



# It's YOUR Woods

(SO KNOW YOUR AGS AND UGS)

*By David Mercker, Ph.D.,  
University of Tennessee Extension Forester  
(Reprinted with permission from  
Kentucky Woodlands Magazine – Vol. 8, Issue 3)*

**A**s a young forester trundling through the woods nearly 30 years ago, there are three memories that vividly stand out: 1) only a brisk cadence allows one to keep pace with the forest supervisor, 2) property lines aren't always accurate, and 3) forest management *begins* with defining the "AGS and UGS."

Forests, and trees in particular, are often classified, grouped, evaluated, and judged based on many characteristics. These characteristics, in the simplest sense, can be either acceptable or unacceptable. Professional foresters are complete with their own vocabulary, and quickly refer to those trees with favorable qualities as AGS, short for "Acceptable Growing Stock." Trees that don't meet forest ownership objectives are termed UGS, or "Unacceptable Growing Stock." So AGS are good; UGS are not so good (or so it may seem).

In your woods, there are many AGS and UGS. Knowing the difference and taking the time to separate them can be challenging. In order to create a clear picture, let's begin by explaining the term "growing stock" and how growing stock can be either acceptable or unacceptable.

## **Growing Stock**

We've all been taught that when the meaning of a phrase is not understood, first break it into its parts. The word "growing" needs no explanation, but "stock" might. Think of stock as the amount of something held in reserve for future use. So in the cattle industry, livestock are not yet ready for market. As consumers, we stock our cupboard for future consumption. Retailers make sure that they are well-stocked with salt prior to an anticipated ice storm, and so on. In forestry, we refer to live standing trees in a forest as growing stock. Growing stock is acceptable when it meets the landownership objectives. Typically AGS includes trees that are not yet ripe for picking and that are still

Photo by Luke Mercker

adding wood volume. These trees are retained for future benefit or sale.

That's the simple part. The picture becomes a bit foggier when we seek to describe what constitutes the word *acceptable*. How is acceptable classified? Says who? When left to our own training, knowledge, and experience, foresters typically refer to AGS as follows:

- desirable species (such as oaks, walnut, maple, poplar, cherry, hickory, etc.)
- that are with good form (relative straightness) and grade (few defects)
- vigorously growing with expanding crowns
- of the right size
- found on the appropriate site
- meeting the demands of the local wood industry.

There's a lot to consider. Defining AGS is complicated, especially when the above considerations are melded together. For instance, white oak (*Quercus alba*) is commonly considered AGS. However, if a certain white oak tree is deformed, or suppressed from overhead competition, or was damaged or hollowed-out by previous abuses (such as fire or livestock), or growing off-site (for instance on a site that is too wet), then that tree is tallied as an UGS. So, a would-be AGS can be relegated to UGS. The environment and human interaction can be tough on trees!

Of course calling out AGS vs. UGS depends on the standards by which the trees are judged. And who's the judge?

### Who's the Judge?

One of most fascinating features of our grand democratic experiment is that individuals, not just governments, have the pleasure of owning land. Private family-owned woodlands are the largest ownership class in the United States. Landowners, much like the woodlands they own, are a diverse group. Ultimately it is the *owner* of the trees who has the say on which trees are acceptable and which ones aren't.

The previous criteria that foresters use to constitute AGS is only a template. It assumes that the primary ownership objective is to grow top quality trees, of high value, as rapidly as possible,

