

## Income Opportunities with Botanical Herbs: Planting the Seed.

By David Richert, Virginia Dept. of Forestry

Virginia Cooperative Extension and Virginia State University recently teamed up with the Virginia Department of Forestry and The University of Appalachia School of Pharmacy to host two day-long landowner workshops on income opportunities with botanical herbs. Researchers shared their combined experience of nearly a century with approximately 120 participants, including landowners, herbalists, foresters and Extension agents. American ginseng was a favorite topic, although the workshop covered a variety of botanical herbs, including: goldenseal, skullcap, valerian root, echinacea and California poppy. At the end of the workshops – thanks to a grant from the USDA Renewable Resources Extension Act (RREA) – participants were able to leave with a comprehensive textbook on how to grow ginseng, goldenseal and other botanical herbs.



Participants received a wealth of educational materials. Photo by: David Richert, VDOF.

For many forest landowners, the forest's primary economic value is found growing in the volume of standing timber. These revenues are periodically generated at timber harvest, often with significant capital inputs for cutting, skidding, loading and hauling the timber to the mill. For landowners with an interest in intensive management, there are additional income opportunities from botanical herbs. With a relatively short rotation and relatively small start-up capital, botanical herbs may be increasingly attractive as consumer demand for herbal medicine increases.

When considering growing botanical herbs for profit, careful planning is critical. Participants learned that certain herbs may have strict shade, moisture, nutrient or pH requirements that affect the success rate. (Both American ginseng and goldenseal seem to prefer slightly acidic sites that are rich in calcium). Planting is often the most challenging - seeds may need to be stratified or otherwise pre-treated, they may not germinate in the first year, or they may be eaten by rodents or birds. Collecting soil samples and/or establishing small sample plots with a few seeds are cost-effective methods of determining if you have a good site. Once established or nearing harvest, a variety of fungi, pests (including slugs, deer, and voles) can decimate a crop. Trespassers who illegally poach herbs can also reduce profitability.



Landowners watch a video on ginseng production. Photo by: David Richert, VDOF.

Participants also learned various marketing strategies, including USDA-certified organic labeling, to improve price and achieve greater stability in botanical herbs markets. Quality is a driver of profitability—trace amounts of heavy metals, or the concentrations of “bio-actives” (desirable biological compounds found in the herbs) may affect the marketability of some herbs. In the case of American ginseng, laws on trade in rare or diminishing species may also affect marketability. Regardless, good cooperation and communication among Extension agents, buyers and growers may help to increase the profitability, especially when growers can pool larger lots of their crops.

A landowner considering income opportunities with botanical herbs has a wealth of information available for review. Please visit the Virginia Cooperative Extension's Web site, or contact your local forester or extension agent for more information. David Richert is an RC&D Forester with the Virginia Department of Forestry david.richert@dof.virginia.gov

## Trees from page 1

How do you know if you are looking at a leaf or leaflet? This is easily determined by locating the bud. Starting at any leaf or leaflet tip, follow it back toward the stem until you encounter a bud. From the bud out is the leaf which may be comprised of many leaflets or a single simple leaf.

A wide variety of field guides and identification keys are readily available to help you learn your trees. A distinction should be made between identification keys and field guides. Field guides are primarily a listing of trees (or other components of the natural world) with pictures and information about certain species. They do not necessarily include a key. An identification key is the preferred tool for individuals to identify trees. A key guides you through a series of questions which gradually narrow the possible choices. If you work through the key properly, you will arrive at the correct species. A search in the ‘Nature’ or ‘Regional’ section of your local bookstore will reveal many good field guides and keys for your area.

An excellent on-line resource is the Virginia Tech Department of Forestry site created by Dr. John Seiler and John Peterson at: <www.cnr.vt.edu/dendro>. The home page offers several resources for tree enthusiast including fact sheets, an identification quiz, landowner fact sheets (geared toward forest management) and, perhaps the most valuable, an on-line key.

A downside of on-line resources is that you can't very easily take them out to your yard or a nearby park. From this standpoint, a pocket size tree-id field guide is often more practical. The “key” (pun intended) is to find one you like, then stick with it so you become familiar with how to use it. Some keys are much more complicated than others. I personally have found some of the most simplistic to be my favorites.

A couple of parting thoughts on tree id. Knowing the species of a tree is the first step to being able to care for that tree. And lastly, have fun with it! It can be very satisfying to be able to look at most any tree and know what it is or at least be able to figure it out.

