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VIRGINIA FOREST LANDOWNER UPDATE

Events, news, and information promoting the stewardship of Virginia's forest resources.

VIRGINIA FOREST LANDOWNER EDUCATION PROGRAM

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INSIDE

Deer Management on Private Lands

Jay Jefferies, ***Virginia Department of Game and Inland Fisheries***

Deer management throughout Virginia has been successful in reestablishing a wildlife resource that at the turn of the 20th century was near extirpation. Today in Virginia we estimate our deer population to be approximately 1,000,000 animals. Our deer management today is guided by *Virginia's Deer Management Plan*, which prescribes a deer population goal for all regions in the state.

As listed in *Virginia's Deer Management Plan* the management goals for the majority of the state are to stabilize or decrease deer populations. It should be noted that population management goals were established from input of citizen stakeholders across the state and is not a management decision handed down from the Game Department. This process of stakeholder involvement is true for all regions of the state in prescribing deer population goals. In fact, Virginia's Game Department has been a leader throughout the nation in implementing citizen involvement in directing deer population management. After all, our wildlife resources are publicly owned. The overall mission of the deer program is to manage the deer resource in the best long-term interests of the citizens of the Commonwealth.

The question many landowners have is how to effectively reduce their deer population. In a nutshell the answer is easy…. increase the number of does taken during the hunting season. However, reaching this goal of increased doe harvest seems to be easier said than done. The reason for this difficulty is due mainly to two misconceptions. First, many deer hunters are still resistant to killing does, because they believe their future deer hunting will suffer. Second, there is a belief that deer populations can be controlled by simply harvesting more antlered deer. **The only effective control of a deer population is through increasing hunting pressure on the female segment of the herd.**

Throughout most of Virginia the Game Department offers liberal hunting regulations for white-tailed deer. The hunting regulations currently in place will allow for hunters to do the job of deer management if appropriate emphasis is placed on the harvest of female deer. Essential to this process is good communication between landowners and hunters. Listed below are strategies that provide effective deer control if properly implemented by landowners.

Reducing Deer Populations on Private Lands

- Select hunters who agree to assist with your population reduction goal
- Name one hunter to the role of deer management coordinator
- Favor hunters who hunt archery, muzzleloader, and rifle seasons
- Adopt a "Earn a Buck" program: for every buck killed hunter must kill two does
- Enter into a Gentleman's Agreement where future hunting privileges depend on meeting current harvest objectives
- Require deer management coordinator to provide a written report of hunting season success
- Call on Game Department personnel for technical assistance
- Consider joining Game Department's DMAP program and enjoy the "no cost" benefits this program offers

***Jay Jefferies** is a wildlife biologist with the Virginia Department of Game and Inland Fisheries*

Virginia's Forest Resource Information Mapper

Mindia Brown, ***Virginia Department of Forestry***

The Virginia Department of Forestry (VDOF) collects and generates important spatial GIS information regarding the state's forest resource, such as map layers of forest cover, gypsy moth defoliation, woodland homes communities, dry hydrants, and the wildfire risk assessment. However, producing this information is not valuable unless VDOF staff and the public can use it. Thanks to funding from the US Forest Service, VDOF developed the Virginia Forest Resource Information Mapper (ForestRIM), a GIS application that takes advantage of the ubiquity of the Internet to:

•Provide VDOF staff and the public-at-large with easy access to forest resource information in the form of 100+ map layers
•Provide users with ability to view map layers by zooming to desired scales and areas
•Allow users to measure distance and area
•Give users the ability to query map layers, either spatially (e.g. *Show me all of the Woodland Homes Communities within 5 miles of a dry hydrant*) or by attribute (*e.g. Show me all of the Fire Incidents greater than 15 acres in size*)
•Allow users to make professional-quality map outputs with Title, Legend, Scale Bar, Map Comments, etc.
•Provide users with tools to add their own map annotations, such as points, lines, polygons and text (and for VDOF staff, the ability to upload GPS points).

