



Alabama's **TREASURED** Forests

Spring • 1991

STATE FORESTER'S MESSAGE

by C.W. MOODY



Hats off to James Hughes and the other board members of the Alabama TREASURE Forest Landowners Association. Knowing the calibre of people involved, I certainly look forward to great things from these folks! Alabama will be a better place for future generations because they are willing to serve.

The U.S. Forest Service has just completed its periodic survey of the forests in Alabama with some interesting results. Our forestland base in Alabama appears to have remained relatively steady over the past forty years at around 22 million acres. Pine sites have diminished and hardwood sites have increased over this period. We are also growing more hardwood timber than we are cutting. These facts relating to hardwood acres and volumes are contrary to the conventional thinking of many who are concerned about our forests and the environment.

Forest ownerships have remained relatively stable. Forest industry now owns 24 percent of our forestland, government owns 6 percent, non-forest corporations own 7 percent, and private non-industrial landowners own 63 percent.

In summary, while the forestry picture in Alabama is not perfect, it is certainly good—and the outlook is even better! Thanks to TREASURE Forest owners for doing your part!

Sincerely,

A handwritten signature in cursive script that reads "C.W. Moody". The signature is written in black ink and is positioned above the printed name and title.

C.W. Moody
State Forester

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The Alabama Forestry Commission supports the Alabama Forestry Planning Committee's TREASURE Forest program. This magazine is intended to further encourage participation in and acceptance of this program by landowners in the state. Any of the agencies listed above may be contacted for further information about the TREASURE Forest program.

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Cover photo: One of Alabama's eight "Living Witness" trees is a massive white oak in Butler County. This tree lived at the time of the signing of the United States Constitution. Photo by Neil Letson.

Alabama's TREASURED Forests

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IT'S NEVER TOO LATE

by TILDA MIMS, Information Specialist, Tuscaloosa

People often look back over their lives using a “wish” list. They wish they had enjoyed more leisure time, worked harder in school, or accepted an opportunity that may have changed the course of their lives.

When looking back at missed opportunities, it is usually easier to wish than do something about it. Occasionally,

however, a rare individual will choose to make up for lost time by seizing a missed chance with renewed vigor and enthusiasm.

Sim Wright, Jr. is a TREASURE Forest landowner who chose to apply himself full-force to an earlier missed chance for better forest management, and found that it is never too late.

Memorial TREASURE Forest Award in 1989, and last year was the state-wide winner of the Distinguished Conservation Cooperator Award presented by the Soil Conservation Service.

It is important to note that Wright’s TREASURE Forest is not easy or convenient to manage. He owns almost 1,500 acres, and also manages 300 adjoining acres belonging to his children. The elevation of the land varies from 400 feet to 640 feet, with many rugged and steep areas.

According to County Supervisor George Lowrey, the land is so rough that the faint-hearted or easily disappointed would have long ago turned their backs on the responsibility of trying to manage the timber resources of Randolph Mountain.

Early Management

Sim Wright’s father was an attorney in Fayette County, as well as a tree farmer. Wright has lived to see many of the trees he planted as a young man harvested and replanted. He is proud of his family’s early efforts in forest management, but readily admits they took more than they gave back.

In the late 1970s Wright began in earnest to practice active stewardship of his forestland. He says he then made the decision to leave something for his family. Like many TREASURE Forest landowners, he wants to leave the land better than it was.

Site Preparation

Wright began his efforts on the cutting edge of site preparation techniques in 1972 with one of the first aerial applications of the herbicide 2,4,5-T in the area. He was also one of the first landowners in Fayette County to use Tordon, Velpar Gridball, Velpar liquid, Oust, Arsenal and much more.

His various experiments with chemicals were not always successful. With each disappointment he learned but was never discouraged. His belief that prescribed burning and chemical site preparation are the best routes for avoiding soil erosion on rocky slopes proved accurate and has been his practice for many years.



Snags are left as homes for wildlife.

Although he grew up on his Fayette County forestland and farmed and logged there as a young man, he didn’t take an active role in forest management until around 1972. When he made the decision to become a better steward of his land, however, he dedicated himself to the TREASURE Forest ideals and has never faltered.

Sim Wright first heard about the TREASURE Forest program from Fayette County Ranger Jerry Fulmer. “About 10 years ago Jerry was around on my property and liked what I was doing. He told me about the TREASURE Forest program, and asked me if I was interested. I was.”

He was recommended as a TREASURE Forest candidate by the Fayette County Forestry Planning Committee. He was certified as TREASURE Forest landowner #226 in 1983. Wright’s TREASURE Forest was a district winner of the Helene Mosley

Converting to Loblolly Pine

Beginning in the early 1980s, his primary activity was converting Virginia pine and upland hardwood to loblolly pine. He developed a formula that worked, but it required constant supervision and careful control.

He harvested the upland sites in the summer, treated the hardwood stumps with herbicides, followed with a controlled burn in the fall, and then planted with loblolly pine in the winter. He followed with another herbicide spraying in the spring.

Wright addressed the challenge of rough terrain by modifying equipment. He was the first landowner in the area to design a skidder with a spray rig for brush control. He used a small dozer to maintain roads and create water bars. All roads followed the natural contour of the land and were regressed whenever possible to prevent soil erosion.

Today, he follows basically the same management plan, with a few variations depending on the conditions.

At a time when many forest landowners think of reforestation several years after the harvest, if at all, Wright has always planned the reforestation well before the harvest. His management formula has enabled him to successfully reforest one-half of his TREASURE Forest during the past 10 years.

The remaining acres are in wildlife food plots, hardwood sites and mixed pine and hardwood. Wright said there are around 70 acres of nice hardwood that he hasn't touched. "I'm saving the best for last."



This nutting hole was used by American Indians to crack nuts over 800 years ago.

Wildlife Habitat

Although not a frequent hunter, Wright gets immense pleasure from seeing wildlife on his TREASURE Forest. One way he provides habitat for wildlife is to maintain irregularly shaped plantings of different aged trees. He also leaves snags for use by wildlife.

Permanent firebreaks are planted in wildlife food plots and grasses for cover.

In log loading zones, the soil is compacted so hard that the area is usually considered useless. In an effort to maximize the production of his land, Wright uses a subsoiler and farm tractor to loosen the soil for replanting in pines or as a wildlife plot.

Wright has cooperated with the Soil Conservation Service on several experimental vegetation plantings aimed at the goals of wildlife enhancement and soil erosion. He has over 20 food plots planted in bahia, lespedeza, soybeans, chufus, autumn olive and 30.06 clover.

Before the practice was actively endorsed by utility companies, he began planting power line rights-of-way in wildlife food plots. Cantaloupes, okra, watermelons, peas and corn attract deer, turkey and other species to his land, as well as to surrounding farms.

He controls unlawful and unreasonable hunting through a verbal hunting lease with like-minded individuals who value the land.

Preserved Artifact

TREASURE Forest landowners practice good stewardship in all areas of the TREASURE acronym. Wright takes stewardship one step further than most, because he carefully protects and preserves an American Indian artifact estimated to be at least 800 years of age.

The petroglyph (rock carving) features several basins for grinding and smaller "nutting" holes used for cracking nuts. The boulder has a colorful history which includes vandalism and an attempted theft in 1980. Sim Wright and his doberman held seven would-be robbers at bay until the Fayette County sheriff arrived to arrest them.

The men were sentenced and the boulder was returned to roughly its original site.

Carey Oakley, assistant director of the Alabama State Museum of Natural History, commends Wright for his dedication to the preservation of the

petroglyph. "Alabama is rich in American Indian history. Unfortunately, many sites are destroyed each year by looters looking for Indian artifacts. I would like to commend Sim Wright for taking a very active role in preserving and protecting this archeological site."

Education

Sim Wright has always made himself and his property available to interested agencies and landowners. His property has been successfully used for many forestry field days, on-site demonstrations, experimental plantings and for training forest landowners.

He assists the Fayette County AFC office by explaining chemical selection and use to area landowners. He has a wealth of knowledge and firsthand experience in chemical selection, use, cost and availability.

County Supervisor George Lowrey is quick to praise Wright for his assistance to local landowners. "Sim is a true mentor to other forest landowners. Even though he may not receive financial benefit from the consultation, Sim always takes the opportunity to assist other landowners. He is an invaluable educational asset to Fayette County and Alabama," said Lowrey.

The citizens of Fayette County honored the educational contributions of Sim Wright by presenting him the annual Farm-City Forestry Award in 1982. The award is given annually to a landowner who practices good forest management, and is a true steward of the land.

Sim Wright, Jr. accepted the opportunity to manage his forestland with a demanding management plan, modified equipment and, above all else, an unflagging belief that his work is important and will make a positive contribution to the world.

When reflecting back on his beginnings in forest management, he said, "I feel like it is money well spent. Forest management is not always an investment that pays off in money. It's fun. I get a kick out of watching the pine trees grow. It takes some money and it takes some time. I only wish I had started sooner and had followed it through over the years."

Sim Wright is a very special person because he chose to look to the future rather than to the past.

He manages his land with today and tomorrow in mind.

Fayette County and all of Alabama are richer for his decision. ♠

EDITOR'S UNDERSTORY

by TILDA MIMS, Information Specialist, Tuscaloosa

Sim Wright's father was a Fayette County attorney and tree farmer. Sim remembers that his father had the first John Deere tractor in Fayette County, and was active in forest management as early as 1930.

In those years, Wright Sr. sold his timber to Brown Lumber Company. "Back then they didn't clearcut. It was more of a thinning process where they cut every tree of a certain diameter.

The way they logged back then probably helped the land because it opened up the trees and gave them room to grow. They used mules and wagons then, and it didn't damage the land as much," Wright recalls.

Wright remembers his father writing to Weyerhaeuser for information on tree planting.

The Wrights began buying trees from the state nursery in Autaugaville around 1939. "It was real unusual to see people planting trees back then. We used to hire people for \$3 to \$4 a day, and of course my family did a lot of the work," Wright said.

As Wright grew older, he took over the job of logging on his father's land, and worked as a farmer and a tree planter. He later inherited some of his father's forestland and bought the additional land which brings his TREASURE Forest to a total of approximately 1,500 acres.

Sim Wright married Sarah Kate "Katie" in 1947 and they reared two children. Sim Wright III lives in Fayette and is a jailor at the Tuscaloosa County Jail. Their daughter Susan teaches English at Fayette County High School.

Their children enjoy the

land, too. "I feel good about my children keeping up my TREASURE Forest in the future," Wright said.

The Wright's children will also inherit the responsibility for another Alabama treasure, an American Indian petroglyph (rock carving) estimated to be at least 800 years old.

"The first time I saw the rock was in the late 1930s before I went in the service. It was near a gristmill.

Daddy wrote to the University of Alabama about it. They took pictures of it and wrote a story about it that was published," Wright said.

Destruction and theft at archaeological sites is rampant, and Wright's rock was not spared.

"My wife and I were riding around one Sunday morning and decided to ride over to the rock. We came up over a little hill and saw seven men, a truck

and a lowboy at the foot of the hill by the rock.

I took my doberman and my gun out of the truck, and sent my wife to call the sheriff."

When Wright confronted the men they claimed to be coon hunting.

"I told them that wouldn't work because coon season wasn't in. I asked them why they needed a lowboy to coon hunt and they said their truck was stuck. I told them to just stay there until the sheriff came." The men were later convicted and fined.

The thieves had drilled and dynamited under the boulder to dislodge it, and had used chains and a front-end loader to try to lift it onto the lowboy. Fortunately, the damage was not severe, and Wright was able to return it to roughly its original location.

Bart Henson, an avocational archaeologist from the Huntsville area, recalls the incident with this ancient Indian artifact. Henson was involved in photographing and recording the damage wrought by the would-be thieves.

"In my opinion, the basic features on Sim Wright's rock could be 800 to 1,000 years old, possibly older. The large basins were used for grinding corn and other foods. The small, walnut-sized holes were used to crack nuts. There is also a pattern of little holes that could be a carving of a constellation or just small holes that would later be nutting holes.

"Many valuable archaeological sites are ruined each year by looters. Obviously, this stone wouldn't exist without Sim Wright's efforts. I want to express my gratitude for his efforts to preserve it," Henson said.

The future of the Wright's TREASURE Forest is bright. He has years of planting, harvesting and replanting ahead of him, and children who share his love of the land to continue the tradition of stewardship.

When asked about the future of his petroglyph, Wright replied with a twinkle in his eye, "It's going to stay right where it is!" ♣



Katie and Sim Wright

Urban Development and Water Quality

by NEIL LETSON,
Urban Forestry Coordinator,
Alabama Forestry Commission

The past few months have witnessed a growing controversy between Alabama and Georgia over what many see as an unlimited but shared resource—water. Expanding populations and increasing demands for water have forced both sister states to begin looking for ways to cooperatively manage this resource.