Adam Dowing is the Northern District Forestry & Natural Resource Extension Agent; adowning@vt.edu; 540/948-6881

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program – in tandem with other government incentives – can, in many cases, pay almost 100 percent of the establishment cost and provide an annual incentive for maintaining the buffer. Contact your local USDA- NRCS or VDOF office today if you are interested in the CREP Program and finding out if the Lower Rappahannock Watershed Tool is available for looking at buffers on your farm.

Anna Cahoon is an RC&D Forester with VDOF anna.cahoon@dof.virginia.gov; Lucy Mallinak is the Lower Rappahannock Watershed Initiative Coordinator lucinda.mallinak@dof.virginia.gov

## Preparing for the Next Owner Short Course - Update

For those of you interested, but not able to attend this course on how to pass your lands onto future generations, I have a limited quantity of the course workbooks available. These books include the speaker's notes as well as background information on the different topics. If you are interested in purchasing the workbooks (\$25 a piece) please contact me. Only a limited quantity are available, so act fast! DVD's of the entire program will be available for sale in May or June on the Clemson master Tree farmer website - www.clemson.edu/MTF. The cost will be approximately \$65.

Jennifer

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## How well do you know your trees?

By: Adam Downing Virginia Cooperative Extension

Humans have an innate curiosity about trees. We naturally recognize trees for the grand size many achieve and their longevity, with some species living hundreds of years. Trees have earned their place in American culture with sayings such as “strong as an oak” and place and street names galore. Yes, we respect trees, but do you know the ones that live closest to you?

The first step in getting to know your woods or trees a little bit better is to know their names. Is that an oak or a maple (genus level)? What exact species is it? Northern red oak or southern red oak?

Learning your trees (tree identification) can be a daunting task, especially in the Eastern United States where we have a rather wide variety of species. While there are hundreds of species in Virginia, fewer are common. Common Forest Trees of Virginia: How to Know Them (Virginia Department of Forestry, 2001) lists less than 80 different species. Of these 80 species, most areas contain fewer than half these; furthermore, probably 90% of the trees you encounter in your yard, street or woods, will be one of your areas ten most common species.

Tree id is like anything else... equipped with the basic terminology, a discerning eye (which comes with practice) and a good tree identification guide, you can become proficient at “knowing your trees.”

A good place to start is with the leaves. Most basic is determining if the leaves are needle-like (pines, spruces, firs, etc.), scale-like (juniper, cedar, etc.) or broad and flat (like most of our deciduous trees; Figure 1). Since most trees in this part of the country have broad and flat leaves, the next set of terminology relates to how those leaves are arranged. Most tree species fall into the **alternate** category with the leaves (and therefore the buds and branches too) arranged on the twig alternately from one-another. A few trees have leaves that are **opposite** each other on the twig (Figure 2).

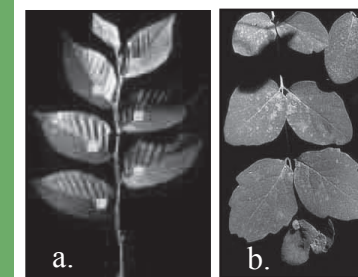


Figure 2.(a) Alternate leaf arrangement; (b) opposite leaf arrangement. Photos from: www.cnr.vt.edu/dendro.

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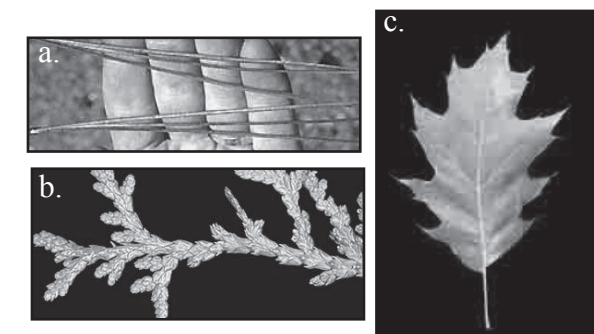


Figure 1. (a) needle-like leaves; (b) scale-like leaves; and (c) broad leaves. Photos from: www.cnr.vt.edu/dendro

“MAD Cap Horse” is a mnemonic someone came up with long ago to remember the main species with opposite arrangement: M for maple, A for ash, D for dogwood, Cap for Caprifoliaceae (viburnums) and Horse for horsechestnut (buckeye). Apart from a few relatively uncommon exceptions, this is a pretty good rule.

Another bit of leaf terminology is leaf type. Leaves may be **simple**, such as oaks, maples (except boxelder), tulip tree, sweet gum, beech, redbud and dogwood, or the leaves may be **compound** with more than one **leaflet** per leaf such as hickory, ash, walnut and buckeye (Figure 3).

