur throughout the eastern and midwestern U.S. and into southern Canada with another population on the western U.S. Monarchs received their name from being considered the most beautiful and thus the “king” of the butterflies. Like other butterflies, monarchs

go through four stages during their life cycle, starting with an egg, turning into a caterpillar, next a chrysalis, and finally the adult butterfly. Populations go through several life cycles in a year as the entire journey from egg to adult only takes about 6-12 weeks. Things get really interesting for the fourth life cycle of monarchs in the early fall. Instead of dying, these butterflies fly up to 3,000 miles in an incredible mass migration to wintering grounds in Mexico for the eastern U.S., California for monarchs west of the Rocky Mountains. Monarchs are the only butterfly species in the world to migrate. These butterflies can fly over 100 miles in a day, follow migratory routes just like birds, and congregate in stopping points along the way. The U.S. Fish and Wildlife Service estimated that 56.5 million butterflies migrated to Mexico this year, and they gathered on a tiny, 3-acre wintering site. What a sight that must be. These migrants will attempt a return journey north the following spring and complete the round trip only once before dying. Their return to U.S. summering grounds starts the four generation cycle over, with their great grandchildren completing the next year's migration. Keep your eyes open for monarchs during the fall hunting season and wish them well on this astonishing journey.

Many butterflies have one or more specific “host” plants on which they lay their eggs and their larvae (a.k.a. caterpillars) feed.

The host plants provide many butterfly names: spicebush swallowtails use spicebush, wild indigo dusky wings use false indigo, etc. Monarchs are extremely specific, and will only lay eggs on the leaves of certain species of milkweed (*Asclepias* spp.), and their caterpillars will only eat



Monarch caterpillars start as an egg laid on the underside of a milkweed plant and will later turn into a chrysalis and finally a butterfly.

milkweed leaves. Eating milkweed makes the caterpillars and adults unpalatable to predators. Some people estimate that there has been more than an 80% decline in



monarchs over recent decades and unfortunately, the decline of milkweed in the United States is a major contributor to this decline. Cleaner farming practices with less native vegetation in and alongside of agricultural crops and increased urbanization are some of the reasons that milkweed is less common now. Further, the migratory life history of monarch butterflies means that conservation efforts need to span international borders to be successful.

One of the best things you can do to help monarchs or to attract other butterflies is to plant or maintain native milkweed to provide the necessary host for eggs and caterpillars. As adults, monarch feed on the nectar of many different species of flowering plants, using their long proboscis to drink the sugar nectar that provides energy for breeding and for migrating. Thus, having extensive areas of native flowering plants both in the spring and late summer provides food resources for migrating monarchs and will attract dozens of other butterfly species. Further, allowing flowers to bloom on roadsides, meadows, and other openings rather than mowing them and limiting use of pesticides will also benefit monarchs and other pollinators. To learn more about butterflies, what species of milkweed to plant, or about other pollinators, I recommend visiting the website of the Xerces Society at: www.xerces.org.

Milkweed plant species are essential to the conservation of the amazing monarch butterfly.

Weyerhaeuser Outdoors Announces Changes for Recreational Lease Managers

Please join us in thanking Peyton Weeks, North Louisiana Region, for not only serving as the Recreational Lease Manager for that region over the past several years, but also for his leadership as the Southern Recreational Lease Team Leader. Peyton has assumed new job duties with Weyerhaeuser thus necessitating some changing roles.

Mark Woods has assumed the role of the Recreational Lease Manager in North



Louisiana. After Mark graduated from Louisiana Tech University in Forestry, he accepted a position with Willamette

in Ruston, Louisiana where he worked there until the Weyerhaeuser acquisition of Willamette in 2002. He was then transferred to Taylor, Louisiana as a Production Forester and eventually worked as a Land Use Forester. In addition to now serving as the Recreational Lease Manager for the North Louisiana region, Mark is also a Site Safety Coordinator. Mark has been working with recreational leases since the days of Willamette. He knows many of the North Louisiana leaseholders already and looks forward to meeting and working with the ones he hasn't met.

