Typical Stewardship Forest Management

Story by Thomas M. Manuel

There is nothing typical about a landowner who cares enough about his or her place to maintain it as a Stewardship forest. Yet Stewardship forest owners certainly have typical objectives and management strategies and must face typical problems as well. This article attempts to describe a Stewardship forest, as well as to outline and discuss practices and problems common to managers of private forest land in our region.

THE TYPICAL STEWARDSHIP FOREST

As no two properties are identical, neither are there two landowners who manage exactly alike all of the time. So what characteristics do Stewardship forests have in common? How do they operate? What do they do year in and year out?

In the area I most commonly work, the Florida Parishes and southwest Mississippi, most landowners maintain a mixture of pine stands, hardwood stands and openings, which may be as small as food plots or as large as cattle pastures. Throw in a pond or two, a picturesque creek, some invasive species, fluctuating timber markets, mill closures, cost share shortages, wild hogs, increasing capital gains and estate tax rates, a shortage of logging contractors, and competing land uses, and you have the “typical” Stewardship forest.

TYPICAL OBJECTIVES

Most forest management plans rightfully begin with a statement outlining the management objectives of the owners. The typical objectives I encounter are timber management/economics, wildlife management and aesthetic appeal. Thankfully, these interests can complement each other most of the time. Regardless of how the landowner prioritizes these objectives, it is very important that he and his forester/biologist are on the same page.

For most Stewardship landowners, their timberland represents a significant portion of their net worth. Yet they often value their farms by non-economic means as well, because they truly love their land and the unique opportunities it provides. There are few investments more enjoyable for the outdoors person than owning acreage. Still, it is an absolute truth that the best way for forest lands to remain forested through the generations is for them to remain profitable as forests. Even though a landowner may derive most of his enjoyment from bird watching, hunting, looking at wildflowers, family functions on the land, etc., the reality is that there are costs involved in owning the land. A good steward will ensure that sufficient financial returns are realized from the asset in order to render the asset viable over time. Therefore, the most commonly listed objective among the Stewardship owners I represent is timber management. Fortunately, when the timber is managed properly, the wildlife and aesthetics follow naturally.

PINE MANAGEMENT

In my area, most forest landowners maintain a portion of their land in pine stands. Due to their rapid growth, pine stands often bear the burden of producing most of the timber revenue from a given tract. These days the typical pine stand has been artificially-established by chemical site preparation and planting of genetically-improved stock, most often loblolly pine. Chemical site prep techniques have come a long way over the last 15 to 20 years and are now preferable to mechanical site prep methods, both in efficiency and cost. Mechanical site prep tends to be extremely expensive and can damage site productivity due to movement of topsoil and subsequent erosion. If bulldozing allows a landowner to plant 5 to 10 percent more trees, yet...
nearly doubles the cost of the operation and lowers site productivity, the practice is self-defeating. In fact, bulldozing is only necessary on harvested sites containing so much debris that tree planters simply cannot access the soil. This is seldom the case when regenerating pine stands that have been burned as part of their management. Thus, good planning before the final harvest reduces costs and increases profits.

Following site preparation, between mid-December and mid-February, pine stands are planted with 600 to 700 genetically-improved pine seedlings per acre. Most landowners are now planting second generation trees. Once the trees are planted, what they need most is something we cannot give them - rain. Excessively dry weather during the spring following planting is probably the biggest killer of pine plantations in the South. Excellent site prep, vigorous planting stock, and a good planting job cannot produce or sustain trees if soil conditions become hot and dry within a few months of planting. However, planting properly and early in the winter is the best hedge when the weather turns tough. Other first-year problems in our area include occasional Pales weevil outbreaks and, very rarely, herbivory by deer. Your forester will know how to plan for and handle each of these pests.