VDOF employs the Internet as the delivery mechanism for this application to minimize software purchases and maintenance of multiple copies of GIS data. By developing this mapping application, VDOF can more effectively and

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EVENTS CALENDAR

For the most complete listing of natural resource education events, visit the online events calendar at: *www.cnr.vt.edu/forestupdate.* See also: *www.conted.vt.edu/forestry.*

event contact	date/ location	event/description *(preregistration required unless noted otherwise; TBA=to be announced)*	time	fee
JW	January 17 *Council, VA*	**Maps and Map Reading** Joint program for loggers and landowners. The topics covered will include where to obtain different types of maps, how to read soil maps, type maps, and topographic maps, and some time will be given to road layout as well. Emphasis will be on use of topographic maps. This course will be useful for hunters as well.	9am-12pm	no fee
EB KS	*Two locations and dates:* *Harrisonburg, VA:* Jan. 20, 27, Feb. 3, 7 *Lexington, VA:* Jan. 22, 29, Feb. 5, 7	**Woodland Options for Landowners** This course will provide forest landowners with the tools necessary to productively manage their forests for their own goals within the context of good forest stewardship. Course topics include: principles of sustainable forestry, management objectives and planning, forest management and ecology, and wildlife management. The final day of the course will be a field day discussing forest management practices on a local forest.	Tue. and Thur. classes: 6:30pm-9:30pm Feb. 7: 9am-1pm	$45 pre-registered $50 day of class
AD	*Two locations and dates:* *Manassas, VA:* January 24 *Charlottesville, VA:* February 7	**2nd Annual Woods and Wildlife Conference** The conference is a one stop shop for individuals, families, managers and other interested persons to learn about their woods, wildlife and other natural resources. The day will provide participants with multiple links to information, possible sources of financial assistance and a better understanding of the natural resources within their realm of influence. Our goal is to help landowners make "best decisions" for themselves, their land and society. A variety of topics will be presented to meet this goal including: Managing wildlife on large & small acreages, Alternative Income Opportunities, Selling Timber, Forest Aesthetics, Financial tools for Land Conservation, and Forest Health.	TBA	TBA
SC	January 27-30 *Raleigh, NC*	**Applied Silviculture for Sustainable Land Conservation and Production** The Annual Conference of the Appalachian region of the Society of American Foresters will explore the roles and opportunities for forestry in the expanding arena of land trusts, conservation easements, and working farms and forests. Forest landowners – non-industrial, industrial, and non-profit — will showcase actual examples of sustainable silvicultural practices in support of working forests on conserved land.	TBA www.ncforestry.org	TBA
SB	Feb. 3-Apr. 15 *anyplace (with internet connection)*	***Web-Based* Woodland Options for Landowners** The nation's first and only web-based course for forest landowners will be offered for the second time in February 2004. Designed for southeastern forest landowners, the course is conducted entirely online and is appropriate for new and veteran landowners alike. This six-module, 10-week course teaches landowners how to "read their land" to assess and manage their property. Topics include: family resource inventory; basic dendrology; sustainable forestry concepts; property deeds and boundary lines; maps, photos, and soil surveys; and forest ecology and management. Participants will interact online with a "mentor team" made up of a professional forester and veteran landowner from their region. Online registration begins November 2. To view the course syllabus or to register, visit www.vto.vt.edu of www.cnr.vt.edu/forestupdate (and click on "Courses").	anytime! www.cnr.vt.edu/forestupdate -or- www.vto.vt.edu	$60.00
JW	*Bland, VA: Feb. 9, Mar. 8, April 12 Abingdon, VA: Feb. 23, Mar. 22, April 26*	**Monday Forestry Series** This three part forestry series will be offered in two locations on Mondays in February, March an April. In Bland, the program will be on the second Monday and in Abingdon, the same topic will be covered on the fourth Monday. Topics covered will be: - February: Forest Protection: protecting the forest from theft, fire, insects and disease - March: Selling timber and forest products: How to set up a sale, collect bids, write a contract, and enforce contract provisions. - April: Regeneration and growing forests: Tree planting, natural regeneration after a timber harvest, thinning, and fertilization.	7pm-9pm	$4.00 per session $10 entire series
PT	February 21 *Tappahannock, VA*	**Sustainable Timber Marketing and Harvesting** Sustainable Timber Marketing and Harvesting is a comprehensive course on selling timber. Participants will learn about site assessment, timber products and values, market factors, harvesting methods and regeneration, best management practices to protect water quality, timber sale procedures and contracts, timber taxation, estate planning and conservation easements.	8am-4pm	$40

USING THE CALENDAR — For more information or to register for a specific event, identify the event contact (whose initials are to the left of the event), and refer to the *Event Contacts* information box (for example VT = Virginia Tech).