Mark is married to Jennifer Woods and they have a seven year old daughter and a two year old son. Mark loves the outdoors. He is an avid bass fisherman and loves bow hunting. He is one of the original members of a local bass club serving as treasurer. It is now probably the largest bass club in the state of Louisiana with almost 100 members.



Ken McCool has accepted the southwide leadership role for the Recreational Lease Program. Ken will relinquish his role of Environmental Manager for the MS/AL region and will now concentrate full time on the Recreational Lease Program. Ken is a graduate from Mississippi State University with a Bachelors Degree in Forest Management. Ken has been actively involved in the Recreational Lease Program since its inception in 1986 and has been the MS/AL Recreational Lease Manager since 2008, a role he will continue to fill.

Mobile Applications for Deer Management

Dr. Bronson Strickland, Assoc. Extension Prof., Certified Wildlife Biologist®, Mississippi State Univ.

The Mississippi State University (MSU) Deer Lab, MSU Extension Service, and Mississippi Department of Wildlife, Fisheries and Parks are taking deer management into the 21st century. We are very excited about 3 mobile technologies that are available for hunters and deer managers this fall. These 3 phone “apps” were designed to help you with some of the most important deer management activities: Aging deer, food plots, and deer data record keeping.

The Deer Aging app was developed to help age live deer “on the hoof” and to help with aging jawbones when you get back to the skinning shed. The app displays pictures of bucks from 1.5 to 5.5+ years of age and contrasts different body features to help hunters distinguish young, middle-aged, and mature bucks *before* pulling the trigger. At the skinning shed, you can extract a jawbone and compare tooth wear of your harvested deer to the examples provided in the app.

The Deer Food Plot app was developed to assist with planning and planting forages for deer. The app provides plant characteristics of the most common cool-season, warm-season, and perennial forages and instructions for taking a soil test. The app also provides a measuring tool you are sure to use time and time again – an acreage calculator.



Using the app, simply draw an outline around an existing food plot, or one you want to create, to get an accurate measure of acreage. You can then select what forages you want to plant and the app will adjust all seeding rates based on plot size. What’s more, you can save these



Manage food plots, record deer observations, and age deer before and after harvest using apps available from the MSU Deer Lab.

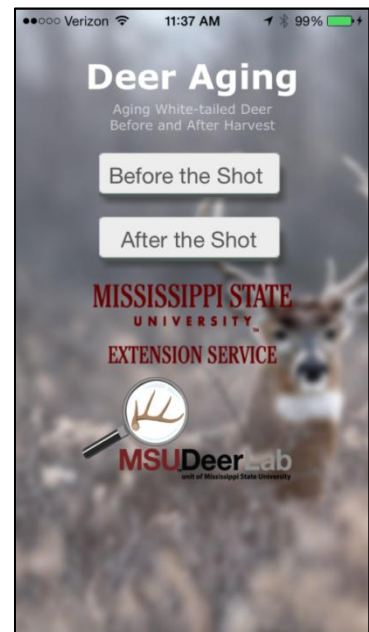
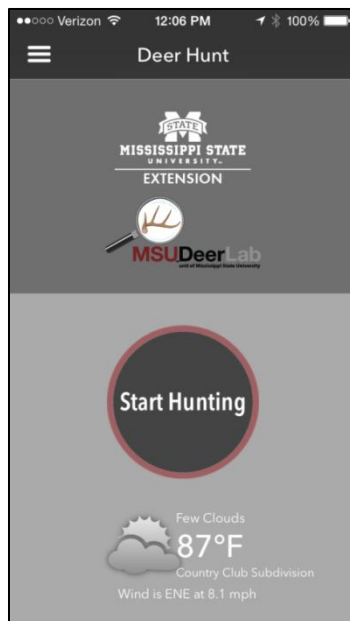
Photos courtesy of Darren Miller.

reports to use later, or email them to other people.