Once a new crop of trees makes it through the first year, it is typically “off to the races,” provided chemicals have been used properly to reduce competition. However, sometimes herbicides can be over-used on a particular site, especially if improving wildlife habitat is an objective. Consecutive applications of tank mixes (more than one herbicide) can reduce plant diversity and browse availability, thus decreasing habitat quality in an area. Many times an application of Imazpyr during site preparation or shortly after planting is all that is needed to give seedlings an advantage over most direct competition. Rarely, a stand may need a second spraying to release it from competition that has come up from dormant seeds. Don’t worry about a few briars mixed in with the trees. Blackberry/dewberry provides excellent browse and nesting cover, and seldom out-competes the planted seedlings. Once this goal of reforesting the site is reached, barring wildfire, the likelihood of the new stand making it to merchantability is excellent.

THINNING – OR NOT

In our area, pine stands are usually ready for their first thinning (if thinning is the plan) at 13 to 14 years of age. However, the window of opportunity actually spans from about 11 to 16 years of age. Early in the window - at 11 or 12 years of age - the trees normally benefit from additional growth rather than thinning. However, if the pulpwood market should boom when the trees are young, consideration should be given to thinning at that time. (Stewardship is not synonymous with non-profit.) The middle of the window - 13 to 14 years in most cases - is ideal for thinning the trees. Yet, if there is a very poor market during that time, thinning can be delayed briefly. Once the trees have gotten to the end of the window (15+ years), they should be thinned for the health of the stand, even if the market is less than great at the time.

Thinning, however, is not the only viable alternative for a pine stand in a Stewardship forest. Pine stands were historically thinned multiple times over many years, with the goal of leaving the best trees to grow larger and larger. Eventually, the stand was clearcut and replanted at a ripe old age. For that approach to be profitable, a strong market for large, old timber must exist. Unfortunately, demand for large pine trees with excellent grade has slumped over the years. This was not a total surprise. In the 1980s, forestry professors at LSU warned of this. They correctly predicted that mills would continuously improve utilization of smaller timber, and that engineered wood would increase in market share. This begs the question, “If profitable forestry is an objective, and the market favors smaller timber, then for what reason should we raise pine stands to old age?”

The real test of timber management alternatives came during late 2009 and early 2010 when an unpredictable combination of a paper mill reopening, low chip supplies, abnormally high rainfall, and a pretty decent surge in pine chip-n-saw and sawtimber prices caused the demand for small and medium-sized pines to skyrocket. With fresh memories of terrible markets in their heads, many landowners and foresters clearcut pine plantations that were only in their teens and early 20s. Landowners received good income from those sales and eliminated the physical and economic risks associated with continuing to hold their timber. This winter, those areas will be replanted, and so it’s “off to the races” again with a new crop of trees. Also, the mills which paid high prices got the wood they needed and were able to make it through the “crunch time,” therefore the market system appears to have worked.

But just what does this management shift mean for the Stewardship forest landowner? Should they stop managing for large pine sawtimber and switch to shorter rotations for fiber production? If profit is the
only priority, then perhaps they should, but only time will tell. We don’t know what new markets might develop or what old markets might re-emerge. In addition, profit is not the only priority. Stewardship landowners manage for multiple uses, and shorter rotations mean fewer options for wildlife management. Also, the economics of short rotations only appear favorable at very high prices, which are unreliable and difficult to predict.

There are wildlife and aesthetic concerns with short rotations as well. While deer, rabbits and other early-successional wildlife species can certainly thrive in short rotation management, others cannot. Furthermore, many landowners simply want to have larger timber on their property, which is a perfectly understandable ownership goal. Believe it or not, foresters enjoy big, pretty trees too.

What seems to make the most sense, regarding volatile markets, is that landowners should be observant. To keep doing something just because it has always been done is not a good reason for doing it. Neither is a thoughtless switch away from a proven management regime. Rather, the Stewardship landowner should know why he is doing what he is doing. And, if a place is large enough, try a mixture of short rotations on some areas and typical rotation lengths with intermediate thinning on others. That will only add to the diversity and attractiveness of the property. Above all, pay attention to your local markets. Know which mills are still in business, which are not, and whether or not new forest products facilities may soon emerge. If you plan to sell your product some day, you need to know what your local buyers want.