event contact	date/ location	event/description *(preregistration required unless noted otherwise; TBA=to be announced)*	time	fee
HH	February 24-25 *Blacksburg, VA*	**Timber Income Tax** This course provides you with a working knowledge of the major federal income tax aspects of timber resource management. Emphasis is on the implications of recent tax changes for timber investment, marketing and management planning, and information on federal income tax reporting. You will gain familiarity with each major area of federal income tax law, regulations, and administrative rulings that affect timber. Sample exercises are used to illustrate various tax problems and procedures. Ample time is provided for discussion, including a review of recent court decisions, IRS regulations and administrative rulings concerning timber businesses and investments. The current tax law changes will be incorporated.	*Feb. 24*: 8am-5pm *Feb. 25*: 8am-4pm www.conted.vt.edu/timtax	$325
NE	February 28 *State College, PA*	**Managing Runoff – Urban & Rural** The 2004 Keystone Coldwater Conference will promote the sharing of ideas and concepts regarding urban runoff, including the handling of stormwater and sewage and dealing with development and transportation; as well as rural runoff issues such as forestry, agriculture, mineral recovery, and dirt and gravel roads. The keynote speaker is Joe Armstrong, longtime Trout Unlimited activist and author of "Trout Unlimited Guide to Pennsylvania Limestone Streams." The speaker at the optional dinner after the conference is outdoor writer Marcia Bonta, who will give a presentation entitled, "An Appalachian Year."	TBA outreach.psu.edu/C&I/coldwaterconservation	$30
HM	March 3 *Woodbridge, VA*	**Workshop on Voluntary Wetland Restoration Opportunities** The main purpose of the workshop is to encourage voluntary wetland restoration and enhancement on private and public lands through the education of Virginia citizens on available technical and financial opportunities. Private landowners who are interested in a wetland creation, restoration, or enhancement project on their land can attend this workshop for some great information to facilitate projects and funding. Registration is required no later than February 25th, 2004.	9am-4pm www.acb-online.org	no fee
JW	March 27 *Stuart, VA* May 1 *Wise, VA*	**Logger and Landowner Field Day** This program will be informative for both loggers and landowners. The topics covered will be the basics of hardwood culture, Best Management Practices for water quality protection, and log grading for maximum value.	9am-3:30pm	TBA
SJ	March 24-26 *Point Clear, AL*	**Forest Landowners Conference** The 63rd Annual Conference of the Forest Landowners Association will be held at the Grand Hotel Marriott and Resort. Details on the meeting topic and agenda can be found at the Association website.	TBA www.forestlandowners.com	TBA

EVENT CONTACTS

for more information or to register for a specific event, please contact:

event contact	name/affiliation	phone	e-mail
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HH	**Harry Haney,** Virginia Tech Department of Forestry	540/231-5212	hhaney@vt.edu
HM	**Hadley Milliken,** Alliance for the Chesapeake Bay	804/775-0951	hmilliken@acb-online.org
JW	**Jim Willis,** Russell County Cooperative Extension	276/889-8056	jrwillis@vt.edu
KS	**Karen Stanley,** Virginia Department of Forestry	540/463-5253	stanleyk@vdof.org
NE	**Nancy Eckard**, The Pennsylvania State University	814/863-5100	
PT	**Pat Tyrell,** Tidewater Resource Conservation and Development Council	804/443-1118	pat.tyrell@va.usda.gov
SB	**Shawn Baker,** Virginia Tech Forestry Extension	540/231-6391	forester@vt.edu
SC	**Susan Cohen,** U.S. Forest Service	919/549-4079	scohen@fs.fed.us
SJ	**Scott Jones**, Forest Landowners Association	800/325-2954	sjones@forestlandowners.com

Correction

In the last issue of the *Forest Landowner Update*, an article on the field day at McCormick Farm was published which left out mention of the role of the Society of American Foresters in planning and the Virginia Department of Forestry in funding and assisting with that event. The financial support of the Department of Forestry made it possible for the event to be free of charge to attendees, and the assistance of personnel in preparing the harvest locations was critical to the success of the program. We apologize for this oversight.

Watersheds

Adam Downing, *Virginia Cooperative Extension*

"We never know the worth of water till the well is dry." *-- French proverb*

Without it we die. Too much of it can be destructive. Not enough of it and we struggle. Water wars in the west are commonplace. The Eastern half of the United States has historically been a water utopia. Early Europeans spoke of the plentiful, clean, and available water. It has pretty much always been this way in the mid-west and eastern United States, but it may not necessarily stay this way.

Increased populations, technologies, and higher per-capita demands have placed increased pressure on water resources. If this increased demand continues, coupled with continued land-use changes, fighting over water may be the headlines of tomorrow. Watershed management can help us avoid this morose end.