The Deer Hunt app was developed to make collecting the most critical deer data painless and paperless. Deer observation data like how many deer seen while hunting, the ratio of fawns, does and bucks seen, number of mature bucks seen, etc., are some of the most important data for a deer manager to collect, but most people don't do it. This is likely because most people just don't want to deal with the paperwork and "crunch" the numbers. But with this new app, there's no more filling out observation forms or recording numbers on harvest sheets – all those data can be entered and recorded on your phone. You can set up an account for your hunting club, so that all the deer data are recorded for hunting club members, or if you are not a member of a hunting club, you set up a private account to only record your deer data. You can even enter stand locations on the app and see what the weather conditions are at your hunting property. After a successful hunt, harvest

data such as body weight, antler size, etc. can be entered in the app too. The data are stored at MSU and users can run reports on number of deer seen from a particular stand, deer sightings in morning versus afternoon, fawns per doe, location of mature buck sightings, etc. Just about every question you could have about deer sightings and herd characteristics can be answered with the app – if you and your club members use it every time they hunt. The more data you enter, the more you can learn.

All these apps are free and can be found in the App Store if you search for MSUES. You will find these deer apps and others developed by the MSU Extension Service. Currently, the Deer Aging and Deer Food Plot apps are for iPhones only – we hope to have Android versions next year. The Deer Hunt app is available in both iPhone and Android. So please, encourage your fellow hunters to use it and have fun using these tools while hunting this fall.



Research Helps Conserve Wildlife in Managed Forests

Editor's Note: This article is reprinted and modified from an article appearing on Weyerhaeuser's internal website

About three years ago, Dr. Jessica Homyack noticed spotted turtles basking in the ditches that border Weyerhaeuser's forest roads in eastern North Carolina. The Company wildlife scientist was especially curious because these turtles are considered endangered in Canada and are a species of concern in several eastern states (*Editor's note: since this article was first published, the spotted turtle has been petitioned to be listed as an endangered species in the U.S.*).

"We didn't know much about them in the southeast where our pine forests are intensively managed," she says. "But they seemed to be doing well here and we wanted to understand why."



Spotted turtles are common on Weyerhaeuser land in eastern North Carolina. However, the species is being considered for listing under the Endangered Species Act.. *Photos by C. O'Brvan.*

Embarking on a research project, Homyack partnered with a Clemson University student

to mark more than 250 of the brightly dotted turtles to observe their behavior. About 30 were fitted with radiotransmitters to track their movements.

The data gathered are helping Weyerhaeuser learn how forest management activities may or may not affect the population. Because the turtle is a species of concern, the information also will be shared with the The North Carolina Wildlife Resources Commission, the agency that oversees this species in the state.

Farther west in Louisiana, 42 breeding pairs of red-cockaded woodpeckers are being managed for on 58,000 acres of Weyerhaeuser timberlands. Listed as federally endangered in the 1970s, this species nests in cavities in live pine trees and forages in mature, open pine forests. The arrangement is part of an agreement developed jointly by the U.S. Fish and Wildlife Service (USFWS) and the Louisiana Department of Wildlife and Fisheries under a program associated with the Endangered Species Act (Safe Harbor).

Other similar agreements are in place for the endangered Red Hills salamander in Alabama and the endangered American burying beetle in Arkansas and Oklahoma. For other listed species, such as the northern long-eared bat, gopher tortoise, and bald eagle (no longer listed, but still a species of high conservation concern), Weyerhaeuser uses an internal process to ensure

compliance with the Endangered Species Act where these species occur on Company land. This includes training for forestry staff and working with external cooperators and stakeholders when it makes sense to do so.

Science-based research

“These are just a couple of examples,” says Dr. Darren Miller, manager of Southern Environmental Research, “of the conservation work taking place at Weyerhaeuser.”

Miller and Homyack are members of our small but highly regarded team of Company scientists, biologists, and technicians. They conduct research and provide technical support to Weyerhaeuser’s Timberlands businesses. They also work with research organizations from universities, government agencies, and other partners to understand biodiversity on Company lands and manage threatened and protected species and ecosystems on the six million acres of Weyerhaeuser’s U.S. timberlands.

“Weyerhaeuser is in a unique position,” says Miller. “We have two obligations — to manage our land for our shareholders and to protect the environment. That’s why the science-based research we conduct and the data we gather are so valuable to the business and the Company.”

Mike Rochelle, manager of Weyerhaeuser’s Western Wildlife Program, agrees.