The controversy is systematic of a broader issue facing Alabama and the rest of the world. This issue is, How do we accommodate our water resources in a sustained manner to meet the needs of people? It's an issue that will not go away, but probably will remain on the public agenda for years to come.

What complicates this issue, though, is that problems with our water's quality and quantity accelerate as our population and technology increase.

Nowhere is this more apparent than in urban development. Unprecedented urban growth has become typical throughout most parts of the state. By the early 21st century, most of north Alabama, the Gulf Coast, the counties surrounding Birmingham, and the Wiregrass area around Dothan will be highly urbanized. The pressure on water availability and quality will be enormous.

Planners and policy makers will be making some tough development decisions that can make a difference on how much and what kind of water Alabama will have in the future. As cities expand, they begin to envelop areas that are the lifeblood of clean water.

These natural areas are usually converted to housing, commercial or industrial uses. Construction techniques have traditionally operated under the principle of preparing these sites for easy and cost-effective development. Maintaining or keeping the natural order of the site was not a priority unless it contributed to the use or economics of the project. This was acceptable as long as there was an ample supply of natural and agricultural resources. But times have changed.

Agencies and local municipalities are now beginning to monitor the impact of urban development on water quality. One category of water pollution is that caused by a non-point source (NPS). NPSs are those induced by the natural processes or are not traceable to an identifiable facility, and are better controlled using best management practices. The Alabama Department of Environmental Management (ADEM) identified several urban ac-

tivities as NPS pollution concerns in Birmingham, Mobile, Huntsville and Montgomery. ADEM has developed a set of guidelines to control urban NPS pollution. These Best Management Practices (BMPs) are being promoted on the local municipal level. Communities are beginning to adopt erosion control and/or land use ordinances which incorporate these and more detailed BMPs.

Urban Impact on Water

There are three principle urban development activities that can impact water quality: paving, grading and drainage, and construction.

Paving in America is a by-product of our society's one car-one person culture. Unlike other parts of the world, we are able to travel extensive distances to accomplish each daily task. The pressure to provide for our vehicular needs will result in new roads, wider roads and more parking spaces.

The impact of this added layer of impenetrable material is just now beginning to be understood. There are at least two general impacts. One is the reduction of groundwater recharge. Water that would normally percolate through the soil is now redirected along the surface.

This leads to the other impact—surface water runoff. In natural areas (forests), this occurs naturally, but under a somewhat controlled and systematic method that maintains water quality. Water that flows along a paved surface, though, can create thermal pollution and sedimentation problems.

Grading and drainage activities can be serious water quality problems if done without good planning and thought. Bad planning can result in erosion, flooding and pollution of existing natural systems. Since the development process normally creates added runoff, which ultimately influences other communities, then grading and

drainage patterns can not be haphazardly directed.

Construction can be a serious problem to water quality. One concern is the complete removal of natural vegetation from the construction site. This can seriously hamper the local natural drainage pattern. The result is more sedimentation in existing streams. Poorly disposed construction materials on site can result in long term water quality problems.

Reducing Urban Impact on Water Quality

In general terms, there are three things that can be done to blend urban development and water quality. These include retaining the natural integrity of the developed site, duplicating the natural water system and rehabilitating damaged sites.

Retaining the natural integrity of a developed site is an exciting new technique being skillfully used throughout the country. Developers and homebuilders are learning that it not only contributes environmentally, but that people like it better. Retaining vegetation and natural water systems should be done in large units. In other words, an entire stand of trees or an undisturbed stream is better than leaving single trees or a short streamside.

Duplicating natural water systems must be creative and well planned. Some developers have created wetlands, greenbelts, sediment ponds, rock checks, grassed waterways and vegetated berms (bench terraces used to hold storm water runoff on a slope). All of these recreate functions of the natural water system.

Rehabilitating damaged sites involves solving a problem created by earlier development. These are usually costly and site specific. It doesn't mean that the impact has been corrected. Some techniques include waste disposal, rechanneling, artificial erosion control, reconstruction, relocation or abandonment of site.

Minimizing the impact of urban development is a relatively new discipline in Alabama and the nation. Some parts of the country are having to overcome years of unintentional but drastic impacts on water quality.

In Alabama, the state has the potential to maintain its water resource. Much of what can be done regarding urban development can maintain or minimize its effect on our natural water system for generations. ♣



Clean Water and Forest Management

by DON BURDETTE, Environmental Forester, Alabama Forestry Commission

Alabama's forests and wetlands are an outstanding renewable resource for economic, environmental and social benefits that affect every Alabamian in some way. Forests supply landowners with periodic income, communities with jobs, and all of us with wood products, wildlife, recreation, aesthetics, air and water quality protection.

TREASURE Forest embodies the concept of individual landowners having the right to choose and manage their forestlands to achieve their primary management objectives while giving consideration and making some concessions to other important values and contributions that their property makes to the state and nation.

The Water Cycle

Sometimes good soils, air and water are taken for granted. However, our basic natural resources are not unlimited. The capability of the land to maintain the balance between providing sustained goods and services for people and continually renewing or perpetuating its productivity is finite.

Let's consider the natural water cycle as an example of a limited resource. We'll start with the water vapor that accumulates in the atmosphere as clouds. A decrease in temperature causes the moisture to condense out of saturated clouds as precipitation in the form of mist, rain, sleet or snow. Some of the water evaporates back into the atmosphere before reaching the ground. Some evaporates off of the ground or other intercepting surfaces such as vegetation or man-made objects. Moisture on the ground soaks into the soil until it becomes saturated. Water close to the surface is absorbed by plant roots and transpired back into the atmosphere from leaves and stems as water vapor during the process of photosynthesis. Other ground water percolates down to aquifers or reemerges onto the surface as springs and artesian wells. Additional moisture on saturated soil eventually results in runoff into an accumulation system of branches, creeks and rivers and into collective bodies of water such as lakes, seas and oceans. Water evaporates back into the atmosphere

from the surface of these waters as water vapor and the cycle begins again (see **FIGURE 1**).

Alabama's forests and wetlands are an important part of the water cycle because they naturally conserve water. Water from forested watersheds filters slowly through the forest floor and provides effective and high quality surface and groundwater recharge. Some water is soaked up and held in storage by mineral and organic soils until absorbed by plant roots.

People interrupt the water cycle by utilizing water for their own benefit. Much of our well-being in modern human society is related to clean water. We use it to drink, of course, but also for growing food, washing, manufacturing, transportation, power generation, temperature control, waste management, recreation and for aesthetics. Ninety-seven percent of all water usage in Alabama is drawn from surface water and 62 percent of our population's drinking water in Alabama comes from surface water sources. Fresh waters from throughout Alabama eventually recharge marshes, estuaries and other coastal waters of the Gulf of Mexico. The quantity of water on the earth may not actually increase or decrease very much because of human diversion but the volume of water flowing through natural local channels may be altered.

As the world's population grows, the demand for clean water will also increase. Today's average U.S. family uses 255 gallons of water per day. If today's trend of water use continues, more water may also be needed per person to maintain an improving standard of living.

Pollution Affects Water Quality

Man's impact on water quality through human activity is also a matter of great concern to water users, forest landowners and the general public. The more our population grows and the more intensively we use our land and water, the more water we pollute. Municipal and industrial pollutants are difficult and expensive to clean out of waters before it can be reused.

Concentrated emissions of pollution coming from a discreet source such as

discharge pipe or drainage ditch (called *point source* pollution) have been greatly reduced during the past twenty years. *Non-point source* (NPS) pollution that is not easily traced to a specific location or point is, however, a continuing national concern.

Forestry has been assessed by the Alabama Department of Environmental Management (ADEM) as contributing only 8 percent of the non-point source (NPS) water pollution in Alabama (see **FIGURE 2**). Recent monitoring by the Alabama Forestry Commission, however, suggests there is still room for improvement by all classes of forest landowners. While other industries work to develop and implement solutions for their unique problems and opportunities, the forestry community must also continue to do its part to prevent and control NPS pollution of waters of the state of Alabama which originate from silvicultural operations.

Interaction of Silviculture with Water Quality

There are six potential non-point source (NPS) pollutants or detrimental impacts on water quality that can result from forestry operations:

Sediment: This form of pollution can originate when roads and skid trails are poorly located and constructed or when intensive mechanical site preparation is performed with inadequate care. This is the result of valuable topsoil eroding away from upland sites where it is needed down to wetlands and waters where it becomes detrimental. Dislodged soil can silt in creeks and reservoirs thus changing water flow channels. Sediment contaminates water needed for human consumption, aquatic ecosystems and industrial use.

Organics: Organic matter composed of dead and decaying leaves, stems, roots or the lifeless bodies of animals which accumulate naturally through time on the forest floor or in waters of the state provide essential energy and

recycled elements to Alabama's forest ecosystems. However, when logging operations and road construction are poorly executed, an unnatural amount of tree tops and other organic debris deposited into waters of the state can sometimes occur. Additional organic material from disturbed flood zones may also be washed into waters of the state following major rain storms. Unnaturally excessive amounts of organic debris in streams can slow or actually block the flow of water, especially during storm or high flows, possibly resulting in channel course alteration and accelerated streambank erosion. Debris dams can cause further damage to streams if they are washed out by flooding, scouring the streambed and depositing sediment loads further downstream. Decay of excessive organic debris in streams and lakes depletes dissolved oxygen needed by fish and other aquatic animals and plants. This is potentially a greater problem in very slow moving streams or small ponds. Tree tops and other forestry generated organic debris in water can be aesthetically offensive to the public.

Temperature: Sudden removal of tree shade from banks of streams and shores during a timber harvest or by site preparation can quickly raise water temperatures. The potential degree of impact depends on the waterway surface area, volume of flow, channel

gradient, streambed material and the type of aquatic life present. Small streams are more drastically affected than larger rivers. Generally, sudden shade removal can accelerate bacterial activity, organic matter decomposition and aquatic plant growth. Increased water temperatures also promote lower dissolved oxygen levels, placing fish and other aquatic organisms under stress. Complete removal of trees beside previously undisturbed stream-sides may constitute a loss of key wildlife habitat as well as prime scenic and recreational areas.

Trash: The clean integrity of even a disturbed site is tarnished by the open disposal of worn out equipment parts, fuel and lubricants, food and drink containers, pesticide containers and other refuse. New forest roads leading to a trashy abandoned work site can encourage further illegal dumping by unscrupulous people. Openly displayed trash may be carried into waters of the state by storm run off. All trash is increasingly being perceived as irresponsible by the general public.

Pesticides: Pesticides can enter streams, lakes or ground water when they are either misapplied so that they fall directly into the water or when major rainstorms occur quickly after application, thus moving the pesticide off-site into the water. Pesticides are generally considered to be effective and

safe if applied according to label directions. However, improper application may damage or kill off-target plants or animals both on- and off-site. Although correctly applied modern herbicides pose no or low health hazards to man and animals, there are no good excuses for careless contamination of surface or ground waters.

Nutrients: An unnatural increase of mostly nitrogen and phosphorus levels can occur in streams and lakes by runoff, seepage or percolation of these elements from fertilized forest areas. Chemical fertilizers may also get into surface water when they are either applied so that it falls directly into it or when major rain storms occurring quickly after application washes the fertilizers off-target into the water. Increased potassium and other nutrients can also leach (wash out) into waters of the state from ash of wildfires and intense prescribe burns. Excessive nutrients lead to an imbalance in natural life cycles of water bodies.

Best Management Practices

Guidelines are necessary to enable all forest landowners to manage their lands to achieve their personal multiple-use objectives while protecting site productivity, water and air quality for present and future generations.

Best Management Practices (BMPs) are the best known guidelines that can

Take Pride in America Winners Announced

Twenty-six Alabama groups and individuals have been declared winners in the state's 1990 Take Pride in America awards program. Take Pride in America is a national and regional program recognizing individuals and groups demonstrating active involvement for public lands and resources. Each year the Alabama Department of Conservation and Natural Resources sponsors the state-level contest, which awards Alabama TPIA prizes and forwards nominees to the national contest

in Washington, D.C.

The Alabama Forestry Planning Committee is among the prize winners. First prize in the government category was awarded to the Planning Committee for their TREASURE Forest program, which recognizes landowners who practice multiple use forest management on their private land.