PRESCRIBED FIRE

Another common management tool used in the typical Stewardship forest is prescribed fire. The feature article in the Fall/Winter 2008 issue of the Louisiana Forest Stewardship Newsletter describes in detail many of the benefits and considerations of prescribed burning in our region. In general, prescribed burning is conducted during the winter and spring. Spring burns usually result in better control of competition than winter burns, while winter burns are preferable in younger stands or when other high risk conditions are present.

Advantages to burning include improved stand access, improved marketability, reduction in woody competition, and improved habitat conditions for many wildlife species. The disadvantages of burning are few, but the risks are very real. Burning should only be conducted by experienced individuals. That having been said, many landowners have become experienced and conduct their own burns quite proficiently.

As a forester who is in the woods almost daily, year-round, I can attest that typical, managed pine stands, particularly after thinning and prescribed burning, can support substantial populations of game and nongame wildlife species. It is common for me to see deer, turkeys, rabbits, squirrels and even northern bobwhites on some tracts, in the same pine stand on the same day. This is particularly the case when multiple ages of pine are adjacent to each other, and hardwood streamside zones are interspersed. Diversity of habitat types and cover/food near the ground are among the keys to abundant wildlife.

HARDWOOD TIMBER MANAGEMENT

In addition to pine stands, most Stewardship landowners in my area maintain at least part of their property in hardwood stands. Hardwood areas appeal to many people because of their beauty and their benefits to wildlife. Although well-managed pine stands are valuable year-round wildlife habitat, there is nothing better for many wildlife enthusiasts than spending time around mast-producing hardwoods during the fall. When oaks, hickories, American beech, common persimmon and others are producing their fruits, they become magnets for wildlife use. For the landowner who leases his property for hunting, the presence of some areas of older hardwood can add greatly to the marketability of the lease as well.

Unfortunately, typical hardwood management throughout the entire South has historically been poor. Diameter limit harvesting and/or cutting only preferred species caused the “high-grading” of many, if not most, hardwood stands over the years. Fortunately, over the last few decades, an increasing amount of research and awareness have reduced these practices on many properties. The development of markets for low grade and “off-species” products has also had a tremendous impact on the ability of forest managers to properly manage hardwood forests.

Even with increased awareness and improved markets, however, one common misconception remains among many landowners and some foresters. This is the notion that a hardwood forest can be thinned indefinitely without ever having a regeneration harvest. A management regime of continued single-tree selection without ever creating substantial openings favors shade-tolerant species such as elms, Southern magnolia, bluebeech, etc. If a landowner wants to maintain a high component of oaks in the stand, as most tell me they
do, they have to allow for sunlight to reach the forest floor at some point. Group selection/patch clearcutting several years after an improvement harvest seems to provide optimal conditions for the successful regeneration of oaks and most other hardwoods.

Optimal opening size in group selection harvest is five to 10 acres. However, stand conditions and tract size may dictate reduced opening sizes. Opening size can be reduced to no less than two acres and still achieve the same objective of releasing regeneration. Ideally, openings are created in areas having a mature overstory that “needs” cutting, and an understory that is well-stocked with vigorous hardwood seedlings and/or saplings. The larger block size also makes the sale more attractive to timber buyers and loggers, especially if several blocks are included in a sale. Some avid hunters cannot stand the thought of a few 10-acre clearcuts scattered over their land. However, once they have created a few, they tend to be very impressed by the high use these areas receive from deer and other wildlife. These areas benefit turkeys as well by providing nesting cover in otherwise open woodlands.