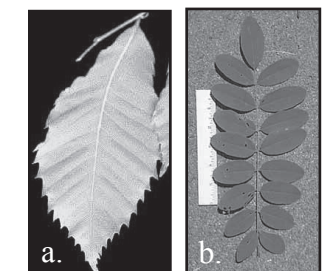


Figure 3. (a) A simple leaf; (b) a compound leaf comprised of multiple leaflets. Photos from: www.cnr.vt.edu/dendro.

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VIRGINIA FOREST LANDOWNER UPDATE

Events Calendar			For the most complete listing of natural resource education events, visit the on-line events calendar at <a href="http://www.cnr.vt.edu/forestupdate">www.cnr.vt.edu/forestupdate</a>		
Contact	Date	Location	Event	Time	Fee
DCR	May, June, July	Virginia State Parks	A variety of events and activities. For a complete listing visit: <a href="http://www.dcr.virginia.gov/parks">www.dcr.virginia.gov/parks</a>	Varies	Varies
GDS	May 11-13	Great Dismal Swamp	Great Dismal Swamp Birding Festival	All day	Free
NN	May 12	Lottsburg	Northern Neck Down on the Farm	9:00am-3:00pm	Free
AG	May 12	New Castle	2007 Farm Expo	10:00am-5:00pm	Free
TNC	May 19	Warm Springs	Warm Springs Mountain Biodiversity Hike **please pre-register**	1:00pm	Free
TR	May 17-19	Radford	Building Trails to a Greener Future: Linking the Economy, Healthy Communities and the Environment	All Day	Varies
MY	May 24	Augusta County	Forest Regeneration Field Tour **please pre-register by May 10th**	10:00am -3:00pm	\$20.00 *inc. lunch
CH	May 26	Meadows of Dan	Women in the Outdoors **please pre-register by May 19**	9:30am-4:00pm	\$50
JG	June 15	Blackstone	Forest & Farmland Conservation Strategies - for Professional Planners	8:30am-4:00pm	TBA
AD	June 15	Louisa Co. Ext Office	GPS Training for Forester and Loggers **please pre-register by June 6th**	9:30am-4:00pm	\$20.00
MY	June 22, 28	Rockbridge Co/ Steele's Tavern	Managing and Marketing for the Small Woodlot Owner	All day	TBA
TNC	June 23	Warm Springs	Warm Springs Mountain Forest Ecology Hike **please pre-register**	1:00pm	Free
AK	June 23	Luray	Jakes Event Youth Outdoor Education	All day	Call
AS	July 14	Hampton	Women in the Outdoors **please pre-register by July 7th**	8:30am	\$40.00
TNC	July 21	Warm Springs	Warm Springs Mountain High Elevation Hike **please pre-register**	1:00pm	Free
MY	August 1	Steeles Tavern	Shenandoah Valley AREC Field Day	Afternoon	Free

Event Contacts			
Contact	Name/Affiliation	Phone	e-mail/website
DCR	Department of Conservation & Recreation	804/786-1712	<a href="http://www.dcr.virginia.gov/parks">www.dcr.virginia.gov/parks</a>
GDS	Great Dismal Swamp	757/986-3705	<a href="http://www.dgif.virginia.gov">www.dgif.virginia.gov</a>
NN	Northern Neck	804/449-1118 or 804/333-1919	-----
AG	Angela Guthrie	-----	<a href="mailto:angela.guthrie@vafb.com">angela.guthrie@vafb.com</a>
TNC	The Nature Conservancy	540/839-3599	<a href="http://www.nature.org">www.nature.org</a>
TR	Tanya Ridpath	540-831-6037	<a href="mailto:tridpath@radford.edu">tridpath@radford.edu</a>
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AK	Art Kasson	540/622-6103	<a href="http://www.dgif.virginia.gov">www.dgif.virginia.gov</a>
AS	Angela Smith	804/264-4797	-----
BW	Bill Worrell - SW FNR Agent	276/889-8056	<a href="mailto:bworrell@vt.edu">bworrell@vt.edu</a>

If you have a natural resource education event you would like listed, please submit details to <a href="mailto:forester@vt.edu">forester@vt.edu</a> : Upcoming submission deadlines for calendar:					
Edition	Events Occurring	Submission Deadline	Edition	Events Occurring	Submission Deadline
Summer 2007	Aug., Sept., Oct.	June 9, 2007	Winter 2008	Feb., Mar., April.	Dec. 9, 2007
Fall 2007	Nov., Dec., Jan..	Sept. 9, 2007	Spring 2008	May, June, July	Mar. 9, 2008