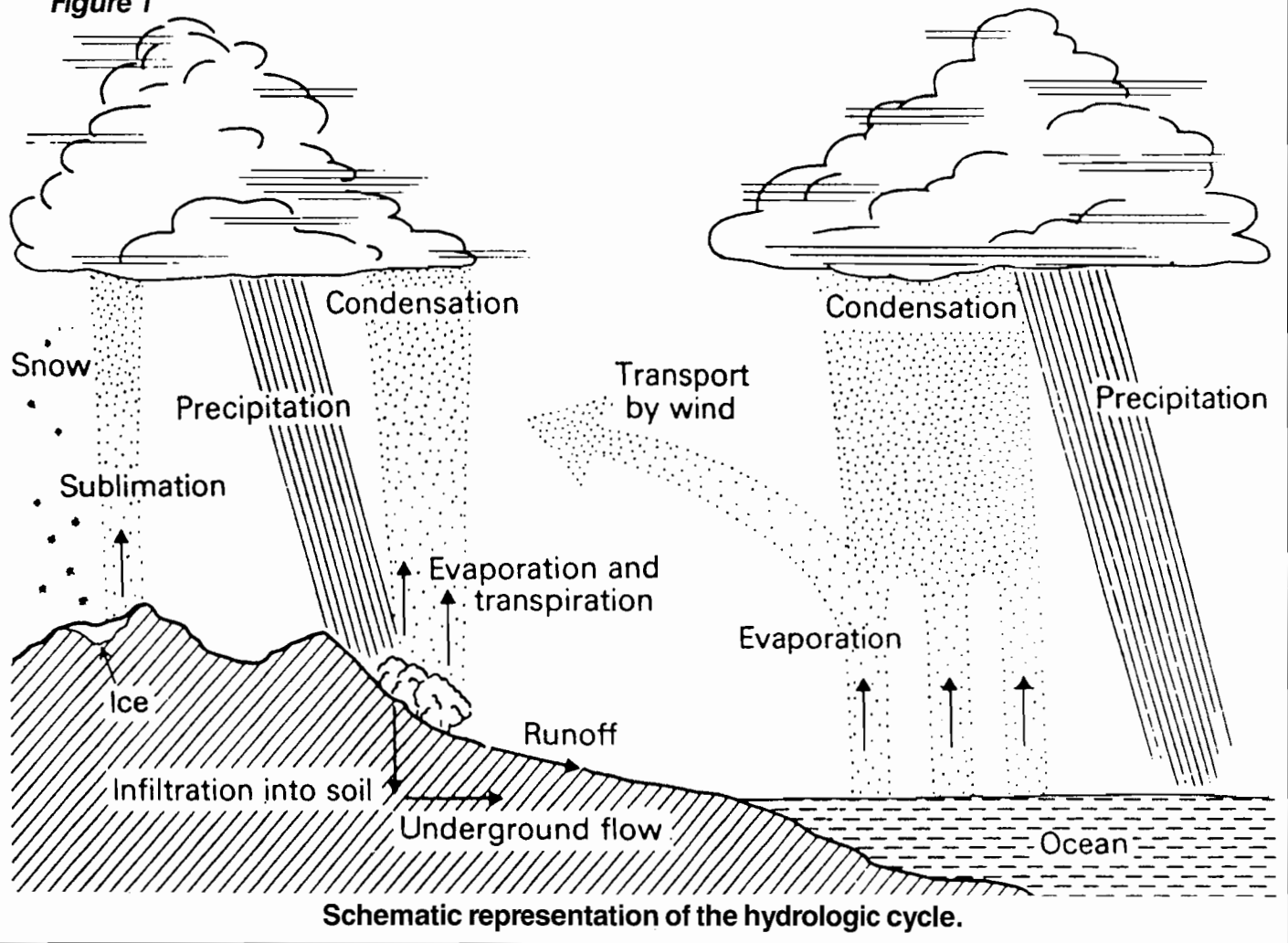
Alabama People Against a Littered State was also a winner, recognized for their first statewide Spring Cleanup and media awareness campaign. In all,

more than 28,000 volunteers picked up litter from 2,200 miles of public roads and 50 illegal dump sites.

PALS has planned a second statewide Spring Cleanup on April 21. If you would like to participate, please call 263-7737.

All 26 winning entries have been forwarded to the national competition in Washington, D.C. Announcement of the national winners is expected in the summer of this year. ♣

Figure 1



Schematic representation of the hydrologic cycle.

be used to achieve resource management objectives in an economically and environmentally sound way.

BMPs are primarily designed to meet state water quality goals and objectives. However, Alabama's Silvicultural BMPs are also basic land stewardship guidelines that will help maintain and enhance land productivity; usable permanent roads, skid trails and log landings; clean and beautiful streams; and diversity of plant and animal species in sensitive areas. Good silviculture with good soil and water conservation in mind is just **the right thing to do.**

Responsibility

When silvicultural operations result in a discharge of pollutants or degradation of water quality, the responsible party is anyone discharging such pollutants into waters of the state. Waters of the state describes any perennial or intermittent surface course or body of water which eventually flows across a boundary. Depending on the cir-

cumstances of a given situation, the responsible parties can include the landowner(s) and/or any professional forestry practitioner(s) such as forest resource managers, timber purchasers, loggers, vendors, forest engineers or others. This responsibility is established in accordance with the Alabama Water Pollution Control Act. Due to this inherent responsibility, it is in the best interests of all those involved in silvicultural operations to make every effort to prevent and decrease violations of water quality statutes and regulations.

Professional forestry practitioners have a very important and prestigious position in carrying out environmentally sound forestry. They should also bear the main responsibility to stay abreast of changes in Silvicultural BMPs, implement appropriate BMPs as found in "Alabama's Silvicultural Best Management Practices," keep their clients and business associates well informed of alternative BMPs and help them select the most effective and

least expensive land, water and air conservation techniques.

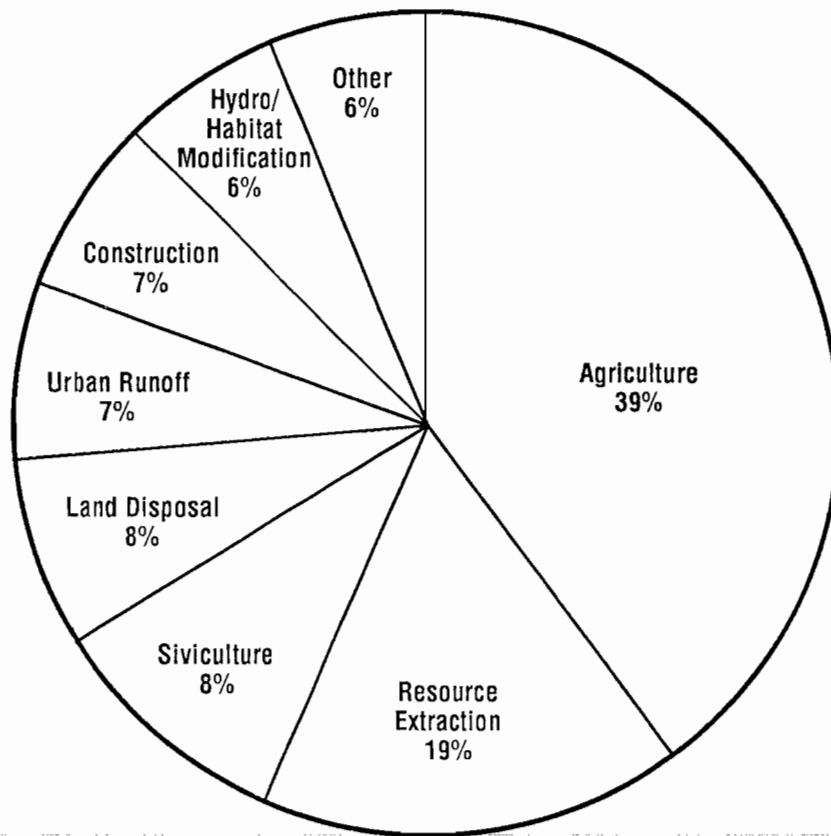
Forest resource managers such as foresters, wildlife biologists, administrators and consultants are the long-range planners. They should stay in touch with changing BMPs; evaluate, pre-plan and specify appropriate BMPs for each site; and monitor and enforce the use of BMPs during forestry operations from beginning to end and beyond.

Timber purchasers are often the first or only contact with inexperienced landowners. They should persuade landowners to consistently comply with BMPs; especially if the landowner is not under the guidance of a consultant forester or agency.

Loggers, vendors and forest engineers get the work done by physically changing the land and forest cover. They should have a long-term commitment to productivity of land, environmental quality and future jobs; should make post treatment inspection of work and correct any problems before

Figure 2

Results of Alabama's 1988 Assessment of Non-Point Source (NPS) Water Pollution*



*ADEM, Alabama Non-Point Source Assessment Report, 1988

leaving the site; and should take note of problems and change techniques to improve expertise and quality of work on similar situations in the future.

Landowners have a tremendous opportunity and responsibility to contribute to good soil, air and water conservation by being good stewards of their forestland as they pursue their individual goals on their personal property. They must be concerned about the environment; be committed to implement and fund appropriate BMP measures before, during and after forestry operations on their property to protect overall environmental quality; be communicative with professionals before, during and after work is begun; and be constant monitors of operational performance.

BMP Implementation

BMP planning should be done before the start of any forestry opera-

tion which has the potential to produce any one or combination of pollutants or detrimental environmental impacts. Good pre-planning should include thorough field reconnaissance, detailed mapping and contractual instructions, an estimate of costs and benefits to utilize BMP techniques and devices, and constant supervision. Preventing environmental problems through pre-planning is much less expensive and more cost effective and practical than restoration after the fact. When in doubt about the appropriate use of BMPs, do not hesitate to contact the Alabama Forestry Commission for assistance.

Numerical guidelines and illustrations are presented in "Alabama's Silvicultural BMPs" to establish basic *minimum* standards. These guidelines allow flexibility to accommodate a wide range of conditions from south to north Alabama. However, it should be understood that they are not intended

to be all-inclusive for every particular situation. Professional forestry practitioners are cautioned that the minimum standards will not release them from the responsibility of taking any and all precautions necessary to prevent and control non-point source pollution of waters of the state that might result from their operations. Extreme and unusual weather can cause reasonable and otherwise adequate application of BMPs to fail to control adverse environmental impacts. Where installed BMPs fail, additional and more effective BMPs must be implemented.

Minimum BMP standards will supplement, not supercede, the forestry practitioner's best judgement of on-the-site circumstances. The person(s) evaluating each site should anticipate short- and long-range potential environmental problems resulting from forestry operations.

With each situation encountered at various sites, there may be more than one correct BMP for reducing or controlling a potential environmental problem. Very site specific BMPs with detailed maps should be included in completed forest management plans/recommendations, timber sale agreements and site preparation contracts.

Conclusion

The continued success of forestry in Alabama will depend on mutual cooperation among landowners, professional forestry practitioners, the forest products industry, government agencies, special interest groups and the general public. All have an interest in good forest management as it relates to water quality.

The practice of sound forestry is crucially important to the people of Alabama, including those not directly involved in the forest resource. Alabama and world populations and demand for goods and services from forestland are increasing. The amount of forestland available to provide for these increases, however, will continue to shrink in direct proportion. We can't create any more soil, air or water. Instead we have to take better care of and make more productive the basic resources that we still have now. Good stewardship of the land in our generation will enable us to maintain and enhance productive, multiple-use, sustained yield forest resources for future generations. ♣

GYPSY MOTH TRAPPING - 1990

by JIM HYLAND, Chief, Forest Health Management, Alabama Forestry Commission

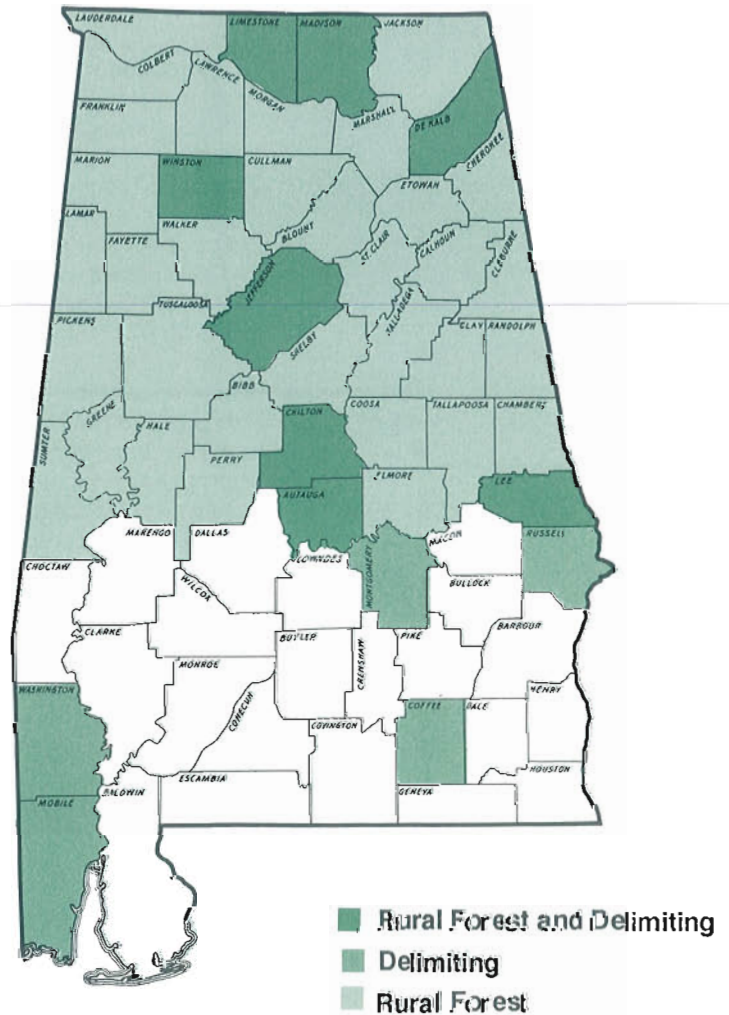
The gypsy moth is one of the most notorious pests of hardwood trees in the Eastern United States. In North-eastern states the gypsy moth has defoliated close to a million or more forested acres each year. The insect has spread south into Virginia and West Virginia. Spot infestations have occurred 40 miles north of the Alabama-Tennessee line.