A couple of other “typical” practices found in well-managed hardwood stands involve harvests. When possible, the tops of hardwoods should be cut off where the tree is felled. Tops in the woods, rather than at a loading ramp, create excellent bedding areas for deer and rabbits. Also, the damage to regeneration and residual trees in a thinning is greatly minimized when the tops are not pulled throughout the stand. Similarly, bumper trees are small, low-value trees which are purposely left growing adjacent to higher value trees in a thinning. The smaller trees guard the larger, more valuable ones by deflecting falling trees, skidder tires and logs as they are skidded to the loader. These are just some of the reasons to work closely with your forester when planning a harvest in a hardwood stand. If operators are allowed to select trees for harvest in these stands as they typically do in pine stands, many of these details could be overlooked. This could have a negative impact on stand quality and future management potential as has been seen in the past. It is extremely important to have experienced personnel conduct marking activities and monitor the harvest operation.

**TYPICAL PROBLEMS**

As previously eluded, the typical Stewardship forest encounters typical problems in its management. Some of these problems are biological and just show up on their own, uninvited. Feral hogs (a.k.a. wild hogs), invasive plant species, insect pests and diseases present challenges to the skill of the land manager. Foresters and biologists are trained and experienced in the “how to” aspect of controlling these pests. Measuring the benefits and costs associated with this control is an economic exercise that tests the abilities and level of commitment of the Stewardship landowner.

Other problems might not be biological, yet are just as uninvited. Broadly, these include volatile markets and government actions. Again, for Stewardship forests to remain forested, it is imperative that they remain profitable. The unrelenting pressure of development in certain areas is especially tempting when timber profits are down. Also, a timber harvest can wait a while for markets to improve, while logging contractors and mills cannot. They must continue to produce even when market conditions are poor. When a logger goes out of business it hurts the local timber economy. When a mill goes out of business it takes with it a segment of that timber economy.

Land managers can deal with Chinese tallowtrees, Ips engraver beetles, and sometimes feral hogs, but not a lack of logging contractors and mills. Perhaps the best thing landowners can do about these problems is to be involved in elections and policy-making when possible. Pro-business ideas may seem intuitively anti-environment to many folks, but in reality the opposite is often true. Low taxes, minimum regulations, etc. tend to spur the economy, create jobs and increase the demand for forest products. High demand for forest products means high demand for forests, and all of the tangential values associated with forested ecosystems such as clean air, clean water, abundant wildlife, recreation and so forth.

**CONCLUSION**

Stewardship forests often share common characteristics, at least in my geographic region of the Florida Parishes and southwest Mississippi. It is common for their owners to have multiple objectives, usually including timber, wildlife and aesthetic concerns. The manifestation of these objectives “in the woods” takes the form of diverse timber types and diverse timber ages being interspersed throughout a given tract.

Typical management activities in Stewardship forests include chemical site preparation, reforestation and prescribed burning. Harvest strategies involve thinning and clearcutting in both pine and hardwood stands. Pine plantations often drive the economics of a Stewardship forest, yet they benefit wildlife and aesthetics as well. Conversely, hardwood stands are usually desired due to their wildlife and aesthetic values, yet they can also contribute greatly to the economic bottom line. Management problems, both natural and artificial, are common to most Stewardship forests as well.

In summary, it appears that proper management of a Stewardship forest requires a diversity of land management practices and a diversity of knowledge. If the proper application of forestry, wildlife biology, economics and good sense is employed, the Stewardship forest can be a dynamic place yielding a bounty of tangible and intangible benefits for its owners and the environment.

*Thomas Manuel is an LDWF Consulting Forester/Wildlife Biologist.*
Coping with Feral Hogs

Story by Michael Perot

Feral hogs (Sus scrofa), including European wild hogs and hybrids, are quickly becoming the most serious problem facing land managers and hunters in Louisiana. The Spanish originally introduced pigs to North America in the 1500s as another form of livestock. Through escape and release, pigs quickly adapted to life in the wild and became feral. Feral hogs are omnivorous, meaning they can eat anything from vegetation to carrion, though vegetation constitutes the largest portion of their diet. They have a very tough nose which allows them to root for invertebrates, tubers or any other subterranean food. In Louisiana, feral hogs are considered unregulated quadrupeds and may be taken year-round during legal daylight shooting hours by holders of a valid hunting license. They may also be shot at night under certain conditions. Feral hogs are targeted by hunters because they are excellent table fare and can be very challenging to hunt.

