

# IT'S YOUR WOODS

## (SO KNOW YOUR AGS AND UGS)

by David Mercker

As a young forester trundling through the woods nearly 30 years ago, three memories 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 classified, grouped, evaluated, and judged based on many characteristics. These characteristics, in the simplest and most broad 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."

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 are still 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. When left to our own training, knowledge, and experience, foresters typically refer to AGS as follows:

- Desirable species (such as oaks, walnut, maple, yellow 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.

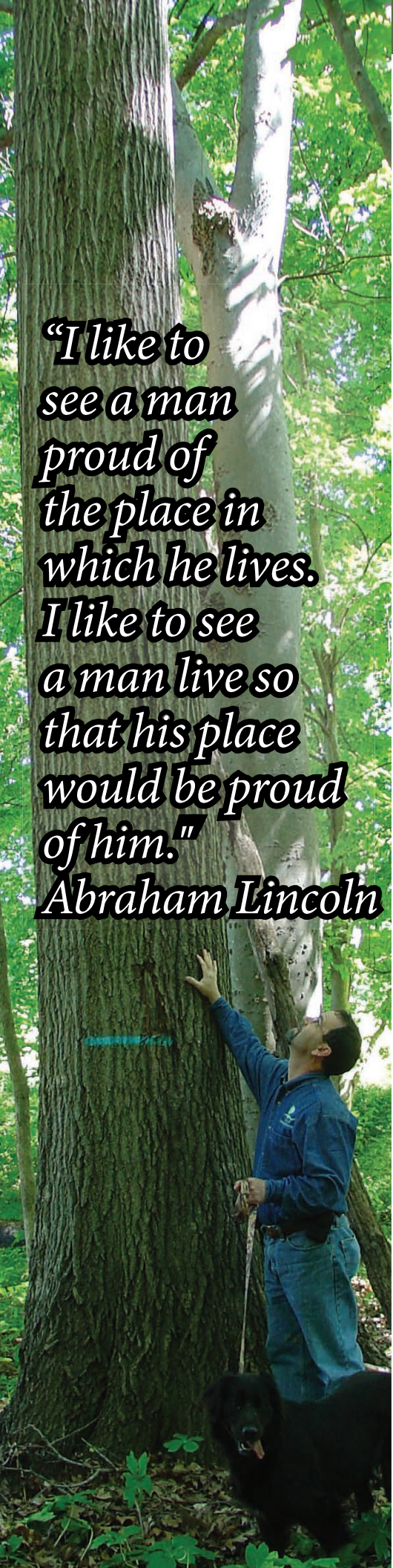
Defining AGS is complicated, especially when the above considerations are melded together. For instance, white oak is commonly considered AGS. However, if a certain white oak tree is deformed or suppressed from overhead competition or was damaged or hollowed-out by previous abuses (such as fire or livestock) 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.

### *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.

*This tree is no longer considered growing stock because it is mature and ready for harvest.*




*Photo courtesy: Luke Mercker*



**"I like to see a man proud of the place in which he lives. I like to see a man live so that his place would be proud of him."**  
**Abraham Lincoln**

The previous criteria 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, 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 continually 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.

**Table 1. Determination of Acceptable Growing Stock 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 oaks and hickories (hard mast fruit producers), AGS can include blackgum, persimmon, dogwood, etc. (soft mast); 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>Photo courtesy: David Mercker</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>  <p><i>Sumac can be AGS by meeting both aesthetic and wildlife objectives.</i></p> <p><i>Photo courtesy: David Mercker</i></p>

### ***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 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 the 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. Professionals are needed and recommended. But private woodland owners can conduct a cursory inventory to help in taking stock of what is present. Follow 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.



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

Photo courtesy: David Mercker

To learn more about conducting a timber inventory, you are encouraged to read the following publication for more information:

**Henning, J. and D. Mercker 2009. *Conducting a Simple Timber Inventory.***  
<https://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 aesthetics. But they 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 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, and 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.



*Hidden treasures!*

*Photo courtesy: David Mercker*

## A Woodland Example

To help you visualize some of what has been discussed, below is an example of AGS and UGS as it relates to a typical forest. This example assumes 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.

### Condition and Recommendation:

7 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 number is a favorable stocking level of AGS. However, the 40 UGS trees per acre are competing with the AGS and to enhance the vigor and insure the survival of the AGS, timber stand improvement (TSI) is recommended. With the TSI, the UGS trees should be harvested (if possible) or deadened (if not).



*Photo courtesy: David Mercker*

*Conduct timber stand improvement to remove UGS such as this elm.*

### Example 1: 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	
<b>Totals</b>			<b>7 (or 70 per acre)</b>	<b>4 (or 40 per acre)</b>

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

20-inch elm	- Elm are subject to Dutch elm disease, have low monetary value, produce little wildlife mast
14-inch box elder	- Low market value, produce little wildlife mast, growing off-site
8-inch white oak	- A stunted (overtopped) 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, other excellent quality beech exist on the site to produce wildlife mast.

## Where to Go from Here

Feeling a bit overwhelmed? That's not necessary. There's help. Foresters often state 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 resource disciplines, 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 publicly or privately employed. Each state has a forestry agency where by public foresters administer conservation programs, fight wildfires, and, to varying extent, assist landowners in the development of forest stewardship plans. The plans 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.

To locate a state agency forester, see:

<http://forestry.ky.gov> or

[http://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.kacf.org](http://www.kacf.org) or

[www.acf-foresters.org/](http://www.acf-foresters.org/)

## 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 one, too. It's your woods. Get to know it. 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.

### About the Author:

*David Mercker, Ph.D., is an Extension Forestry Specialist with the University of Tennessee Department of Forestry, Wildlife and Fisheries. He develops and provides forestry educational information and programs for woodland owners, loggers, and educators.*

University of Tennessee, 605 Airways Blvd., Jackson, TN 38301; E-mail: [dmercker@utk.edu](mailto:dmercker@utk.edu)



Photo courtesy: Jeff Lammon

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



Photo courtesy: Allan Houston

*An AGS tree based on aesthetic objectives.*



Photo courtesy: David Mercker

*Mature white oak veneer trees.*