## You Ain't From Around Here! Exotic Invasive of the Quarter: Japanese Stiltgrass (*Microstegium vimineum* (Trin.) Camus)

**By: Jennifer Gagnon, Virginia Tech Forestry Dept.**

*I will be featuring an invasive plant species in each newsletter. This section will provide resources to help you identify and control these plants and insects, hopefully before they become a problem!*

Japanese stiltgrass is a pest of many names, including Nepalese browngrass, Nepalese browntop, Asian stilt grass, Vietnamese stilt grass, Nepal microstegium, basketgrass and Chinese packing grass. As the last name implies, leaves of this species were used to protect porcelain shipped to the US from its native Asia (India, Nepal, China and Japan). It has also been used for basketweaving. The first known escape of the species was in 1919, near Knoxville, Tennessee. It is now found in 22 eastern states, including Virginia. The Nature Conservancy has reported Japanese stiltgrass as one of their worst weed problems!

This grass is well-adapted to shady environments and flourishes in disturbed areas (e.g., flood plains and along roads and trails). Disturbances such as mowing and tilling along roadways and power line rights-of-ways facilitate the spread, as well as hikers and their dogs. The seeds do not have any adaptations such as barbs or hooks, but are small enough to be picked up on shoes or fur. Since the species does well near waterways, floating seeds are a primary method of dispersal. Stiltgrass doesn't do well on bright sunny sites, or in standing water. One plant can produce up to 1000 seeds and these seeds can remain viable in the soil for up to 5 years!



Japanese stiltgrass blanketing the forest floor. Photo by: Chris Evans, UGA

Because of its ability to form dense ground mats, Japanese stiltgrass effectively reduces native plants by crowding them out. In as little as 3 years, the site can be completely overtaken by the grass. Stiltgrass may also change soil pH, making it unsuitable for some native species. While the dense mats provide excellent habitat for rats to hang out in, they have few other wildlife benefits.

### How to identify Japanese stiltgrass

**Plant:** Sprawling, mat-forming annual grass; upright to reclining stems up to 4 feet long

**Stems:** Branched

**Leaves:** Alternately arranged, long and thin, pale green, 2-4 inches long and less than 1 inch wide; white, off-centered mid-vein; slightly hairy on both surfaces, along edges, and at base. May develop a purple tinge in the fall.

**Flowers:** Slender stalks of white flowers bloom August to October,

**Seeds:** September to December; grain husked and ellipsoidal, yellow-reddish, 0.1 inch long

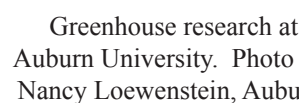
### How to control Japanese stiltgrass

Instigate control methods as soon as you spot this grass – early infestations are much easier to control than heavy ones! Also, try to minimize soil disturbance in areas free of this grass.

**Mechanical:** Shallow-rooted plants can be pulled up throughout the growing season; pulling or mowing in late summer, before seeds form, reduces seed buildup. Two caveats: 1. Be careful not to pull up native grasses which intermix with the stiltgrass and don't pull plants after seed has formed – you will be spreading the seeds! 2. If you mow, make sure it's late in the growing season; mowing earlier in the summer will give the plants sufficient time to regrow and will cause them to bloom and produce seed even earlier.

**Fire:** A late summer burn can help reduce the litter created by the grass, as well as reducing infestations. Again, do not burn early in the growing season or the plants will come back quickly!

**Chemical:** Apply 2% Glyphosate (Roundup® in dry areas, Rodeo® in wet areas) in a water solution (8 oz. herbicide per 3 gallons water) in late summer. Or, Apply Vantage (see label for recommended rates) to reduce herbicide impact on neighboring plants (if there are any).



Greenhouse research at Auburn University. Photo by: Nancy Loewenstein, Auburn.

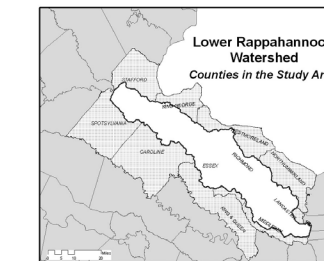
Miller, J.H. 2003. Nonnative invasive plants of southern forests. [www.tu.edu](http://www.tu.edu), Mandy. 2000. TNC - Species management Summary (ESA): Japanese stiltgrass. <http://tncweeds.ucdavis.edu>

Jennifer Gagnon is an Extension Associate in the Virginia Tech Dept. of Forestry. 540.231-6391 [jgagnon@vt.edu](mailto:jgagnon@vt.edu); Bob is an avid hiker, but is currently unemployed.