DESCRIPTION

Adult feral hogs commonly weigh 200 pounds, but may reach over 400 pounds. They vary in color from black, brown, white, blonde or reddish brown, and may be spotted or banded. Piglets may have longitudinal black stripes, which eventually transition to typical adult coloration. One of the most recognizable indicators of feral hogs are their tracks. They are similar to deer tracks, but have rounded or bluntnipped hooves. Feral hogs have continuously growing canine teeth, also known as tusks or cutters, which can grow to three inches in older boars. Adult sows and their young stay in family groups known as sounders, and are territorial. Boars are typically solitary and may only interact with sounders to breed.

Feral hogs are extremely prolific, having the potential to rapidly expand their population. Sows can have up to 10 piglets per litter, which reach sexual maturity at 6 months of age. They have a gestation period of 115 days, allowing two litters per year. Feral hogs have virtually no natural predators, so piglet survival is nearly 100 percent.

PROBLEMS

Diseases

Feral hogs are plagued by a multitude of diseases that can affect humans, wildlife or commercial swine operations. Precautions should be taken when field dressing or butchering feral hogs. Wear disposable plastic or rubber gloves, wash hands with soap and hot water when finished, and thoroughly cook all wild hog meat. Some of the most notable diseases carried by feral hogs are:

- **Swine Brucellosis**: The causative agent for swine brucellosis is *Brucellosis suis*, which is transmitted through ingestion of infected tissue and fluids or venereally. Humans can get swine brucellosis by handling infected tissue.
- **Pseudorabies**: Despite its name, pseudorabies, caused by a DNA herpesvirus, is not related to rabies and does not affect humans. It is spread through nose-to-nose or fecal-to-oral contact. Though not always fatal in swine, it is transferable and usually fatal in other mammals.
- **Classical Swine Fever**: Classical swine fever, or hog cholera, is caused by a pestivirus and only affects swine. It is spread by pig-to-pig contact or by ingestion of infected pig meat, and is currently eradicated in the United States.

Some other important diseases found in feral hogs are tularemia, trichinosis, foot and mouth disease, and vesicular stomatitis. If a feral hog that is suspected of being sick or diseased is encountered, please contact the nearest office of the Louisiana Department of Wildlife and Fisheries.

Damage

Some of the most common damage caused by feral hogs is a result of their rooting. Excessive rooting can drastically impact crops, golf courses, levees, hayfields, tree farms and even lawns. Much of this damage occurs after rain events or in irrigated areas during periods of drought. Rooting may lead to erosion, excess soil moisture, and the inability to operate equipment. Excessive rooting can also eliminate the opportunity to cut hay.

Feral hogs are known to prey upon livestock and wildlife. They are known to catch and consume baby goats, lambs and calves, usually leaving no evidence of the attack. If the opportunity is available, feral hogs will consume fawns, rabbits, turkey nests and any other wildlife they encounter.

Feral hogs can be especially damaging to crops and food plots. In addition to consuming the crop, the can trample crops, uproot plants, and disrupt drainage. The same applies to food plots, where feral hogs are attracted to freshly tilled soil with highly palatable plantings. Where feral hogs densities are high, food plots may be completely destroyed within weeks. Feral hogs will directly compete with other wildlife for important resources, especially hard and soft mast.
CONTROL

Control efforts should begin as soon as feral hogs or their activity is observed. Complete eradication may never be achieved, but controlling or reducing the population is crucial. Feral hogs are extremely wary, so a diligent effort is necessary. Control methods include snaring, shooting, hunting with dogs and trapping. At this time, there are no accepted toxicants or repellents for feral hogs.