*A typical upland hardwood stand with both AGS and UGS.*

Table 1. Determination of Acceptable Growing Stock (AGS) based on Ownership Objectives	
Ownership Objective	AGS - Trees to Favor
<p><b>Wildlife Diversity</b></p>  <p><i>Wildlife dens can be AGS.</i></p>	<p>Wildlife diversity requires habitat diversity, so aside from hard mast fruit producers such as oaks and hickories, AGS can include soft mast such as blackgum, persimmon, dogwood, etc. Trees classified as culls, dens, and perching can be AGS, as well as understory trees that are important for nesting and browse. A forest that is too well-manicured often is not preferred for wildlife.</p> <p>Example of wildlife AGS: a large hollow beech, complete with many den holes and producing nuts.</p>  <p><i>Sumac can be AGS by meeting both aesthetic and wildlife objectives.</i></p>
<p><b>Aesthetics</b></p>  <p><i>Trees with special shapes may be AGS for their aesthetic value.</i></p>	<p>Referred to as "look-em-at-em" trees, trees with aesthetic appeal are as varied as the ones doing the looking. AGS can include crooked and forked trees, those that are hollow and with den holes, those with pleasing flowers or fall color. Although such AGS may not have much monetary value, their intrinsic value can be priceless.</p> <p>Example of aesthetics AGS: two trees that have fused together creating a contorted form.</p>

Photos by David Mercker

to meet the demand of the local wood industry. Many landowners embrace these criteria, but some do not, and that's okay. In fact, reports have continuously showed that woodland owners often place wildlife and non-consumptive uses of their forest higher than monetary return. Non-consumptive uses can include: aesthetics, recreation, mental restoration, heritage, etc. Consider Table 1 and how the determination of AGS varies according to the alternative wildlife and aesthetic objectives.

### Inventory Your Growing Stock

By now you are likely beginning to imagine your own woodland, what it presently looks like, and what it could become.

Perhaps your ownership objectives are more in focus, too. But  
*(Continued on page 12)*

Photo by David Mercker



# It's YOUR Woods

(Continued from page 11)

before you can achieve your objectives, you must know what your woodland currently contains. What do you have to work with? So let's return to the example of "stock," specifically the metaphor on stocking your cupboards. Before you can properly stock your cupboards, you must first know what is already there. You could say that you inventory your cupboards before making a list of wares that are needed. The same is true of your woodland. A timber inventory, like any inventory, involves taking stock of what is already available.

The process of conducting an inventory of your woodland is very involved; professionals are needed and recommended. But private woodland owners can conduct a cursory inventory to help take stock of what is present by following these steps:

1. Establish your AGS and UGS criteria and have a tally sheet.
2. Randomly traverse your woodland and measure 1/10-acre plots; these are circle plots with a 37-foot radius.
3. Record your AGS trees and UGS trees using a simple slash tally; each tree tallied represents 10 trees per acre.
4. Add up all your plots, then divide by the number of plots taken. Do this for both the AGS and UGS. The results will give you some baseline information that will aid in achieving your objectives.

To learn more about timber inventories, you are encouraged to read the following publication:

*Conducting a Simple Timber Inventory*, by J. Henning and D. Mercker, published by The University of Tennessee Institute of Agriculture, 2009, available at [utextension.tennessee.edu/publications/documents/PB1780.pdf](http://utextension.tennessee.edu/publications/documents/PB1780.pdf).

## Often It's Not "Either/Or"

There is a tendency (and it is a misconception) to think that woodlands are managed solely for crop trees – or for wildlife – or for aesthetics. But these objectives are not mutually exclusive. Indeed they can occur at the same time. More often than not, that is the case for most small landowners. For instance, even the



*Hidden treasure!*

most hard-core timber producers can leave occasional UGS to benefit wildlife and aesthetics.

And the opposite can be true too for those landowners whose objectives focus primarily on non-timber uses. With this option, often the AGS favored are the lower value "D" trees: defective, dying, deformed, diseased, damaged, or just duds. Beware though. Not having some higher value crop trees could limit the utility for future generations and even lead to woodland conversion to non-forest uses. In other words, if the woodland has such poor quality trees that it can't pay its way, it may be converted to a use that will. And that defeats our purpose.

So, for a more holistic, stewardship-centered focus, the criteria for AGS and UGS could be broadened.

## A Woodland Example

To help you visualize some of what has been discussed, the following is an example of AGS and UGS as it relates to a typical forest. This assumes that all the trees tallied are on a 1/10-acre plot (37-foot radius) located in the hardwood region. Note: this example only includes one inventory plot. For a more accurate representation, several plots would be required.