The Alabama Forestry Commission began a detection survey for the gypsy moth eight years ago. This detection trapping consisted of placing a tent-type trap at four-mile intervals. A sex attractant bait was placed in this sticky trap. If male moths were caught, they were sent in for verification. If it was confirmed that a gypsy moth was caught, a delimiting survey was established in that area the next spring. Rural forestland traps are placed one trap every four miles and delimiting traps placed 16 traps per mile. The trapping is alternated—North Alabama one year and South Alabama the next year. Since we started trapping, a trap has been placed in every mile in the state.

In 1990 the Forestry Commission had a cooperative Gypsy Moth Trapping Project with the Animal Plant Health Inspection service. The Forestry Commission installed and inspected 6,000 Gypsy Moth traps in 46 designated counties (41 Rural Forestland and 13 Delimiting Surveys). The number of positive confirmations of gypsy moths was the largest on record for Alabama.

According to our records, we submitted a total of eight suspect specimens for confirmation. Of those, four were reported negative and four positive for *Lymantria dispar* (L.). In addition, we received copies of confirmation on 28 suspect specimens that were

Alabama Forestry Commission
Gypsy Moth Trapping by County — 1990



reported positive for *Lymantria dispar* (L.) which were submitted by Plant Protection Quarantine (PPQ). Our records indicate a combined (AFC & PPQ) total of 26 confirmed catches totaling 32 moths in 15 separate counties.

In 1991 the Forestry Commission will install traps in the southern part of Alabama and in the delimiting area from 1990. ♣



The Alabama Forestry Commission installed gypsy moth traps in 46 counties in 1990.

Gypsy Moths Trapped in 1990*

County	# Moths Caught
Baldwin	4
Butler	3
Calhoun	1
Conecuh	1
Etowah	3
Jefferson	2
Lauderdale	1
Lee	1
Madison	4
Marion	1
Marshall	3
Mobile	2
Montgomery	1
Pickens	1
Shelby	4
Total	32

*combined Alabama Forestry Commission and Animal Plant Health Inspection Service trapping area.

With the Introduction of the Adopt-A-Stream Program,

PALS Continues Anti-Litter Efforts

by SPENCER RYAN, Executive Vice President, Alabama PALS

Alabama PALS (People Against a Littered State) prides itself on the growth of the organization since its origination in 1986. As a statewide non-profit organization, PALS is the fastest growing anti-litter organization in Alabama, and will continue to affect Alabama communities in the future.

Since the establishment of the first three chapters—St. Clair, Colbert, and Talladega Counties—the chapter growth has been phenomenal, with nine in 1988 and 19 in 1989, for a total of 37 chapters to date. It is the goal of Alabama PALS to have county chapters in all 67 counties. These chapters are represented by concerned citizens, businesses and industries, civic groups, state agencies, and other interested parties. The chapters meet periodically to determine ways to overcome the litter, solid waste and illegal dumping problems in their respective communities.

The chapters implement programs addressing litter education curriculum in the school systems, establish ongoing recycling programs, work with law enforcement officers to ensure that the litter laws are being enforced, construct local litter ordinances, and develop cleanup events for their respective locations.

In November 1989 Alabama PALS kicked off the "Don't Drop It On Alabama" Cleanup Campaign. The campaign has created litter awareness through a series of PSA's, billboards, bumper stickers, and other public awareness vehicles.

In April 1990, in conjunction with the "Don't Drop It On Alabama" Cleanup Campaign, Alabama PALS

sponsored the largest one-day statewide cleanup event in Alabama's history. This included 34 participating counties and will be an annual event. This year our "Don't Drop It On Alabama" Cleanup Campaign will be held on April 20, 1991, and the momentum is growing as we coordinate with the cleanup committee to make this event the largest in the country.

PALS also has an annual awards program which is held in November of each year. The Helen Hunt Anti-Litter Awards are presented to businesses, municipalities, volunteers, law enforce-

Forest Farmer Manual Available

The 28th edition of *Forest Farmer Manual* is now available. The manual, published every other year by the Forest Farmers Association, includes directories of interest to tree growers, including lists of all southern state foresters, extension forestry departments, forestry schools, possible timber markets and consulting foresters.

Articles in the 1991 manual include information about the latest forest management advances, tax issues, timber markets and federal laws that affect timber growers.

Copies of the manual are available for \$20 each, plus \$3 postage and handling. To obtain a copy, contact the Forest Farmers Association, Box 95385, Atlanta, GA 30347-0385; (404) 325-2594. ♣

ment officials, media promoters, etc., who have made the largest contributions toward eliminating litter in Alabama.

In 1990, Alabama PALS took over the promotion of the growing Alabama Adopt-A-Mile Program. The program now represents over 3,000 miles of adopted federal, state, and county highways. The program has grown into one that is looked upon as one of the most successful in the country.

Alabama PALS is proud to announce the availability of a new and exciting pilot program—Adopt-A-Stream. This is a joint venture of PALS, the Alabama Forestry Commission, and the Alabama Department of Environmental Management (ADEM). PALS has committed to finding adop-

tive sponsors for eight to 10 stream crossings for this year. PALS chapters will be able to take the project as a chapter project or contract with civic groups, school clubs, churches, scout groups, etc.

The Adopt-A-Stream Program will work very similar to the Adopt-A-Mile Program. PALS will provide Adopt-A-Stream signs with the sponsor's name on them, sign poles, vests, bags, tools, and other needed items. The crossing should for the most part be visible from a road or highway. The crossing will need to be picked up on at least a monthly basis, if not more frequently. There will be reporting forms that will include the number of workers, date cleaned, number of bags of trash, and contents of trash. These forms will be

sent by the sponsor to the PALS state office for filing for ADEM reports. An awards program for Adopt-A-Stream participants and sponsors. The awards program will probably be tied in with the annual Helen Hunt Anti-Litter Awards Program.

The motto for Alabama PALS is "Working Together We Can Make A Difference," and that is being proven all over the state of Alabama.

If your group is interested in adopting a stream, fill out and mail the form below. For more information on how your group, business, club or family can become partners in the Adopt-A-Stream Program, call Alabama PALS at 263-7737. ♣

Application for Adopt-A-Stream Program

Name of Participating Group _____

Affiliation _____

Address _____

City, State, Zip _____

Phone Number _____

Contact Person _____

Location of Proposed Stream Crossing _____

Other Information on Crossing _____

County _____

Location of Adopt-A-Stream Signs (Highway #, etc.) _____

I understand that this is a volunteer program and therefore pledge the time and efforts of the aforementioned group to working on a volunteer basis with the Adopt-A-Stream Program for a period of two years. It is also understood that the aforementioned group will be given the option of continuing in the program after the two-year period.

I understand that this is a volunteer program and therefore will not hold Alabama PALS, the Alabama Forestry Commission, or the Alabama Department of Environmental Management liable for accidents or other related incidents.

Signed _____ Phone _____

Contact Person for Adopting Group

Date _____

Return to: Alabama PALS, 410 North Hull Street, Montgomery, AL 36104



Despite a continuing gloomy federal budget picture, and more and more states facing budget crises, the outlook for private forestry in the southeast could not be brighter. The president, Congress and general public are increasingly recognizing the important role that private forests fulfill and will play as a future provider of multiple resources for the nation. Likewise, forest landowners are themselves realizing and enjoying the many different values and benefits their forests have to offer.

President Bush reaffirmed his commitment and support of the nation's forest resources by making the largest budget recommendations ever made by an administration for the U.S. Forest Service's State and Private Forestry programs. Congress authored a number of new programs which were included in the Forestry Title of the 1990 Farm Bill. Many organizations are beginning to identify common needs and benefits and are building coalitions to support and implement these programs.

Stewardship Incentives Program

The President's budget, submitted to Congress on Feb. 4, requested over \$200 million dollars to fund major programs that assist private landowners in the protection and management of their forestlands—an 18 percent increase. These increases principally support the delivery of the president's America the Beautiful program, which was proposed last year and is currently in the early stages of implementation. America the Beautiful's goal is to plant and manage one billion trees a year throughout the nation's rural areas and communities over the next 10 years.

America the Beautiful will be delivered through the Forest Stewardship Program, Stewardship Incentives Program (SIP) and Urban and Community Forest Program—programs authorized in the Forestry Title of the 1990 Farm Bill.

The president proposes funding the Forest Stewardship Program (FSP) at

\$20 million. The goal of this program is to bring 25 million acres of private forestland under stewardship management plans over the next five years. Landowners throughout the nation will have the opportunity to consult with professional resource specialists about how and for what purposes they will manage their forestlands. This national program is modeled after Alabama's own TREASURE Forest program.

Landowners with approved stewardship plans will be eligible for a new cost-share program—the Stewardship Incentives Program (SIP)—administered jointly by state forestry agencies and the U.S. Forest Service. This program was proposed and funded by Congress last year at \$20 million. The President has requested \$90 million for the coming year, foreseeing SIP as the major program to deliver the goals of America the Beautiful.

Cost-share assistance will be available for a range of practices that include timber production, fish and wildlife habitat management, and soil and water conservation practices. Broad guidelines and rules were developed at the national level in January and February of this year and it is hoped that landowners can begin signing up for SIP in April. States, through State Stewardship Coordinating Committees, will have opportunities to target specific practices as priority activities within their states.

Other Cost-share Programs

Cost-share assistance has also been traditionally available for forestry practices through the Forestry Incentives Program (FIP) and the Agricultural Incentives Program (ACP). The President has requested continuing levels for both these programs.

The 10th Conservation Reserve Program (CRP) sign-up—the first in almost a year and a half—was held March 3-15. Over 32 million acres have been enrolled through the 9th sign-up; approximately 2 million of

those acres have been planted in trees. The administration expects an additional 6 million acres to be enrolled between now and 1995. Since the enactment of the 1990 Farm Bill, additional incentives have been provided to increase the number of acres planted to hardwoods and windbreaks.

Landowners will also be able to enroll farmed or converted wetlands in the newly established Wetlands Reserve Program (WRP) in exchange for long-term or permanent easements. The Administration's proposal for this program includes \$124.4 million to enroll 150,000 acres in a later 1992 sign-up period. Congress has targeted 1 million acres for enrollment in the WRP by 1995.

Urban and Community Forestry, another part of America the Beautiful, provides \$21 million in technical and financial assistance in fiscal year 1991—a \$17 million increase from the base program. The President proposes over \$32 million in FY 1991. Portions of this funding are expected to be available to cities and towns of all sizes as grants for planting and maintaining community trees. Additionally, a separate foundation received a one-time grant of \$20 million last year to use as seed money for fund raising in the private sector to operate a tree planting and public education program.

A new program, funded through the U.S. Small Business Administration, received \$15 million in FY 1991 to plant trees on state and local government lands. It is expected that in most instances the state forestry agencies will manage this program. Although the Administration proposed no funding for this program for either fiscal year 1991 or 1992, there is considerable support by senior members of Congress for this program and it could be funded for up to \$30 million this year before the budget is finished.



MNERS

Programs Seek Funding

The outlook for fire protection and pest management on private lands is not as optimistic in the president's budget. Presidential administrations have considered these areas to be responsibilities of the states; however, Congress has traditionally provided funds to keep these programs at continuing levels.

A major effort is underway by the National Association of State Foresters to fund the Fire Mobilization Act of 1990, authorized at \$70 million in the 1990 Farm Bill. Congressman **Claude Harris** (D-AL) and Senator **Howell**

Heflin (D-AL) were chief sponsors of this program. Appropriated funds would be divided on a 50-50 basis between volunteer fire departments and state forestry agencies to enhance training and equipment needs. Since authorization rarely ensures appropriations or administration support, funding for this program will depend critically on Washington hearing broad local support early in the year. As a senior member of the House Appropriations Subcommittee that oversees this program, Alabama Congressman **Tom Bevill** is in a key position to support this program.

Finally, President Bush once again called for a capital gains tax cut in his State of the Union address on January 29. This year, however, in what is viewed as an attempt to avoid another round of partisan battles, he announced that a "blue ribbon" panel would be formed to study whether or not a reduction in the capital gains rate would be a worthwhile revenue raiser or simply a gift to the wealthy.