Snaring

Snaring feral hogs can be effective, but also challenging. Snares are placed on heavily traveled corridors to catch and restrain passing hogs. They should be checked often. A drawback of snaring is the potential for catching non-target species, which should be released immediately. Snares should not be used in areas with black bear populations.

Shooting

Opportunities to shoot feral hogs during legal shooting hours are limited because of their nocturnal behavior. A basic hunting license is required to shoot feral hogs year-round. Feral hogs may only be taken at night on private land under certain conditions. Consult LDWF’s hunting regulations pamphlet for night shooting rules.

Hunting with Dogs

Hunting feral hogs with dogs is a prescribed control method when other efforts have stalled. Unlike other control methods, dogs will routinely catch adult hogs. Though hunting with dogs will remove feral hogs, the benefit from the continuous harassment extends well beyond what is caught. It is important to be properly prepared when hunting with dogs to lessen the possibility of injury to the dogs and hunter. Feral hogs should be humanely euthanized immediately when caught.

Trapping

Trapping is the most effective control method available. The three most commonly used trap designs are box (rectangular), corral and round. Land managers should use multiple traps and be persistent. There are many trap designs available, varying in size, shape and type of door. Common trap door types are guillotine (single catch), hinged or swing (multiple catch). Traps may be purchased from local farm supply stores, the internet or welding and fabrication shops. Trap sites should be pre-baited with whole corn, allowing it to be consumed before placing traps. Diesel or WD-40 may be applied to the trap and bait to deter deer from consuming the bait and to cover human scent.

Michael Perot is an LDWF Wildlife Biologist.
Property Highlight: White Property

Story and Photos by Cody Cedotal

Located in Rapides Parish very near Catahoula Lake, sits a 100-acre property owned by Mr. Horace White and his wife Nancy. The majority of the property exists as an upland pine forest. Mr. White is greatly interested in improving habitat for white-tailed deer on the property. He spends most of his spare time, by his own admission, thinking about deer and ways to improve deer habitat. Prior to my initial visit, Mr. White had already established several permanent openings on the tract to be managed as both winter and summer food plots for deer and other wildlife. These plots have been maintained over the years and, due to Mr. White’s hard work, have become quite reliable in terms of production. In the years since, he has also implemented numerous forest management activities to benefit deer habitat and timber production. Permanent fire lanes were established around the property in 2008. In 2009, with the aid of cost-share assistance, the stand received an initial prescribed burn prior to thinning. The stand was thinned for the first time in June 2010 at age 14. These activities have improved wildlife habitat for deer and growing conditions for residual pine stems, while also generating revenue. Many other improvements have been made on or near the property to improve recreational opportunity. Mr. White has been successful in pursuing additional property to lease adjacent to the property. This has provided additional hunting opportunity and, through recent herbicide treatments, improved deer habitat on the areas surrounding his tract. Mr. White has also developed a camp and other facilities to house equipment on the property. Most recently, he has enacted plans to establish a large recreational fish pond/lake on the tract.

Mr. White has been extremely active in managing his property for wildlife and timber production. Having known Mr. White for a few years now, I would expect this trend to continue well into the future. Below are some photos taken of his 100-acre property in 2006 and more recently in 2010, when the property was recognized as Certified Stewardship Forest #289. Congratulations Mr. Horace White, you have a very nice property and have worked very hard to improve it.

Pine stand prior to thinning in 2006. Very little browse and soft mast vegetation available on the property to deer and other wildlife when the picture was taken.

One of the several food plots established and maintained on the property. Both winter and summer forage plants are grown.

Pine stand shortly after thinning in 2010. Thinning provided increased growing space for residual stem and allowed for increased sunlight to reach the forest floor. Understory vegetation in this area will flourish for the next several years benefiting deer and other wildlife. This area can now be enhanced by prescribed burning on a 2-3 year interval.

New pond/lake after construction in 2010. Will be six to eight acres in size when filled to capacity and is equipped with a well for aeration and supplemental water supply.
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