According to "The Dictionary of Forestry" (Society of American Foresters, 1998), a watershed is "a region or land area drained by a single stream, river, or drainage network." Every piece of land is part of a larger geographically defined area called a watershed. At the smallest unit, a watershed may drain into a small creek that sometimes has water and sometimes does not. This is called an "intermittent stream". In most cases, many intermittent streams empty into a perennial stream (containing water year around). This perennial stream would be a larger watershed unit. A larger yet watershed would be drained by a river into which many perennial streams, and even more intermittent streams empty.

A watershed, is simply an area that has one thing in common… the point to which it drains. An area within a given watershed may include parking lots, buildings, roads, sub-divisions, agricultural fields, forests or any other land use. The value of a watershed is directly related to land uses. As a rule of thumb, the more intense a certain area is used, the more it limits the watershed's ability to produce clean water. For example, water exiting a parking lot typically carries many pollutants left behind from automobiles. An agricultural field, depending on chosen management practices, may also contribute pollutants to waterways in the form of fertilizers (if over applied) or soil (if conventional tillage is practiced up to or near stream edges. Lawns are another serious source of water pollution resulting from over fertilization and little or no buffer left between a lawn and a creek. If these pollutants are close to a body of water, even a simple stream, water quality is diminished. The impact of this is far reaching.

Diminished water quality costs us all. Municipalities collecting water from an unhealthy watershed are faced with costly processes to make water potable again. Fish and other aquatic organisms which are dependent on water (aquatic) habitats suffer also. As some of these natural ecosystem components are lost or damaged, the problem compounds.

Ecosystems dominated by natural habitats clean water as part of their natural processes. When these natural processes are lost or impaired, we are forced to make costly investments that would otherwise be provided for free.

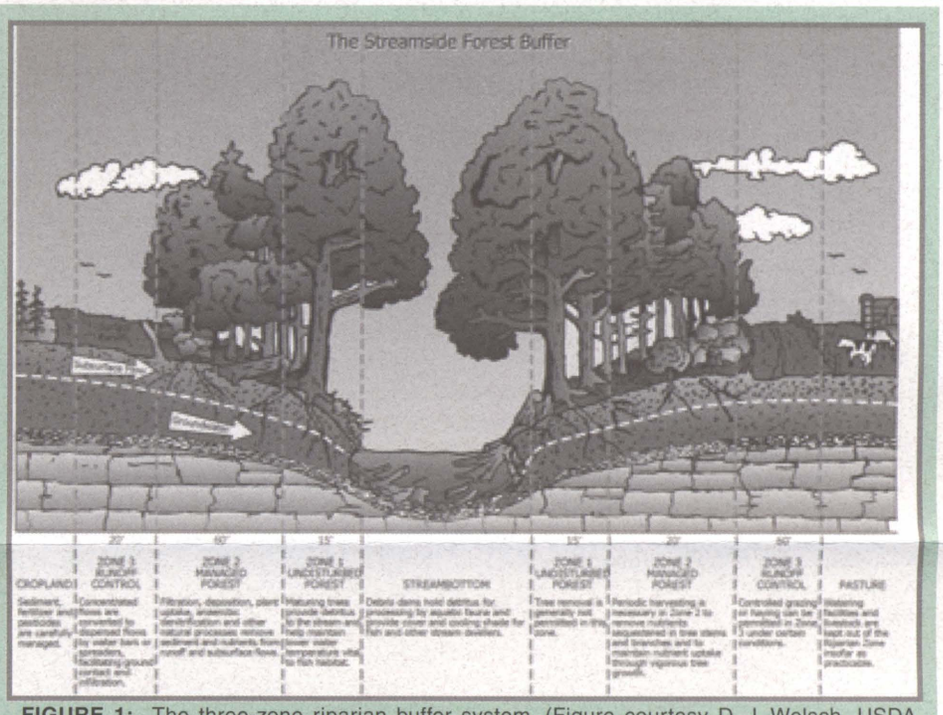

FIGURE 1: The three-zone riparian buffer system. (Figure courtesy D. J. Welsch, USDA Forest Service)

Forests are the most productive element of a watershed. A typical forest, hydrologically speaking, is a filter and a sponge. As rain falls on a forest, the leaf litter layer on the forest floor works to soak up the water, hold it in place so it doesn't run off and slowly (maybe over the course of many days) release some of that water to recharge ground and surface water supplies. As this water is slowly released, soil particles, organisms and organic matter filter out most impurities. Water coming from forested watersheds is the cleanest water available, and this is without any human inputs! Additionally, ground water and stream levels are more constant from a forested watershed. This also means the risk of catastrophic flooding downstream from heavily forested watershed is less.