For more information about any of these programs contact the Alabama Forestry Commission. Members of Congress need to hear continuing public support for these programs as well. ♣

STATE

by FRANK SEGO, Legislative Liaison, Alabama Forestry Commission

What's in store for the 1991 Alabama Legislature?

Education?

Tax reform?

The environment?

The well-worn abortion issue?

Redistricting?

Let's stop right there and consider the latter. When the 1991 legislature met in its organizational session in mid-January, the House chose the Baron of Barbour, Rep. **Jimmy Clark** (D-Eufaula), to wield its gavel for another four years. Likewise, the Senate re-elected Tuscaloosa's affable senator, **Ryan deGraffenried**, as its Pro-Tem.

Speaker Clark then appointed 10 House members to a reapportionment committee, along with 10 senators selected by Lt. Governor **Jim Folsom, Jr.** The 20-member committee is mandated to draft a bill that would redraw district lines for Congress as well as the 35 State Senate seats and the 105 Alabama House seats.

The re-draft will be based on Census Bureau figures that reveal the population shift that occurred between 1980 and 1990. Census Bureau officials, however, could revise their count and distribute new figures on July 15th of this year.

Bureau guidelines state that the current seven Congressional Districts need to have approximately the same num-

ber of people within about one percent, which equates to about 580,000 people in each district. Where state lawmakers must be careful, according to Census Bureau officials, is that they avoid the drawing of odd-shaped districts to include, or exclude, some residents for obvious political reasons.

It is possible that the legislature could take steps to alter the plan during the April 16-July 23 Regular Session. Such legislation would necessarily have to be approved by both houses and signed by the governor before getting a final look by the United States Justice Department.

New District Likely

Such inspection by the Justice Department would be taken to insure it doesn't dilute black voting strength. Speculation is that a new district could be carved out of the present 6th District, which includes the Jefferson County area represented by Congressman **Ben Erdreich** (D-Birmingham), and the current 7th District of Congressman **Claude Harris** (D-Tuscaloosa), which embraces Tuscaloosa and Bessemer.

Members of the reapportionment committee feel that this would force a new black district. Creation of such a district could mean that either Rep. Erdreich or Rep. Harris might forfeit a

seat in the 1992 election. One of them could possibly lose because figures show that Alabama's population rose less than five percent during the last 10 years, a rate of growth that has been bitterly disputed in many political circles. If true, the slight increase would not be sufficient to authorize an eighth Alabama congressman.

State Rep. **Jack Venable** (D-Tallassee) served as co-chairman of the now defunct Joint Senate-House Task Force on Reapportionment. Early on he predicted "that if we don't draw at least one black Congressional District we won't get past the scrutiny of the Justice Department and, even if we did, there's no way we can escape a challenge in federal court."

Only time, the 1991 legislature and the Justice Department will tell.

Markets for Wood Products

In his inaugural address on January 14th, Governor **Guy Hunt** again declared that Alabama is "Open For Business!" He renewed his pledge of 1987, stressing that he would work hard to restore hope to the family farmer and small landowner, and strive to develop more overseas markets for their products. *(Continued on page 18)*



We listened closely as he spoke: "Together we have opened up foreign markets with historic agreements to export Alabama beef and wood products to the Far East. Someday, perhaps Japanese shoppers will be complaining that there are too many items in their stores marked 'Made in Alabama.'"

Forestry Commission Chairman **Claude Swift** and State Forester **Bill Moody** have accompanied the governor's economic task force on separate visits to some of these foreign markets with an eye on trade for Alabama's forest products.

So impressed with Governor Hunt's job of promoting Alabama for business interests were the editors of *Forbes* magazine, that they invited him to their offices in New York during the winter to learn more about the state and to "pick his brain" on what he is doing to create so much enthusiasm about doing business in Alabama.

New Senate Structure

During its January organizational session, the Alabama Senate voted to increase its number of leadership positions. Rules were adopted to allow nearly every senator to chair a committee.

Among the changes in committee structure is a three-way split in the leadership of the Rules Committee. The committee will now have a chairman, vice chairman and a deputy chairman. Senator **Jim Preuitt** (D-Taladega) will chair the committee.

Bedsole Back As Chairman

On the subject of Senate Committees, all of us in the forestry sector are most pleased that Senator **Ann Bedsole** (R-Mobile) has again been selected to head the Committee on Agriculture, Conservation and Forestry—the committee most vital to forestry in the Senate. Certainly, Senator Bedsole has distinguished herself as a champion for forestry in this state.

Rep. **Richard Lindsey** (D-Centre) will serve as chairman of the House Committee on Agriculture, Forestry and Natural Resources.

This column in the next issue of *Alabama's TREASURED Forests* will focus on the status of legislation affecting forestry, as the session will be underway soon after our magazine goes to press.

Till then.... ♣



Hidden TREASURES



A TREASURE Forest— For Love and for Money

by Dr. SAMUEL EICHOLD, TREASURE Forest Landowner

The author and his family own a 640-acre TREASURE Forest in Escambia County called Sturdy Oak Farm. Working with several different agencies, they have taken worn out cropland and unmanaged forestland and turned it into an excellent example of stewardship.

The delight of owning a beautiful tract of land is only exceeded by the pleasure of just walking through the woods. Recognizing that life is not permanent, one may formulate plans that call for passing tracts of land to future generations. How easy it becomes for land to be divided and so broken into small parcels that its beauty is minimized and the land value is degraded. Often, landowners do not understand how to implement a plan which will call for retaining the land within their family.

Our TREASURE Forest is a source of joy for three living generations. What can one hope to accomplish by long-range planning? There are current needs that must be met—thinning trees, elimination of unwanted undergrowth, erosion control and biannual controlled burning. These are functions of land management. They should not be foreign to any landowners. The laying out of game plots, preservation of wildflowers and their enhancement, as well as cultivation of fish and game—it all becomes part of the dream of a TREASURE Forest owner.

With our family, a long-term ownership plan was developed. Acreage and mineral rights have been placed in a family company. Parents and three children share as equal partners.

Grandchildren can better appreciate Sturdy Oak Farm as being part of their very own, and it seems to make a difference. Their pleasures can be enhanced while they learn how to drive a tractor, operate a bush-hog or disk and drag those plots being readied for planting. Any 12-year-old will readily accept the privilege of driving the jeep, to

be sure! Where better can a child learn to drive than on an enclosed tract of land?

The concern for fauna, flora and wildlife become a reality when the stewardship includes several generations working toward the same goals. Returning small fish to the pond seems a happier experience when the child recognizes it can grow and there remains an opportunity for it to be caught at a later date in their very own pond. The freshly cut pasture becomes more than just a hay field when it serves as a place to fly kites.

Elimination of scrub trees can be fun for one with a gun that shoots poison at the roots of unwanted brush. Clearing firelanes becomes less burdensome when it encompasses the privilege of operating a tractor. We eat honey with breakfast and can appreciate that the bees serve as an added means of increasing crop yield by providing pollination while making honey. How better can our youth learn lessons for an appreciation of the balances that are necessary in sustaining life?

The clean water in our streams is a benefit of preserving trees along the banks. We can relate to the fact that life is in essence a balance of food, water and shelter for all God's creatures. The love of the land is a rather primitive human trait, but its preservation and enhancement is a learning experience. It will come so naturally in a TREASURE Forest.

A TREASURE Forest can be an ongoing process throughout several generations if it is appropriately developed from the standpoints of ownership, management and family involvement. There is a finite point for which we all must plan. We can include the law of averages for life expectancy and at the same time we can seek the means to let that help make the forest grow. ♣

Pine Trees, Quail and Bluebirds

by JOHN TYSON, Alabama Forestry Commission, Dadeville, and
CLAUDE FRIDAY, Soil Conservation Service

C.B. Munroe manages 287 acres near Lincoln, Ala. that have been in his family for three generations. One hundred fifteen acres are forested—about 35 acres in natural stands, and the rest in nine-year-old plantations.

C.B.'s primary interests are commercial timber, quail, and bluebirds. His



C.W. Monroe and Bill Browning, ASCS

management program also makes provisions for other species of wildlife and for environmental enhancement. He and his family often use the tract for hunting and nature study.

When Munroe took over the place, the forested land was all a natural stand of mixed species that contained a large amount of shortleaf pine. The problem was that he had littleleaf disease on the tract. He tried to upgrade the stand at first by harvesting the diseased trees and leaving the healthy ones to re-seed

the area. However, more diseased trees appeared every time the stand was cleared. He finally decided to convert to loblolly pines, which have little susceptibility to littleleaf disease.

Eighty acres were site prepared and planted nine years ago. Fire prevention has always been one of Munroe's chief concerns, as he lives in a very fire-prone area. He solved the problem by constructing an extensive system of permanent firebreaks and by prescribed burning. The firebreaks are all planted in grass and he prevents fuel from building up on them by grazing and mowing.

He follows a policy of regularly burning for hazard reduction. The Alabama Forestry Commission used his land for a prescribe burning demonstration in 1987.

C.B. planted 50 pounds of partridge pea seed last year on logging roads and natural openings in his forested land. He also maintains a rough area along some of his pasture fences and has several plots of *Lespedeza bicolor* to benefit quails on the tract.

He is also interested in other birds. He has 17 bluebird houses on fence posts in his pastures, and four wood duck boxes along the creek. He says during any summer most of them will be in use.

C.B. Munroe is a retired postman. He is active in both the Talladega County Chapter of ALFA and the Talladega County Cattleman's Association. He is chairman of the Talladega County Forestry Planning Committee. ♣



Prescribed burning demonstration at the Monroe farm. L-R: J.C. McCollum, Talladega County landowner; C.B. Munroe; Herbert Simms, ALFA state forestry committeeman; and Skip Turner, Alabama Forestry Commission.

Calendar

April 16—Save the Butterfly Day in Alabama.

April 17-19—Athens, GA. Natural Regeneration of Southern Pine, a Univ. of GA short course. Contact the GA Center for Continuing Education, (404) 542-1585.

April 20—Spring Clean-up Day in Alabama. For more information contact Alabama People Against a Littered State, 263-7737.

April 23—Elmore County TREASURE Forest Landowner Association meeting with a program on wildlife. Call Lynn Justiss, 567-5486.

May 4—Callaway Gardens, Pine Mountain, GA. Lake and Timber Management Workshop; 10 a.m.-4 p.m.; fee \$25. Call (404) 663-5153.

May 8—Callaway Gardens, Pine Mountain, GA. Butterfly Gardening Workshop; 10 a.m.-3 p.m.; fee \$15. Call (404) 663-5153.

May 9-10—Auburn, AL. Seventh Alabama Urban Forestry Association Convention, Auburn Convention Center. Contact Neil Letson, 240-9360.

May 15-17—Jacksonville, FL. Forest Farmers Association's 50th Anniversary Meeting. For information call (404) 325-2954.

June 20-22—Missoula, MT. National Forest History and Interpretation, a symposium/workshop. This program will focus on the historical origins and significance of the National Forest System and the techniques of interpreting its rich history. Contact the Center for Continuing Education, Univ. of Montana, (406) 243-4623.

Oct. 10-11—Eufaula, AL. Eighth Alabama Landowner and TREASURE Forest Conference, Lakepoint State Resort. For more information call 240-9364. ♣

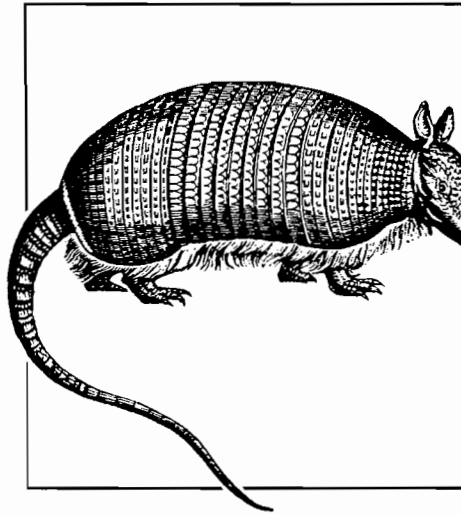
THE NINE-BANDED ARMADILLO

by STANLEY D. STEWART, Alabama Department of Conservation Natural Resources

The nine-banded armadillo (*Dasyus novemcinctus mexicanus*) is a native of South America and Mexico which has multiplied rapidly and expanded its range into the Southern United States. Around the beginning of the century this species' presence in the U.S. was limited to the semiarid regions of south Texas. Since then considerable range expansion has occurred as a result of human introduction. By the 1970s, armadillo populations were found as far east as the Florida panhandle, southern Alabama and southern Georgia. Since that time populations have continued to increase and migrate northward. Northward range expansion, however, is limited by climate. Armadillos cannot tolerate extended periods of cold weather. In Alabama armadillos are found throughout the southern half of the state.

