



QUALITY  
VEGETATION  
MANAGEMENT  
ON  
COONTAIL FARM  
ABERDEEN, MS



### What Is Quality Vegetation Management™ (QVM)?

QVM is an approach to land management that promotes the natural, native vegetation across the forest landscape to improve wildlife habitat and animal carrying capacity. QVM uses management activities that cause the lowest disturbance to wildlife and habitat, but the greatest habitat improvement. QVM allows land managers to benefit further by curtailing other, more costly, but less beneficial activities such as mechanical control of hardwood brush, food plots and supplemental feeding. QVM practices can also enhance timber growth by increasing forest health and accelerating pine growth.



**Hardwood invasion in recently thinned Pine Plantation**

## Controlling Undesirable Hardwood

Across the Southeast, forestlands can be expected to suffer from invasion of low quality, undesirable and aggressive hardwood species. These undesirable hardwoods crowd out wildlife-quality vegetation and compete for water, sunlight and other site resources. Many land managers attempt to control hardwood by mechanical means (mowing, chopping, dozier) or through prescribed fire.



**Under-story  
control burn  
conducted by  
Mississippi  
Forestry  
Commission**

While these practices temporarily reduce the above ground portion of hardwood plants, the rootstocks continue to thrive and compete vigorously for site resources such as moisture, nutrients and root zone space. Some hardwood species can even be invigorated by the disturbance (sweet gum can send up an average of 9 new sprouts with each disturbance). 1-2 years after burning, mowing or chopping, land managers are again plagued by hardwood. These 1-2 year old hardwood re-sprouts may only be a few feet in height, but their looks can be deceiving and their impact underestimated since they are actually growing off of a mature rootstock.



### **Hardwood Re-invasion after a cool season burn in a Pine Plantation**

Land managers can use selective herbicides to control unwanted hardwood brush. It is the most effective means of reducing hardwood since it controls the hardwood stem down into the roots and prevents its re-growth. Compared to mechanical or fire, herbicides treatments actually control hardwood, are required less frequently and are more selective in terms of species controlled. Since selective herbicides are highly effective at controlling hardwood, the need for retreating the forest is rare if follow-up practices such as prescribed fire are planned. Otherwise, most landowners expect a 10-year, or more, benefit from the treatment.



**Untreated strip of thinned pine plantation, note heavy invasion of sweet gum, privet hedge and elm.**



### **Pine Plantation using QVM™ practices (3 growing season after treatment)**

#### Release High Quality Natural Vegetation

Since herbicides are selective, they eliminate undesirable hardwood species while leaving desirable food source and ground cover plants such as forbes, blackberry and legumes unharmed and released to flourish without competition from hardwoods. Soon after the treatment, other desirable vegetation such as grasses and vines colonize and thrive. QVM shifts the plant species composition of the site from domination by low quality, undesirable hardwood species to a proliferation of valuable, wildlife-preferred quality vegetation that supports healthier, more abundant wildlife populations. With QVM, land managers utilize the available seed bank that already exists on their land. It is free of charge and available for use if only allowed to grow. These native plants don't need to be purchased every year, do not need a prepared seed bed, and don't require planting. Land managers won't need to follow the weather forecast to time tillage or worry about germination. These native plants are naturally more drought tolerant, naturally palatable to wildlife and nutritious. Recent Mississippi State University research discovered that species richness increased significantly (150% more plant species present) from QVM. Recent Louisiana State University research discovered that the increase in plant diversity from QVM resulted in a dramatic increase in insect diversity (300% more). A Clemson University study showed greater insect abundance

with QVM (100% more). With QVM, more legume plants are present that produce significantly more digestible protein (500% more in Mississippi State University research).



## **Recently germinated Partridge Pea**

### Promote and Stimulate Growth

Site fertilization has also been shown to enhance growth and development of native plants. Nitrogen, phosphorous and potassium are the most important elements and contained within most standard-grade fertilizer formulations (i.e. 10-10-10, etc.). While this is not a necessary practice on many sites, which are not deficient in these elements, research and practical use have demonstrated that the addition of soil nutrients through fertilization will certainly improve vegetative biomass, flowering, fruit, seed and protein production per acre of land. A soil analysis will provide information regarding soil fertility and the relatively need to supplement it with a fertilization. Also, liming and fertilizing large areas may be cost prohibitive and land manager may wish to select areas to implement this practice. In subsequent years, fertilization can be continued over other areas as well. Timber health and growth will also be stimulated by fertilization, helping to justify and pay for the costs of this treatment over time.

## **Basic Steps To Implementation**

### 1. Herbicide Application

**Arsenal<sup>®</sup> herbicide Applicators Concentrate** and **Chopper<sup>®</sup> herbicide** are the two products most often used to improve wildlife habitat and promote habitat diversity. While ARSENAL can be applied safely over the top of pines without injury, CHOPPER must be directed away from the crowns of desirable pines. Both products are considered by the forest industry as the most effective, and considered by wildlife organizations as the most beneficial.