While watersheds under the complete cover of forests are best for water quality and quantity, they are not always feasible, especially on the larger scale. However, some of the benefits forests provide over a whole watershed can be realized on a small but important part of the watershed as well.

"Riparian Buffers" – the hub of a watershed

An important element of a healthy watershed lies next to the water. Certain plant communities are very effective at "buffering" the potential negatives of adjoining land uses. Some riparian areas are an abrupt change from a stream to a lawn or driveway. These are a liability in terms of water quality and even quantity.

Riparian buffers are riparian areas functioning to buffer water bodies from potential pollutants. Pollutants such as sediment or nutrients headed toward a body of water with an effective buffer in place are trapped and stored in plant tissue or absorbed onto soil particles or modified by soil organisms.

So what does a riparian buffer look like? Most buffers are low maintenance areas, linear in shape and a certain width beyond water edge. There is some controversy as to what kind of vegetation community is best. Grass, shrubs and trees can all function as a buffer. In general, a mixture of these plant communities, much like a gradual edge for wildlife is good.

The ideal width of a buffer is one of the first characteristics that needs to be determined. In many instances of small acreage owners, the width may be limited to space available. In general the minimum width for a buffer is around 20 feet to meet bank stabilization, nutrient

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Introducing the Virginia Geospatial Extension Program

John Companion
Virginia Space Grant Consortium

Virginia Tech and the Virginia Space Grant Consortium have established the Space Grant Geospatial Extension Program in the College of Natural Resources at Virginia Tech's Blacksburg campus. The program will facilitate educational programs and workforce training to help deal with the serious shortfall of professionals and trained specialists who can utilize geospatial technologies at the local, regional, and state levels.

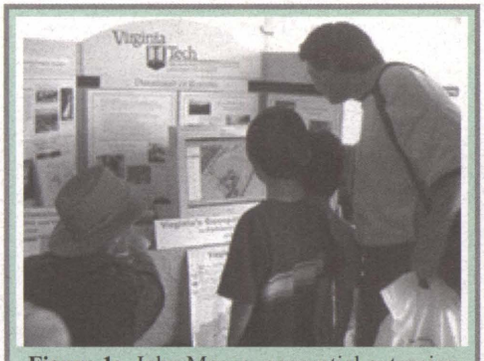

Figure 1: John Mcgee, geospatial extension specialist, demonstrates GIS use at the Farm and Family Showcase

"The key goal is to expand opportunities for citizens and organizations across the Commonwealth to apply geospatial tools such as geographic information systems (GIS), global positioning systems (GPS), and remote sensing data, analysis and interpretation to help with local needs," says Steve Umberger, director of the Virginia Cooperative Extension. The program will also work with educational outreach programs for pre-college teachers and students through 4-H and VSGC educational programs.

The worldwide market for geospatial technologies, which is currently estimated at $5 billion, is projected to have annual revenues of $30 billion by 2005, according to a NASA 2001 report.

Geospatial tools such as GIS allow users to precisely define any location on the face of the earth and then to add layers of information to describe what is at that location. It is a way to combine data from many sources about a specific area and to display it in a map format.

Agricultural uses of GIS include property boundaries, crop and soil analysis, precision farming, and management. City and state planners use GIS to decide where to put new roads and developments and how they will affect the environment.

GIS is used for management of coastal resources, homeland security, and law enforcement. Ultimately, GIS technology provides a basis for better understanding and improved stewardship of natural resources and public services. It also provides important decision making tools to enhance the economy and quality of life.

The new program is funded through a NASA grant through the Virginia Space Grant Consortium based in Hampton. Virginia Tech and the George Mason University-led VAx-MAGIC initiative are also providing substantial resources. Supported by NASA's Stennis Space Center, VAx-MAGIC works to provide tools and training that apply NASA data to specific problems.

John McGee has been hired as the geospatial Extension specialist at Virginia Tech to serve as a statewide resource for Extension agents, state agencies, local governments, and other end users. He will be organizing workshops to help them learn how to apply geospatial technologies and data to solve local problems. McGee says, "The Extension agents will be our key link to local community needs."

"The program is part of a NASA National Space Grant Program initiative that has established programs in ten other states besides Virginia," explains Mary Sandy, Virginia Space Grant Consortium director. "Other supporters include the Virginia Community College System, Virginia Sea Grant, and the Virginia Geographic Information Network."