Armadillos belong to the most primitive mammal group of the New World, the order Xenarthra, which includes armadillos, sloths and anteaters. These species are characterized by extra vertebral elements called xenarthrales, which function to support the hips. Such reinforced vertebrae are found in no other modern mammals and assist armadillos in digging for food. Armadillos are also characterized by primitive cylinder-shaped teeth which lack an enamel covering and grow continuously. Since the teeth have no protective enamel, they quickly wear down from feeding.

The name armadillo is derived from the Spanish word for armor. These animals possess a distinctive armor covering composed of bony plates of skin. Partially encircling the body (with the exception of the belly) is a series of eight to 11 (usually nine) girdle-like bands of armor separated by loose folds of skin which allow flexibility. Bony plates also cover the head, shoulders, pelvis and tail. The



shoulder and pelvic armor is greatly arched, giving the armadillo a hump-backed appearance.

Fore feet and hind feet of armadillos bear heavy claws well adapted to digging. Normally, four toes occur on each front foot and five toes on each rear foot. The two middle claws of each front foot and the middle claw of each rear foot are the longest. Its odd-shaped track is unmistakable.

The most extensively developed parts of the armadillo's brain are the olfactory portions which control its sense of smell. Armadillos can often be seen sniffing the air, presumably sensing food in the ground. They are able to detect insects almost a foot deep in the soil, an indication of their extremely sharp sense of smell.

It has been discovered that armadillos require considerably less oxygen than other animals of similar size. Even during the exertion of digging, an armadillo can hold its breath six minutes, decreasing the chance of dust entering its lungs. Its circulatory system contains a thick network of finely branched vessels which allow it to efficiently utilize oxygen. But, as a result, temperature regulation is difficult. To some extent body tempera-

ture is dependent upon air temperature. For this reason armadillos cannot survive in cold climates, and populations decline in regions experiencing severe winters.

Armadillos feed primarily on invertebrates living in the soil, leaf litter and rotting wood. Larval and adult beetles are an important food item. Armadillos also feed on ants, termites, centipedes, crickets, grasshoppers, spiders, snails, and earthworms. They occasionally eat reptiles and amphibians and sometimes consume plants—primarily fruits. Since armadillos feed in the soil, their stomachs often contain large amounts of soil and plant debris.

Armadillos excavate burrows which are used for sleeping and denning. Burrows may be up to ten feet long with a widened living area at one end. There are often multiple entrances. The living area is lined with leaves and grass, and the nesting material is changed periodically.

Mating usually occurs in July. Young are born in March after a delayed embryo development. Armadillos usually give birth to four young. The quadruplets develop from a single egg and will therefore all be of the same sex. Young armadillos are nursed for several weeks and fully weaned by age three months. Sexual maturity is complete by age two. Most one- and two-year-olds are smaller than adults, which attain full growth between three and four years of age. The life span of armadillos is unknown.

Because armadillos consume many destructive insects, their presence can be beneficial. Damage complaints occur mainly from its digging for insects in gardens, lawns and flower beds. Armadillos are hunted for food and sport throughout their range. Effects of armadillos on ecosystems as their range expands is not well documented, although they are generally considered to be non-detrimental. ♣

Alabama Cooperative Extension Service

by DR. ANN THOMPSON, Alabama Cooperative Extension Director

Editor's note: This is the fourth in a series of articles highlighting the agencies that comprise the Alabama Forestry Planning Committee.

The Alabama Cooperative Extension Service (ACES) is serious about keeping you informed on what we're doing and why. This summary highlights some current programs in agriculture, forestry and natural resources.

Business Management

As farm and ag-related businesses become more complex and profit margins shrink, Extension programs—such as enterprise budgeting—continue to focus on helping clients make financial decisions.

Farm analysis associations which provide one-to-one financial management, are available to commercial farmers in 35 Alabama counties.

Responding to Environmental Issues

Alabama agriculture continues to cope with responses to ag-related environmental issues. Problems associated with water quality are growing more intense as concern increases about contamination from pesticides and fertilizers, livestock and poultry wastes, and sewage disposal.

A comprehensive water quality plan is in place. An Extension water quality scientist provides leadership in carrying out the plan. Extension specialists and agents are intensifying on-going education in animal waste management and efficient and safe use of pesticides.

Specialists and county agents are leading pilot programs in recycling paper mill boiler ash and poultry litter as soil amendments.

Serving Major Farm Enterprises

Concerted efforts continue to broaden the range of programs for producers of Alabama's major farm enterprises.

Updated, research-based production and marketing information is on-going in livestock, poultry, cotton, corn, soybeans, peanuts, pecans, and other commodities. New consumer demands in nutrition, health and convenience are met as more programs emphasize production and marketing. Farmers, processors and consumers are targets of new programs on food safety, a current major concern in Alabama and the nation.

Extension poultry scientists work with Alabama's 17 broiler complexes. They provide technical help and education in production, disease control, quality assurance, management, nutrition and processing.

Forestry

A major target of Extension education is Alabama's 400,000 non-industrial private forest landowners who own 63 percent of the state's 21.9 million acres of commercial forestland.

To meet educational needs for landowners and the industry as a whole, ACES has strengthened its educational support system. Extension forestry specialists provide help and education in wood products, forest regeneration, timber harvesting and value-added processing.

The Forest Products Development Center on the Auburn University campus provides technical backup to firms and agencies in forest products development.

New Income Opportunities

Demand grows for income supplements or alternatives to traditional crops and livestock.

Catfish production and processing, centered in west Alabama, is spreading to other parts of the state. Through TVA funding, an Extension catfish specialist headquartered in Decatur provides educational programs in North Alabama. An additional Extension specialist in the Department of Fisheries at Auburn University provides more research-based educational support to county agents and staff at the Alabama Fish Farming Center at Greensboro.

Extension programs are responding to the issues and demands of a growing horticultural society, including nursery and greenhouse operations and on-farm commercial and home fruit and vegetable production.

A growing number of landowners are looking to fee hunting as an income source. Workshops and education materials focus on deer, turkey and quail management and marketing strategies.

New Technologies

The use of electronic technology in Extension programs continues to gain

momentum. The ACES has more than 750 microcomputers in the state, district and county offices. They are connected with Extension's campus-based communications and information delivery system, ACENET. The two-year-old system provides rapid access to campus resource bases, including ag weather and market-price data bases.

Use of the AU Satellite Uplink for more efficient and cost-effective program delivery will move forward this year. Downlink facilities are in place in all county Extension offices.

Computer-based management programs for the state's beef and dairy industries are being expanded and refined. FINPACK, a computerized package for counseling farm families on financial management, continues to have widespread use by county agents. New computer software is being developed for vegetable marketing, livestock and poultry nutrition and crop pest management.

4-H/Youth

Ag-related projects and activities continue to be important areas of 4-H/Youth work. Interest is growing in science, technology and natural resources, with an environmental focus on conservation and water quality.

Strengthening the Ag Support System

Other ACES programs strengthen the state's agriculture directly and indirectly.

In the area of rural revitalization, ACES focuses on economic development. This includes creating jobs (filled in many cases by members of farm families seeking off-farm income) and markets for farm products.

A broad range of programs in nutrition, health, parenting and leadership development is provided to Alabama's citizens and communities. Other programs provide technical help to home-based businesses as income supplements for families.

We invite you to seek information on how you might take advantage of these and other programs offered by ACES. Visit your local Extension office—your gateway to the resources of Auburn University. ♣

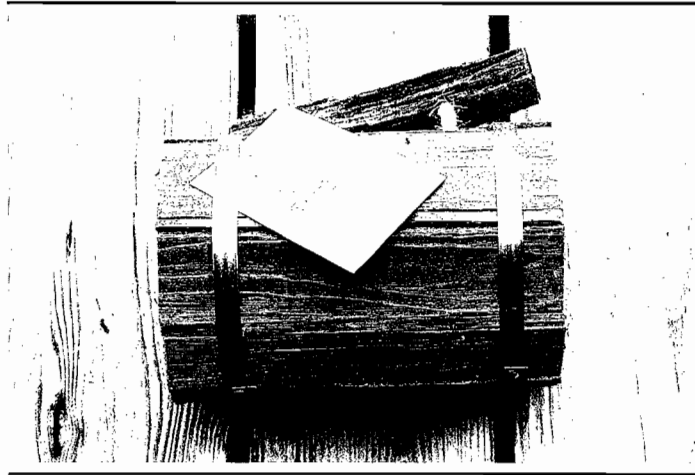
Unusual Alabama Forest Products— A STATE OF SURPRISES!

by GARY M. FAULKNER, Alabama Development Office

Alabama has a huge forest products industry with well over 1,200 manufacturing operations located in the state. These manufacturers produce many traditional wood products of all description, from flooring, lumber, furniture and poles, to pulp and paper products such as containers, paper towels, toilet paper, and many others. In the Southeastern United States there are more than 949 types of forest products produced. In Alabama there are approximately 229 forest products manufactured. However, among these products there is a small group which stirs particular fancy and interest. These are Alabama's unusual and unique forest products! This article attempts to describe and uncover a few of these items for the discovery and fascination of *Alabama's TREASURED Forests'* readers.

In Covington County, the Covington Casket Co. is nestled among the large pine thickets of south Alabama. **Caskets** are being manufactured using southern yellow pine and some poplar. Wood is utilized because of its lower price. The company's caskets have a market radius of approximately 300 miles with Florida, Alabama, Mississippi and Louisiana being the most popular states. The company has been in business since 1924. The wooden caskets are cloth covered. According to the company, the wooden casket market is slowly declining due to many factors such as personal preferences and spending income. However, as metal caskets tend to be more expensive, wood caskets are less of a burden for many bereaved family members in an economy where the cost of living and dying continues to spiral upward.

Pike County is home to an interesting forest products manufacturer. Henderson, Black and Green Inc. is located in the heart of "Trojan Country"—Troy State University. The company makes structural wooden **columns** of



different types and styles for the commercial and residential market. Wood is one of several other materials used in column manufacturing. The wood used in the columns is western pine (*ponderosa*). The columns are used as architectural features in homes and commercial facilities to enhance the structural look of the buildings. The columns have a national marketing area and are also exported to Canada. These wooden columns have even found their way to the newly renovated Alabama Statehouse building in Montgomery.

Near beautiful Guntersville Lake in Marshall County, Ann's Attic is located off of Highway 431. Here you can find **bent willow furniture**. This beautiful, handmade, crafted furniture is very poplar and has been the object of many magazine articles' depictions of the southern life style. The furniture is made of willow (or "golden" willow as described by the owner) and is gathered as far as 200 miles from the shop. They utilize the second or third growth of the willow for best results. The bent willow furniture is shipped as far away as Washington state. No two pieces are alike. The furniture is very durable if kept inside the home, and the owners have repaired pieces as old as 100 years. The story goes that gypsies traditionally made the furniture when they stopped and would use the local material to build for their buyers.

In Decatur, Ala., along side the beautiful Tennessee River, **wooden helicop-**

ter blades were manufactured at the Wahl Supply Company. The company is very unique because of the nature of its manufacturing setup. The company is oriented for job shop orders—one-of-a-kind wood products that can't be made at just any shop. By using CNC programmable routers, the company builds and sells the unusual. Many of their orders come from the military and defense industry near Huntsville. The helicopter blades were used and ordered by the military for reconnaissance drones. The blades were made of basswood and oak to Army specifications (wood is low profile to radar and doesn't reflect radar very well). Wahl Supply has made such unique items as shaker screens for grain elevators, conveyor parts, industrial cabinets and just about anything someone would want made.

In Greenville, Ala., known as the Camellia City, the community is known for very historic homes as a part of its development. A unique forest product manufacturer in Greenville which is making its own unique history is Structural Wood Systems. They produce **structural, glue laminated beams** for custom building orders. Most of their business is directed toward buildings; however, the company has produced glue laminated beams for sailing ships such as the U.S.S. Constitution. The structural members are made from high quality southern pine lumber and waterproof glue. The lumber comes from south Alabama forests, and the glue is made in Demopolis, Ala. Structural Wood Systems has been in business for 30 years and is proud of having more variation and capacity for design than any other company of its type. Many of their products have been exported. One of the newest structures the company is developing is the **timber bridge** technology. This newest upgraded version of older wood utilization will save rural counties thousands



cedar products such as **cedar furniture** and **cedar oil**. The company is only one of three cedar distilleries in the nation. In Pinson, the Bagby Gage Stick Co. manufactures 30 types of **fuel gages** made from the wood of the Banak tree. Brewton is home of Old South Country Kindlin', which

produces **pine kindling** for L.L. Bean and Eddie Salter **turkey calls**. South Alabama is also the location for Emperor Clock Co. which manufactures **grandfather clocks** in Mobile. Another unusual forest product produced in Alabama is **excelsior rope** and **animal bedding** by Winters Excelsior Co., in McWilliams. The Grief Brothers Co. in Garden City is one of the few **slack barrel and coopeage** manufacturers in the United States.