Example				
Objective: Grow top-quality hardwood timber to produce periodic income				
Species	Diameter (in.)	Condition	AGS	UGS
White oak	14	Excellent	x	
Elm	20	Cull		x
Red oak	12	Excellent	x	
Hickory	10	Average	x	
Box elder	14	Cull		x
Tulip tree	18	Excellent	x	
Tulip tree	8	Average	x	
White oak	8	Crooked, broken top		x
Red oak	14	Average	x	
Beech	30	Cull (hollow)		x
Beech	14	Excellent	x	
Totals			7 (or 70 per acre)	4 (or 40 per acre)

**Condition and Recommendation:** Seven of the 11 trees are considered AGS and since this is a 1/10-acre plot, that would yield approximately 70 AGS trees per acre. This is a very favorable stocking level of AGS. However, the 40 UGS trees per acre are competing with the AGS and to enhance the vigor and ensure the survival of the AGS, timber stand improvement (TSI) is recommended. With TSI, the UGS trees should be harvested (if possible) or deadened (if not).

The reason the UGS trees did not meet the ownership objectives are as follows:

- 20-inch elm – Subject to Dutch elm disease; low monetary value; produces little wildlife mast.
- 14-inch box elder – Very low market value; produces little wildlife mast; growing off-site.

- 8-inch white oak – A stunted (over-topped tree) that is dying due to broken top.
- 30-inch beech – Although potentially a good wildlife tree, it is so massive that it is competing heavily with the AGS; plus, other excellent quality beech trees exist on the site to produce wildlife mast.



Photo by Allan Houston

*An AGS tree based on aesthetic objectives.*

### Where to Go from Here

Feeling a bit overwhelmed? That's not necessary . . . there's help. Foresters often say that forestry is not rocket science. It's more complicated than that! Sure, there is much to be known, but that's why professional foresters exist. *Trained broadly in the natural resources disciplines, forest professionals can help you establish your objectives. From the objectives, comes the inventory. The inventory determines the AGS. Then from your AGS, action steps are established. Action steps ultimately help you achieve your objectives.* Just like putting one foot in front of the other. Take a moment to read that again. It summarizes what this is all about.

Finding a professional forester isn't that difficult. Foresters are either publically or privately employed. Each state has a forestry agency whereby public foresters administer conservation programs, fight wildfires, and, to limited extent, assist landowners in the development of forest stewardship plans. The plans



Photo by Jeff Lannom

*A timber inventory helps evaluate the AGS and UGS in the stand.*

contain steps to help achieve objectives. Normally landowners are then turned over to private foresters to assist in carrying out the stewardship plan. Private foresters are either independently employed consultants or are employed by forest industry. As always, it is beneficial to seek the counsel of many.

### Conclusion

Some days, if you stop, attentive and listening real close, you can hear the sounds of foresters way off in the woods, their tools rattling, their persistence as they scurry across the hills, and the thunder as they sound off trees in their plots:

“Give me a white oak, 22” x 3 logs, AGS . . . a sourwood, 16” x 2 logs, UGS . . . a red oak, 18” x 2.5 logs, AGS . . .”

It's the way of woods people. And as a private landowner, you are a woods person, too. It's your woods; get to know them. The privilege of woodland ownership also carries the responsibility of stewardship. Forest management begins by defining your AGS and UGS. Without this knowledge, you're just another landowner. With it, you're one step closer to becoming a steward. 🌲

To locate a state agency forester, see: [www.forestry.alabama.gov](http://www.forestry.alabama.gov) or [forestry.about.com/od/stateforestry/State\\_Forestry\\_Agencies.htm](http://forestry.about.com/od/stateforestry/State_Forestry_Agencies.htm) To locate a private consulting forester, see: [www.acf-foresters.org/](http://www.acf-foresters.org/)



*Mature white oak veneer trees.*