Virginia Tech partnering organizations include the university's Department of Forestry in the College of Natural Resources, and the College of Agriculture and Life Sciences. NASA Langley Research Center, NASA Goddard Space Flight Center and NASA Stennis Space Center are participating on the project's Advisory Committee. "All of the partners," says Sandy, "share the vision of how geospatial data and tools can improve resource management and yield economic and social benefits."

McGee, who holds a Ph.D. from the University of Massachusetts in regional planning, has worked with several Extension and outreach projects in the United States as well as internationally. He served as the assistant coordinator with the Virginia Geographic Information Network, the lead public agency in the Commonwealth for spatial data and GIS. McGee has held a faculty position at Eastern Kentucky University, organized geospatial workshops for local professionals, and most recently taught at the International School in Addis Ababa, Ethiopia.

Paige Baldassaro, the program's geospatial applications developer, previously worked at The Institute for Scientific Research, Inc., in Wheeling, West Virginia. She is experienced in integrating virtual reality and high-resolution geospatial data and using hyperspectral remote sensing data to identify pollution pathways. Baldassaro holds master degrees in geology and geography from Virginia Tech.

Part of NASA's National Space Grant College and Fellowship Program, the Virginia Space Grant Consortium is a coalition of Virginia universities, NASA centers, state agencies, and other organizations with an interest in science and technology education and research. For additional information, contact the Virginia Geospatial Extension Program at jmcg@vt.edu or visit the program's Web site at www.cnr.vt.edu/gep. For more information on the Virginia Space Grant Consortium, visit www.vsgc.odu.edu.

John Companion is the Research Programs Manager for the Virginia Space Grant Consortium.

ForestRIM, continued from page 1

efficiently share tools and information in a way that is tailored to its internal users, as well as to external customers. In fact, ForestRIM is part of a larger agency goal to overhaul how information is collected, managed, and distributed by VDOF. Specifically, ForestRIM provides people with the ability to examine the spatial relationships between features, such as the number of residential communities in zones of high wildfire risk or the pattern of population growth across the landscape and how it relates to forest lands. Most importantly, ForestRIM gives people a tool for better, more informed decision-making. Map layers for ForestRIM include:

- High-resolution aerial photography (mid-1990s and 2002)
- USGS Topo Quads
- Wildfire Risk Assessment
- Woodland Homes Communities Locations
- Dry Hydrants Locations, Fire and Rescue Locations, VDOF Offices
- Forest Cover derived by VDOF from satellite imagery and Forest Inventory and Analysis data
- Conserved Lands, Riparian Buffers, Forest fragmentation, and forest health maps
- Roads, Airports, Hospitals, Public Schools, Railroads, Bridges, Tunnels
- Waterways, Waterbodies, Watersheds, Public Drinking Water Source Areas
- Jurisdictional Boundaries

For more information about ForestRIM, please visit the VDOF web site at www.vdof.org and click on "GIS" Virginia Department of Forestry.

Mindia Brown is the GIS Manager for the Virginia Department of Forestry.

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removal, flood control, and wildlife habitat goals. The wider the better, all the way up to 300 feet. Some of the variables to factor into your situation is soil type and stream size. Finer soils and larger streams call for wider buffers. If you are not able to provide as wide a buffer as might be called for, remember that something is better than nothing.

In some cases, establishing a buffer involves nothing more than to stop mowing. In other cases, you may want to plant trees, shrubs and grasses native to the site. If you have cases of severe "cutting under" (i.e., where the stream is cutting under the bank causing stream bank collapse) it may be prudent to initially stabilize the bank with various materials and methods such as rock riprap or tree & shrub cuttings as live stakes.

In addition to keeping waters clean, forested buffers keep water cool. Cooler waters have higher oxygen contents, healthier macro-invertebrate populations and are more likely to support native fish populations as well. Natural riparian areas in the eastern United States are among the most productive biological systems in the world.

Most of these riparian areas are in the hands of private landowners. If you own land adjacent to water, not only do you hold a unique ecological area, but you also have an opportunity and responsibility to see that the riparian area is well vegetated with a variety of plants. For more information on riparian forest buffers, request the "Understanding the Science Behind Riparian Forest Buffers" series from your Virginia Cooperative Extension office or access them online at: http://www.ext.vt.edu/resources/ and clicking on the Forestry, Fisheries & Wildlife button.

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For a complete listing of the natural resource management agencies in your county, visit the *Assistance Finder* at: ***www.cnr.vt.edu/forestupdate*** and click on "Assistance."

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