## VDOF Creates GIS Tool to Increase Riparian Buffers Protection in the Lower Rappahannock Watershed

Anna Cahoon, Virginia Dept. of Forestry, and Lucy Mallinak, Lower Rappahannock Watershed Initiative Coordinator

This winter, the Virginia Department of Forestry unveiled a Geographic Information Systems (GIS) tool that was created to classify riparian areas in the Lower Rappahannock Watershed. The tool enables local natural resource professionals to better serve landowners by offering a bird's eye view of the riparian areas on their property. With the GIS mapping tool, riparian areas unprotected by forested buffers are easily identified. Once identified, landowners have the option of entering into cost-share programs that assist with the planting of forested buffers and provide annual benefits for maintaining the buffers.



**The Lower Rappahannock Watershed:** The Lower Rappahannock Watershed covers 1,157 square miles in 11 counties of northern Virginia. The counties that have areas that fall in the watershed include Stafford, Spotsylvania, Caroline, King George, Westmoreland, King & Queen, Essex, Northumberland, Richmond, Middlesex and Lancaster and the City of Fredericksburg. Within this watershed study area, 14 percent of the area is covered in water compared to 4 percent of the Chesapeake Bay Watershed! The watershed was targeted for this GIS study because of its low participation in the state and federal riparian buffer programs as compared to other areas of the state as well as the potential for an effective concentrated effort of increasing riparian forested buffers.

**Riparian Forested Buffers:** The Chesapeake Bay program defines a riparian forested buffer as...“An area of trees, usually accompanied by shrubs and other vegetation, that is adjacent to a body of water which is managed to maintain the integrity of stream channels and shorelines, to reduce the impact of upland sources of pollution by trapping, filtering, and converting sediments, nutrients, and other chemicals and to supply food cover, and thermal protection to fish and other wildlife.”

**The Tool: The Lower Rappahannock Watershed (LRW)** tool was created to identify riparian areas in Lower Rappahannock River and its tributaries. Aerial photos taken in 2002 with high resolution were used to classify land use in riparian areas. The accuracy of this technology dramatically increased the value of the tool as older maps and aerial photos have much less accuracy. The area classified spanned a buffer of 100 feet around every water body, wetland, and stream in the watershed. The land cover classes helped to define what different areas were on the map. Examples of these classes are water, impervious surface, forest, grassland/pasture, cropland, barren, wetlands and recreational. County ownership data was applied as a layer onto the map.

Using a coordinated approach, the Virginia Department of Forestry, the Natural Resource Conservation Service, and local Soil and Water Conservation Districts can help identify and work with interested landowners who would like to enhance their properties with the planting of a riparian forested buffer. Through these buffers, landowners increase the water quality of their land, assist with statewide protection of water supplies, and increase the wildlife and aesthetic values.

The LRW tool can now serve as a model to be applied to watersheds across the state and beyond. The VDOF will evaluate the effectiveness of the model based upon the work of the 2007-targeted LRW initiative program.

**The Initiative:** The Virginia Department of Forestry (VDOF) hired Lucy Mallinak to serve as the Lower Rappahannock Watershed Initiative Coordinator for 2007. During this time, Lucy is assisting local natural resource professionals to apply the tool to practical field projects. Lucy is working one-on-one with the LRW-area VDOF county foresters, NRCS district conservationists, and local Soil and Water Conservation District specialists by assisting them to identify potential buffer projects. She is facilitating collaboration amongst the various agencies to establish, restore and preserve forested riparian buffers in the LRW.

The success of this project is a product of the cooperative effort among the agencies involved in the initiative; however, the Chesapeake Bay Foundation provided the funding that made the creation of this tool and hiring of a coordinator possible.

**Conservation Reserve Enhancement Program- CREP:** The Conservation Reserve Enhancement Program is a cost-share program that is administered by NRCS. The district conservationists in each county can help landowners determine eligibility and to enter the program. VDOF area foresters can assist landowners by making recommendations on tree species selection, planting specifications, and can assist with ordering or scheduling the buffer to be planted.

The riparian forested buffer practice typically plants various hardwoods at 110 trees per acre with tree tubes and will now allow a limited number of pine shelter trees to be planted. The CREP contracts tend to last 10 or 15 years and eligible lands include pasture and cropland adjacent to streams, intermittent streams, seeps, springs and ponds.

CREP is a program of the 2002 Farm Bill. This Farm Bill will terminate Dec. 31, 2007. This may be the last year to sign up for the riparian forest buffer plantings that offer landowners a great deal to increase their buffer size and to establish new buffers. This