## **Arsenal AC herbicide application to a thinned Pine Plantation**

### **2. Stimulate Germination**

While QVM can certainly be successful without fire, a prescribed burn the first winter following the treatment will promote native plant germination and accelerate and enhance the effect of QVM. Fire removes the litter layer, that is acting like a weed suppressing mulch, and stimulates plant germination. Some forest plants are adapted to, and even require fire. Many landowners are in sensitive areas and cannot get burning permits; others elect not to burn due to liability or cost. An alternative to burning is to use a drag. A drag made of dozier tracks has been fashioned and utilized by some over the years. The results and durability are good, and the cost to operate it are low.



**Hershel Drag  
pulled in row  
thinned pine  
plantations.**

### 3. Increase Site Nutrition

Soil analysis should be taken to determine if the site is deficient and could benefit from some nutritional adjustment. Most sites should reflect an opportunity to enhance quality vegetative response, however some sites are highly productive and response would be reduced. Also, if fertility is adequate, adding fertilizer to the site could simply create excessive vegetative growth and require more frequent maintenance activities and costs.



**Fertilizer application with tractor and buggy**

#### 4. Continued Maintenance

With QVM, vegetative maintenance evolves from racing to stay ahead of controlling hardwood, to refining the vegetative structure of the habitat to fit the needs of the wildlife objective. As discussed earlier, without hardwood problems, vegetation maintenance is easier and less costly since maintenance intervals should lengthen allowing for more time between burns, etc. However, at some point, vegetative growth will exceed the desired vegetative structure depending on land productivity, native plant species and annual rainfall. Habitat will be improved since the type and timing of vegetation manipulation will be selected based on what is best for the wildlife objective – not because hardwood are taking over and have to be controlled no matter what damage it may cause.

## Examples Of Implementation

### Creating Habitat After Thinning A Pine Stand

Once a pine plantation has been thinned, the new sunlight penetration will make QVM implementation possible. About one year after the logging operation, hardwood vegetation will recover from the mechanical disturbance and be ready for QVM implementation. In the fall, apply the selective herbicide treatment to control the undesirable hardwood. Follow at the end of that winter with a prescribed fire to remove debris and promote plant germination.

### Reducing Maintenance Costs Of Forest Land

Other than enhancement of wildlife, land managers will benefit significantly from reducing their land maintenance costs. Mowing is very expensive, damaging to wildlife and habitat, and time consuming. It can be eliminated across the forest landscape entirely, except for specialized objectives such as creating camping or picnic sites, walking access, etc. Burning has become more expensive and difficult. QVM can reduce prescribed burn frequency (depending on land productivity and wildlife objective). For example, possibly extend quail land burns from every 2 years to every 3-4 years, turkey land burns might be extended to every 4-5 years, and deer land burns only every 5-6 years. Also, QVM burning is easier and more efficient since grassy fire fuels are abundant and smoke management easier due to less hardwood fuel. Easier, less frequent burning should make land management much easier.

### Eliminating Supplemental Feeding

Many land managers are forced to consider supplemental feeding since the land is not supporting the nutritional requirements of the desired quail populations. This represents a very high management cost. Annual "feed bills" alone can be calculated at \$10 or more per acre across the entire forest land-base. Other costs such as equipment, labor, etc. would add even more. Supplemental feeding can also help defeat the intended result as it has been observed to exacerbate predator problems. It has been theorized that once QVM has been implemented and the native vegetation objective is established, supplemental feeding programs could be sharply reduced or even eliminated.



### **Ladino Clover planted in pull-road after a thinning operation**

#### Shift Focus To Other Valuable Projects

Having to stay ahead of undesirable hardwood encroachment can be pressing. Land managers have so many tasks that need attention but only so much time. So, many of the jobs they would like to spend more time on just continuously get “put on hold”. They may have to compromise attention on the dogs and kennels, the horses and barn, equipment maintenance or building up-keep. Since habitat establishment is the first order of business with wildlife management, QVM can get you the big benefits. Then, you can begin to work on other refinements such as supplemental feeding (if necessary), trapping (if beneficial), Quality deer management activities such as herd observation and hunting club training. I am sure there are many great projects land managers have in the back of their mind – if they only had time.



### Allowing For More Time For Recreation

Landowners, especially those who live off-property, are pressed for time to “stay on top” of everything. Sometimes it may seem that they have lost track of one of the primary reasons they own the property – to enjoy it. Vegetation management can become a continuous burden that consumes time and money. Mowing, chopping, disking, burning, plowing, spreading, planting, cultivating, spraying, etc. can become just another job on the weekend for a landowner. When QVM is implemented, most of those activities can be reduced and/or eliminated which leaves time for the real landowner objectives such as fishing, scouting, shooting, walking, hunting, riding, training, cooking, eating, entertaining and relaxing.

## Summary

There is no doubt that QVM implementation will improve wildlife habitat and animal carrying capacity and allow land managers to reduce cost and redirect efforts to other objectives. The first step to QVM is to speak to your BASF representative, forest herbicide distributor, private or state wildlife biologist or forestry consultant. It is really best to speak to as many sources as possible as you improve your land management plan with a QVM project. QVM will make a major difference in your land within 1 year, and the full benefits will begin to be enjoyed 2 years after implementation. Landowners can expect great improvements for wildlife, increased timber growth, improved hunting quality of land (access/view/safety) and enhanced land aesthetics. All these QVM effects will lead to rising land ownership pride and land value.



Always read and follow label directions.

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1950's era Mississippi Forestry Commission Fire tower standing silent guard.