Alabama is truly a "State of Surprises" when one explores the variety of home-grown forest products. Unusual forest products reviewed in this article are but a few of the many being produced in Alabama. Alabama's creativity and the flexibility of her forest industry, coupled with the nation's greatest labor force and work ethic, combine to enable the state to remain a leader in the United States forest industry. Alabama's forest industry truly is a **TREASURE!** ♣

of dollars by using wood for the construction of small span, rural bridges rather than more expensive steel and concrete materials.

Nestled in the rugged scenic hills and rolling valleys of Blount County, Standridge & Marsh Basket Co. is producing **baskets** in the community of Nectar. The plant makes garden baskets in various shapes and sizes along with variations from the original basket design. These include sewing baskets, picnic baskets, and baby doll cradles. All of the baskets are made from yellow poplar, locally purchased. In full production the plant can produce approximately 250 garden baskets per day. The company has been in business since 1947. Their baskets are sold as far away as California and New York. The company uses the creativity of its employees for ideas to develop different variations of basket design and use.

West central Alabama is home to Hale County and Moundville, known for its Indian mounds. These were so well constructed hundreds of years ago that they exist today (Mound State Park). At Tuscaloosa Timber Co. in Moundville, hickory **drumsticks** are made from freshly cut hickory trees. The local area provides the raw material for probably the best manufactured drumstick in the world. Tuscaloosa Timber, owned by Zildjian Co. of Massachusetts, is one of the largest drumstick manufacturers in the world. Their drumsticks are used by today's top drummers. The company states that of the 26 types of hickory in the world, only three are good enough to become Zildjian drumsticks. Naturally, their largest drumstick plant is located here in Alabama.

There are other unusual forest products manufactured in Alabama. For example, in Jasper the Murphy Furniture Co. produces many types of

Economic Impacts of Erosion Control in Forests

An Excerpt from a Paper Written by GEORGE E. DISSMEYER
USDA-Forest Service,
Atlanta, Georgia

Erosion control can produce significant economic returns to the landowner. Economic returns come from increased timber production and savings in site preparation costs. The magnitude of economic benefit is not necessarily proportional to erosion.

In silviculture, the practices used to reduce erosion are often the same ones needed to maintain or improve soil productivity. To lower erosion, ground cover is increased by leaving litter and debris in place. Also, care is taken to decrease soil compaction and displacement. Reducing soil exposure, displacement and compaction leads to maintaining or improving soil productivity, thus sustaining or increasing timber production. It is through maintaining or improving timber growth and yields that the landowner and ultimately society benefits economically.

Available literature reveals erosion control practices can easily make a five to 15 feet difference in site index in the Southern Piedmont and Coastal Plain. In a recent economic analysis of our watershed management program for the Forest Service's Southern Region, a five foot difference for a 70-year sawlog rotation for an average site of 70 yielded a \$92 per acre difference in present net value for timber, besides saving \$30 to \$50 per acre in site preparation costs.

Patterson (1984) evaluated a five foot site index difference from protect-



Coleen Vansant

ing soil productivity for a pulpwood rotation (36 years) in Alabama (TABLE 1).

Light site preparation included practices such as chop and light burn or chop and herbicides, which reduce soil exposure and displacement. Heavy site preparation by bulldozing and windrowing or shearing and windrowing impairs soil productivity by nutrient removals by pushing litter, debris and top soil into the windrows, and by soil compaction. Patterson's data reveals that investing \$50 more in heavy site preparation reduced present net value by approximately \$129. The five foot decrease in site quality resulted in less sawtimber and more pulpwood per acre. Conversely, maintaining site quality yielded in larger trees and more valuable products.

Site Preparation Influence on Growth and Yields

Foresters seek to increase timber production through prescription of site preparation practices based upon site characteristics. In pine management, plantations are established using site preparation and tree planting to gain

proper stocking, which usually produces more wood than letting natural regeneration stock the area. Research has demonstrated some site preparation practices as better than others in timber growth on specific sites. No single treatment is universally the best, and field foresters need to

determine the best practice for maintaining or improving productivity of the soils they manage. ♣

Reference

Patterson, T. "Dollars in Your Dirt." *Alabama's TREASURED Forests*, Spring 1984, pp. 20-21.

Table 1
Analysis of Two Management Schedules on Site Productivity

Year	Silviculture Treatment	Light Site Prep.		Heavy Site Prep.	
		Amount \$/Acre	Wood Vol./Acre	Amount \$/Acre	Wood Vol./Acre
1984	Site Prep./ Tree Planting	\$120		\$170	
1999	Thinning	\$102	10.2 cd.	\$73	7.3 cd.
2010	Thinning	\$213	1,596 Bd. Ft 5.3 cd.		
2020	Final Harvest	\$980	9,541 Bd. Ft. 2.5 cd.	\$838	8,029 Bd.Ft. 3.5 cd.
Present Net Value		\$252.26		\$123.06	
Internal Rate of Return		12.4%		10.1%	

YOU Ought To Be In Pictures

Troy State University recently became the first university in Alabama to have a certified TREASURE Forest. The University's Arboretum, a 75-acre outdoor learning area located in Troy, is being managed for education, recreation, wildlife and aesthetics. The arboretum is also home to the state champion pond pine (*Pinus serotina*), which measures 61 feet in height, 49 inches in circumference, and has a 100.25 foot crown spread. Pictured left to right are Wayne Craft, Alabama Forestry Commission; Ed Barnett, TSU provost; and Arboretum Director Alvin Diamond.



"Truly an unsung hero who for many years has worked out of the limelight and behind the scenes," is the way Charles Rittenour was described in his nomination for the W. Kelly Mosley Environmental Award for Achievements in Forestry, Wildlife, and Related Resources. Rittenour was presented the award by State Conservationist Ernest Todd in November 1990.

Rittenour has served as a supervisor of the Montgomery County Soil and Water Conservation District for more than 33 years. He operates a 1,000-acre farm in the Pike Road community. In addition to pastureland and row crops, he has 530 acres of hardwood and pine that he manages with assistance from a consulting forester.

Pictured left to right are State Conservationist Ernest Todd, Charles Rittenour, and State Forester C.W. Moody.



FOXES IN ALABAMA

by STANLEY D. STEWART, Wildlife Biologist,
Alabama Department of Conservation and Natural Resources

How often have you observed foxes in their natural habitat? If you spend much time in the woods, chances are you have been near them without knowing it. Secretive by nature, foxes seldom intrude on many because our ecological niche and theirs do not coincide. We are busy during the day, foxes are active at night. Hence, we rarely see them and know little about their daily routines.

Red and Gray

Two species of foxes are found in Alabama, the red fox and the gray fox. The red fox is rusty red with black on the front of the legs, back of the ears and on the tail, which is white-tipped. The gray fox is grizzled gray on the upper body, reddish-brown on the sides, with white on the throat and abdomen. The tail is black-tipped. Average weight of the red fox is about nine pounds. The gray fox is slightly smaller, averaging eight pounds.

The gray fox is abundant in Alabama and thrives in brushy woodland habitats. The red fox, not as populous as its cousin, frequents more open field and pasture regions.

Night and Day

Foxes are nocturnal animals, although they do some moving during daylight hours. Becoming active between sunset and dark, they move to feeding sites, usually visiting several during the night. You can easily find a record of their travels. Just look for tracks in soft ground around edges of plowed fields, along woods, roads and in ditches. Before daybreak foxes move with little delay to a daytime resting site, often the one used the day before. Resting sites are usually located in dense thickets. Movements during daylight hours are normally local excursions, made in the proximity of the resting site, although red foxes

sometimes make daytime hunting forays.

Home ranges of foxes vary widely among individual animals and change with seasons of the year. Gray foxes generally range over a smaller area than red foxes. Females have smaller ranges than males. Summer ranges are usually smaller than winter ranges. The average area over which a fox ranges during a month has been reported to be from 40 to 640 acres, depending on the season of the year, food availability, and the sex, age and disposition of the individual animal.

Foxes are scientifically classified as carnivores. Practically, however, they are omnivorous, meaning they prefer meat but will eat many other things too. Food items include mice, rabbits, insects, various fruits and berries, and carrion. Diet is associated with the availability of seasonal foods. For

instance, grasshoppers and beetles are important summertime foods. Persimmons are often an important diet component during the fall.

Male and Female

Foxes breed during late January and February. They are believed to be monogamous, though the pair bond might last only one denning season. Pups, normally three or four, are usually born in April. During this period the activity of the female is restricted to the vicinity of the den site.

Red foxes dig extensive burrows used predominantly for rearing pups. Adults sleep above ground most of the year. Gray foxes seldom dig burrows. Their denning areas include holes under blowdowns, hollow logs and tree trunks, rock cavities and overgrown brush piles. Red fox vixens tend to



Red fox

remain inside the den for only brief periods while nursing pups. Female gray foxes spend much of their time in the den with pups during early nursing stages. Male foxes generally remain away from dens where pups are present, though they stay near the den area. Foxes commonly change den locations, especially when unduly disturbed.

While weaning, females spend most of their time away from the den. They make foraging trips during the night, returning to the den at intervals with food for the pups. The young are weaned and leave the den site at approximately ten weeks of age. Accompanying the mother on hunting trips, they become increasingly independent. By October the young are totally independent of adult care and begin to move into separate ranges. The majority of young male foxes has been found to disperse into entirely new home ranges. A movement of 245 miles has been recorded for a red fox, though this is quite an exception. The average move is usually less than 10 miles. Young females normally disperse smaller distances than males. Females often retain some identity with their natal area. After their first breeding season adults seldom locate to new ranges.

Foxes have relatively short lives in the wild. An extensive study of a southeastern gray fox population indicated that 61 percent of the animals were less than one year old, 28 percent were one year old, 7 percent were two years old, and only 4 percent ever reached age three or older.

Pest or Prize?

The fox has developed a reputation as a pest, a predator, and an agent of disease: an "evil" member of the wildlife community. Yet some regard him highly as a game animal and others prize his pelt. Farmers and upland game hunters have frequently maligned the fox for depredations on poultry and game birds. Public health officials worry about the propensity of the fox to disseminate rabies and other diseases. The fox on occasion has been such an enemy of society that governments placed bounties on its head in an attempt to control it. We learned, however, that there was no way to out-fox the fox, nor was it necessary. It has its place in the scheme of nature. As it performs its daily routines, it plays a functional role in the natural world. ♠

Alabama's State Forests *A Recreational Opportunity*

by SHARON A. CLARK, TREASURE Forest/State Lands Section Chief, and BILL PADGETT, Tree Improvement Section Chief, Alabama Forestry Commission

Alabama offers many kinds of recreational activities to the public. An individual may choose canoeing, swimming, hiking, skiing, bird-watching, camping and hunting. Many people associate state parks as the facilities which offer a person a place to enjoy his particular recreation. In Alabama this is not always the case. The Alabama Forestry Commission owns eight state forests. Three of the largest, Choccolocco State Forest, Geneva State Forest and Little River State Forest, may be enjoyed by the public seeking a place for recreation.

Choccolocco State Forest

Choccolocco State Forest is nestled in the Appalachian Mountains in east central Calhoun County approximately 12 miles east of Anniston. The forest is bordered by the Talladega National Forest on the east and slopes down from Choccolocco Mountain, which divides the state forest from Fort McClellan Military Reservation on the west.

Choccolocco's 4,506 acres range from steep rocky mountain lands, forested rolling hills, piney wood flat-

lands to a hardwood bottom which runs along Choccolocco Creek. The primary management goal of the state forest is timber management, but the extensive topographic range is ideal for a variety of recreational uses.

The entire state forest is located in the Choccolocco Management Area. This provides opportunities for hunters to enjoy pursuing several species. Four two-day deer hunts are scheduled each year. In addition to the deer hunts, bow hunting is allowed during the entire bow season. Sportsmen may also enjoy the thrill of the hunt by hunting turkey, squirrel, rabbit, quail and dove anytime during the appropriate season. A hunter must possess a special permit to hunt on the management area, in addition to the required state hunting license.

Some local people have enjoyed fishing on a limited basis on Choccolocco Creek. Primitive camping is allowed by permit and the network of roads and firelanes provide opportunities for peaceful walks among the natural beauty which flourishes at Choccolocco State Forest.



Geneva State Forest

The mountains and valleys of the state forest are filled with flowering plants which include black-eyed susan, flowering dogwood, honeysuckle, goldenrod and a host of mountain laurel. Besides the game species which are present, many non-game species live on or utilize the forest. The local Audubon Chapter visits the state forest once a week to view birds which live on or pass through the area. A species of merganser which is very unusual to the area has been identified by the chapter.

One of the loveliest spots on the forest is a waterfall which offers photographic opportunity, a place of peaceful solitude and picnicking for the individual who enjoys spreading a blanket on the ground. A small picnic area is currently planned for the location and will be developed in 1991.

Geneva State Forest

Geneva State Forest has been owned by the Alabama Forestry Commission since the 1930s. It is located in western Geneva County near Kinston, Ala. The largest forest owned by the Alabama Forestry Commission, it contains 7,120 acres of land; 6,563 acres are forested.