“Regulations and decisions affecting the Company and how we manage must be grounded in good science,” he says. “With

sound data in hand, we improve our processes, increase our scope of influence, and are better prepared to respond to new challenges.”

For example, in response to Endangered Species Act protection enacted recently for the Taylor’s checkerspot butterfly, a species that has been undergoing declines throughout its range in the western United States, Weyerhaeuser is collaborating on a restoration and conservation project with Washington Department of Fish and Wildlife. Using funds provided by the USFWS State Wildlife Action Grant Program, the project will help identify critical habitat requirements and recovery opportunities.

Mega-petitions

Another challenge potentially affecting forest landowners concerns a provision in the Endangered Species Act that allows citizens to petition the federal government to list species they believe to be threatened.

The result has been a flood of “mega-petitions.” Since 2007, requests to list more than 1,250 plants and animals have been filed. More recent petitions request listing of 404 aquatic and wetland species and 53 amphibians and reptiles, found largely in the southeastern U.S. As the USFWS works through these petitions, Weyerhaeuser staff will also be working to help ensure conservation actions are based in science and that the Company is prepared for those species that are ultimately listed for protection.

Technology and its Impact on Outdoor Recreation

Ken McCool, Recreational Lease Manager

When it comes to technology, we have become accustomed to information being available within a few seconds of a search and outdoor recreation has benefitted as well. Only a few short years ago, trail cameras were becoming the latest technology craze for deer scouting. How many of you can remember excitedly retrieving your role of 35mm film from your



Improvements in trail camera technology reflect an increasing reliance on technology for hunting.

trail camera only to be disgusted when all pictures were a bright flash or that your new batteries had only lasted a few days? Today, we have SD cards that can hold up to thousands of pictures and have cameras capable of sending pictures to you by email or instant message. We have batteries that last months and photo quality so clear we can get to know all the deer by name.

Smart phones allow us to navigate our hunting areas and locate hunting stands with ease by using high resolution photographs. We can receive detailed rainfall amounts on all our field locations with just a couple of clicks.

Hunting Apps are becoming too numerous to list and most are available free of charge (see article in this newsletter about deer hunting apps from the MSU Deer Lab). Mobile technology allows us to instantly see wind direction, temperature change, etc., allowing us to plan hunts based on up-to-the minute weather information. Safety and communications between your hunting partners has also benefited from technology.

State agencies provide websites and apps with seasons, regulations, food plot planting guides, Wildlife Management Areas, licenses and other topics of interest. Many states are going to online tagging systems to track hunter harvest.

Improved technology allows us to be more efficient hunters, but basic skills of the outdoorsman are being lost. The art of reading sign, wandering about your property looking for rubs and scrapes, and enjoying the full benefit of the outdoors can never be replaced by gadgets. It is not all about the hunt, it is about the experience and the memories created with family and friends that we will remember most.



HUNTING/LOGGING SAFETY COOPERATION

Safety: hunting

August 2015

INTRODUCTION: With deer hunting season approaching, a number of activities are starting in the woods. It is important to maintain a safe workplace on active logging jobs. Logging crews need to be aware of this increase in activities and be sure to stay on the lookout for hunt club members traveling to and from their hunting areas. Members of the hunt clubs also need to be aware of the hazards surrounding logging operations and to avoid these potential hazards.



Fig. 1: Hazards for hunt club members to be aware of include congested road access . . .

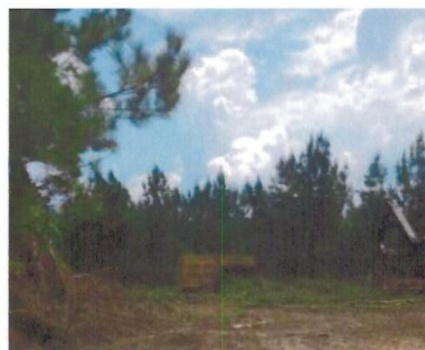


Fig. 2: . . . and logging machines such as delimitators.

OPERATION: Safe work procedures for loggers and landowners to enforce with hunt club members:

- Stay at least 300 feet from cutting machine.
- Stay at least 300 feet from delimitator.
- Stay at least 2 tree-lengths away from loader.
- Stay at least 2 tree-lengths, or 100 feet, from skidder in operation.
- Avoid active logging haul routes if at all possible. If travel on active logging haul roads is necessary, do it *with caution*, watching for loaded or unloaded log trucks. (Try to inform the logging crew foreman and truck drivers when you are coming in and out of an area by means of an active logging road.)
- No persons or hunt club members are to be present at logging operations without the permission of the logging crew, and they must conform to the visitor and Personal Protective Equipment policy.
- Do not hunt in close proximity to any harvesting operation while the logging crew is working. Hunt on blocks/tracts away from the active logging site or after the crew has left for the day.

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SFI® 2015-2019 Forest Management Standard Principles

2. Forest Productivity and Health

To provide for regeneration after harvest and maintain the productive capacity of the forest land base, and to protect and maintain long-term forest and soil productivity. In addition, to protect forests from economically or environmentally undesirable levels of wildfire, pests, diseases, invasive exotic plants and animals, and other damaging agents and thus maintain and improve long-term forest health and productivity.



Sustainable Forestry is:

- Forestry practiced with a vision for the future and is carefully planned;
- A factor that increases biodiversity and improves wildlife habitat;
- An activity that improves our lives by creating stable jobs and providing recreation.



Good for you. Good for our forests.
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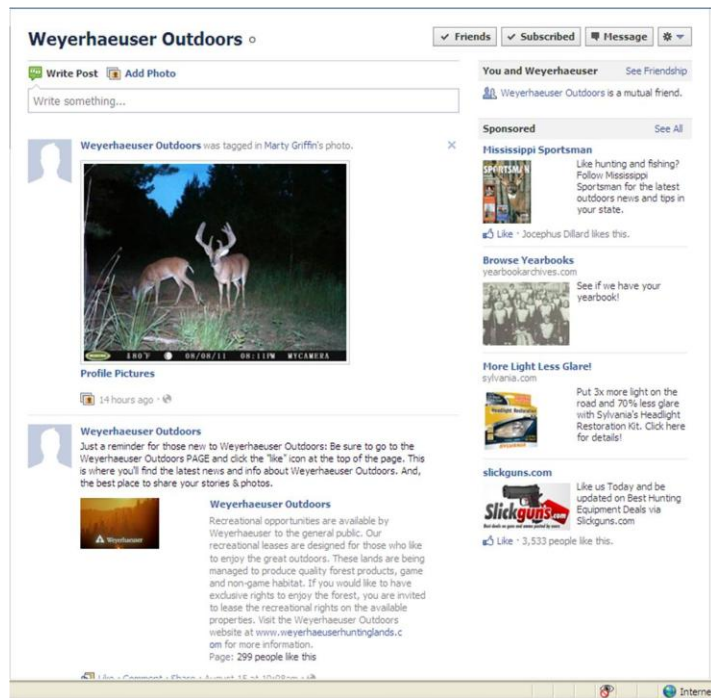
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WEYERHAEUSER OUTDOORS ON FACEBOOK

Have you found us on Facebook yet? Our page name is “**Weyerhaeuser Outdoors**”. Our goal is to provide a quality experience for all outdoors enthusiasts. On the Weyerhaeuser Outdoors page, you can:

- Catch up on the latest outdoors news and information, both in Weyerhaeuser and in your local community;
- Interact with other enthusiasts;
- View photos of nature and wildlife, and post your own photos;
- Brag! Let’s see the results of your hunts and outdoor adventures!

Be sure to go to the Weyerhaeuser Outdoors PAGE and click the "like" icon at the top of the page. This is where you'll find the latest news and info about Weyerhaeuser Outdoors. And, the best place to share your stories & photos. If you aren't sure about how to use Facebook, just ask your teenager or your grandchild; they will have you social networking in no time!



We want to hear from you!

We are looking for hunt club members to submit questions (wildlife management, forestry, hunting, etc.), ideas for articles, comments, and photos to include in future newsletters. We would also like to feature different Weyerhaeuser hunting clubs in our newsletter. If you have something of interest for us or are interested in having your club profiled, please send an email to MSALHunting@Weyerhaeuser.com and we will work with you to get a story on your club into a future newsletter - *Editor*