Recreational opportunities abound on Geneva State Forest. The forest is included in the Covington Wildlife Management Area. This area is managed cooperatively by the Alabama Forestry Commission and the Department of Conservation and Natural Resources. Hunting and fishing are allowed on the forest, and probably attract the most participants. Deer, turkey, rabbits, squirrels, quail and ducks are available to the hunter. All hunters must have a valid license and adhere to the game laws of the state of Alabama. Fishing is allowed for a small fee in a 100-acre lake in the forest. Also, picnicking is allowed adjacent to the lake and tables are available.

Hiking is allowed on the forest as the network of roads provides easy access to a pleasing and enjoyable environment. Bird watching is enjoyed since a wide variety of birds have been seen on the forest, including the bluebird and the red-cockaded woodpecker. Photography is a hobby enjoyed by many, and Geneva State Forest offers a wide variety of scenic opportunities (e.g., trees, flowers, birds, armadillo, snakes, water scenes, etc.).

Horseback riding is allowed by those who have their own horses. This

is an ideal way to see the forest and enjoy its pleasantries.

Little River State Forest

The largest state forest in the southeastern part of Alabama is Little River State Forest. The forest's 2,120 acres are divided over Escambia and Monroe Counties and have been owned by the Alabama Forestry Commission since the 1930s. Part of the forest is currently leased to the Department of Conservation for use as the Claude D. Kelly State Park.

Recreational opportunities are well developed on the state forest. Fishing and swimming are allowed on the 35-acre lake located in the state park. Wood ducks may be viewed on the lake along with other waterfowl. A picnic area is located next to the lake, which includes picnic tables with free-standing barbecue grills, a covered pavilion and vending and restroom facilities.

Camping is enjoyed by many utilizing the park. Both primitive and hook-up camping are allowed. Two small cabins are also available for reservation.

Nature trails are found on the park and on the rest of the state forest. These trails offer an excellent way to view the natural beauty of the forest and are lined with a diverse range of flowering shrubs, trees and wildflowers. Much of Little River State Forest is covered in natural longleaf pine stands which are prescribed burned periodically. The burns produce stands with appearances very similar to a park. A network of roads allow viewing of these stands. In addition to the

managed stands, a small area on the forest has been left in its natural condition, and may be viewed for educational purposes. The natural area allows observation of the natural progression of a forest.

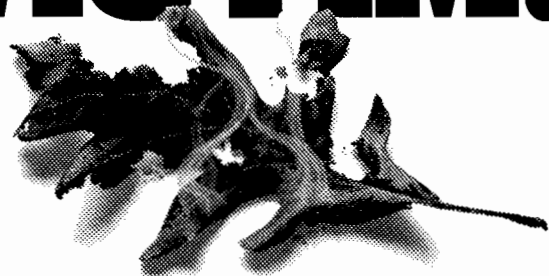
Hunting is not allowed on any portion of the forest due to the large number of people who utilize it. Day use for such activities as archery contests however, is available upon request. Wildlife observation areas are being expanded at this time and will hopefully be completed by 1992. A wide variety of both game and non-game species may be observed, including deer, squirrels and bluebirds. Wood ducks and other waterfowl are not limited to the lake, but may also be viewed on Little River, which runs through the state forest.

The state forests of Alabama offer many options to those seeking recreational opportunities. Whether it is looking for a serene place along the waterfall at Choccolocco State Forest, having a family reunion at Little River State Forest or enjoying horseback riding at Geneva State Forest, a person may find a place to escape the worries of everyday life. Alabama is blessed with many natural beauties and wonders. Visiting a state forest is one way to partake of Alabama's natural blessings. ♣

For more information:

Choccolocco State Forest	236-5369
Little River State Forest	862-2411
Geneva State Forest	898-7013

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Alabama's state butterfly, the Eastern Tiger Swallowtail (above). Below, you can plant flowers which attract butterflies.



Beauty In Flight

by KIM GILLILAND, Editor

They have been called “flying flowers.” Without doubt, butterflies are the most beautiful insects, as well as being a delight to watch.

Butterflies are part of the animal phylum Arthropoda. Like other insects, butterflies have six jointed legs, three body segments, and two antennae. Butterflies and moths make up the order Lepidoptera, from the greek words for scale and wing. Members of this order are different from other insects because they have millions of tiny scales over their four wings and sometimes over their bodies. These scales overlap like roof shingles and make up the colorful patterns on a butterfly’s wings. If a butterfly’s wing is handled, the scales may be seen as a fine, powder-like substance.

While there is not one single characteristic distinguishing butterflies from moths, there are several ways to tell the difference between the two. The most obvious difference is that butterflies usually have brightly colored wings, while most—but not all—moths are dull in color. Butterflies hold their wings upright over their backs, and moths rest with their wings flat. Unlike moths, butterfly antennae have knobs at their tips. Another difference is that moths are basically nocturnal, flying at night, while butterflies are customarily active during the daylight hours.

Life Cycle of a Butterfly

There are four stages in the life cycle of a butterfly: egg, caterpillar, chrysalis (pupa), and adult. The changes that take place from egg to adult butterfly are fascinating. This change is called complete metamorphosis.

The female butterfly is careful to lay her eggs on plants that the caterpillar prefers to eat. While butterflies may locate the host plant by sight, the feet are also used to scratch the leaves and receptors on the bottom of the feet “taste” to identify the correct plant. The female may lay eggs singly or in clusters. The amount laid varies from a few to several hundred, although

many eggs are eaten by predators and do not hatch.

Emerging from the egg is the caterpillar, which feeds and sheds its skin several times before forming a chrysalis. Butterfly caterpillars are capable of producing silk, but unlike moths do not spin cocoons. Their silk is used to fasten leaves together for protection or as a support for the chrysalis. The chrysalis stage in the life cycle of a butterfly is one of rest. Many are naturally camouflaged for protection and resemble leaves, stems, or wood.

When the butterfly reaches the adult stage, the chrysalis splits open and the butterfly emerges. Blood is pumped into the wings, and the butterfly waits for them to dry and harden before taking flight. The butterfly does not eat like the caterpillar did, as it is fully formed when it emerges from the

chrysalis. It does drink nectar and other nutrients, however, through a straw-like organ called the proboscis. When not in use, the proboscis is kept coiled underneath the head.

Butterflies need to have a body temperature of about 80 degrees Fahrenheit in order to fly. Basking in the sun, the butterfly soaks up heat to increase its body temperature.

While some butterflies live several months, the average life span is only a few weeks.

Butterflies in Alabama

A wide variety of butterflies are found in Alabama, including several kinds of swallowtails.

Swallowtails are named for the tail-like projections on their hind wings. Easily identified, the male and female Tiger Swallowtails are yellow with



Gulf Fritillary



The egg stage

black tiger stripes across their wings. On the bottom of the hind wings are patches of blue and some orange spots. Host plants for the Tiger Swallowtail caterpillars include willow, cottonwood, yellow poplar and cherry trees.

Another butterfly commonly found in Alabama during late summer and fall is the gulf fritillary. This orange and black butterfly has a pattern of silver markings on the underside of its wings. The host plant for the gulf fritillary is the maypop, or passionflower. In fact, if the caterpillar is removed from the maypop, it will stop eating and starve rather than eat a plant which is not the host plant for the species.

One of the most easily recognized butterflies is the Monarch. This is the only butterfly known to have a true north and south migration like birds. No one butterfly makes the full trip, however. After flying south, the butterflies breed on the way back and their offspring will be the ones to make the final leg of the journey. The Monarch is burnt orange on top with black veins, while the underside is a lighter color. Their wings are black around the edges with white spots. A very large butterfly, its wingspan can be up to four inches.

The Monarch likes the milkweed as its host plant, and meadows with milkweed growing are a favorite breeding ground. Monarchs and other butterflies who eat the toxic milkweed are safe from predators, who know they are poisonous.

Partridge pea, sennas, clovers, and other legumes are favorite host plants for the yellow Cloudless Sulphur. This butterfly may be found in Alabama near open spaces, gardens, and seashores.

Other butterflies common to Alabama include the following: Spring Azure, Buckeye, Painted Lady, Red-spotted Purple, Variegated Fritillary, Pearl Crescent, Little Wood Satyr, Sleepy Orange, Zebra Swallowtail, Silver-Spotted Skipper, Fiery Skipper, Pipevine Swallowtail and the Gray Hairstreak.

An excellent guide to identifying butterflies is *The Audubon Society Field*

Guide to North American Butterflies. This comprehensive guide has color photographs of butterflies and corresponding text which describes them in detail.

Butterfly Conservation

Butterflies are found on every continent except Antarctica. The number of butterfly species continuously decreases as the distance from the equator increases. Approximately 700 species of butterflies can be found in North America.

The habitat for butterflies is decreasing, however, as urban development escalates. But the most serious loss of habitat is in tropical regions. The rain forests, which are homes to more kinds of butterflies than any other habitat in the world, are gradually disappearing.

Conservation groups are working together to preserve butterfly habitats and to increase the appreciation of these insects. Callaway Gardens in Pine Mountain, Ga. has built a glass enclosed conservatory where visitors may walk among free-flying butterflies and observe their beauty.

How to Create a Butterfly Garden

- Locate the garden in a sunny area. Butterflies and most butterfly-attracting plants require bright sunshine.
- Plant nectar-producing flowers. Clusters of short, tubular flowers or flat-topped blossoms provide the ideal shapes for butterflies to easily land and feed.
- Select single flowers rather than double flowers. The nectar of single flowers is more accessible and easier for butterflies to extract than the nectar of double flowers which have more petals per flower.
- Use large splashes of color in your landscape design. Butterflies are first attracted to flowers by their color. Groups of flowers are easier for butterflies to locate than isolated plants.
- Plan for continuous bloom throughout the growing season.
- Include host plants in the garden design. Host plants provide food for caterpillars and lure female butterflies into the garden to lay eggs.
- Include damp areas or shallow puddles in the garden. Some butterflies drink and extract salts from moist soil.
- Place flat stones in the garden. Butterflies often perch on stones, bare soil or vegetation, spread their wings and bask in the sun. Basking raises their body temperature so they are able to fly and remain active.
- Use biological controls and insecticidal soaps for pest management. Most traditional garden pesticides are toxic to butterflies.

Source: Callaway Gardens

Also, consult the following books for information on butterfly gardening:

Tekulsky, Mathew. **The Butterfly Garden**. The Harvard Common Press, 1985.

Xerces Society in association with the Smithsonian Institution. **Butterfly Gardening: Creating Summer Magic in Your Back Yard**. Sierra Club Books, 1990. ♣



When not in use, the proboscis is kept coiled underneath the head.

Through the efforts of several civic groups in Selma, that city has been named the "Butterfly Capitol of Alabama." These and other groups successfully lobbied to have the Eastern Tiger Swallowtail named the state butterfly of Alabama in 1989. Alabama joins the state of Georgia in adopting this butterfly as its mascot. In addition the legislature has designated April 16th each year as "Save the Butterfly Day" in Alabama.

What can you do to save the butterflies and enjoy their beauty? Try planting a butterfly garden in your back yard. Butterflies are attracted to those plants caterpillars prefer to eat and the nectar-producing plants the adult butterfly prefers. Having these

plants in your back yard will increase your chances of enjoying these exquisite creatures.

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- "Butterfly Watching." **Nature Naturally**, Spring 1989, Callaway Gardens.
- Pyle, Robert Michael. **The Audubon Society Field Guide to North American Butterflies**. New York: Alfred A. Knopf, 1981.

Whalley, Paul. **Butterfly and Moth**. New York: Alfred A. Knopf, 1988. ♣

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Plantings for Butterflies

Here are just a few of the many plants you can grow to attract butterflies.

Host Plants for Caterpillars

- Butterfly weed
- Fennel
- Milkweed
- Passionflower
- Violet
- Elm
- Hackberry
- Wild Cherry
- Yellow poplar

Nectar Sources for Adult Butterflies

- Azalea
- Black-eyed susan
- Butterfly bush
- Coreopsis
- Impatiens
- Marigold
- Phlox
- Thrift
- Zinnia

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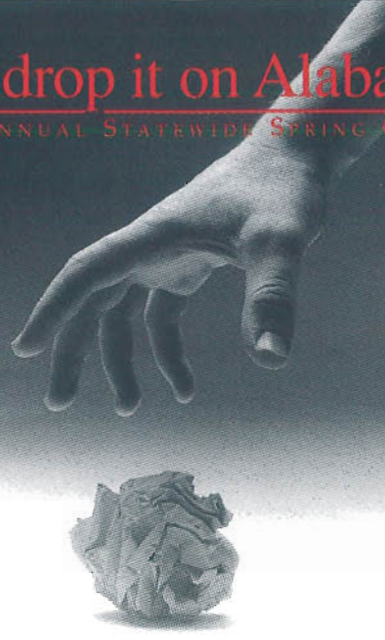
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