

Virginia's Quail Action Plan: Helping Landowners Restore Northern Bobwhite Quail Habitat
By: David Richert, Virginia Department of Forestry

As a member of the Virginia Department of Forestry team, I frequently recommend landowner participation in a variety of natural resource management cost-share and incentives programs. These programs encourage Virginia's private landowners to sustainably manage forest resources, stabilize soil and reduce erosion, improve water quality, conserve land, and create or maintain high quality wildlife habitat. In the past year, I found myself on the opposite side of the coin, as a private landowner on the receiving end of expert technical advice and generous financial incentives. The following is an account of my personal involvement in a recently established incentive program through Virginia's Quail Action Plan.

My wife and I own a small parcel of land in Wythe County, of which 13 acres is open pasture land—a mix of mostly fescue and other cool season-type grasses. Although fescue is not without its merits, fescue and many of the cool season-type grasses form a thick sod that is virtually impenetrable to Northern bobwhite quail, and is generally considered to be of lower value for wildlife. Our aim was to attempt to replace the fescue with something a bit more wildlife-friendly.

Enter the Virginia Quail Action Plan, a comprehensive plan to reverse the declining numbers of Northern bobwhite quail in Virginia by addressing habitat loss and degradation. Among other goals, Virginia's Quail Action Plan seeks to establish quail and early succession wildlife focus areas throughout Virginia. Six pilot quail focus areas are currently underway across the Commonwealth, in partnership with Soil and Water Conservation Districts (SWCDs). Participating SWCDs include Three Rivers, Chowan Basin, Halifax, Culpeper, Headwaters, and Big Walker. Fortunately for us, we were eligible to enroll our 13 acres of fescue pasture into the program because Wythe County is part of the Big Walker SWCD quail focus area.

These pilot quail focus areas provide landowner incentives for choosing pasture/land management practices that favor quail and other early successional wildlife. Under this program, landowners can receive incentive payments for establishing field borders, managing idle land as early successional habitat, and converting fescue pasture to native warm season grasses. Although participating landowners commit to following particular management guidelines, participating land does not necessarily have to be completely removed from agricultural production.

We chose to replace our fescue pasture with native warm season grasses. Native to Virginia, these grasses offer a number of benefits for both wildlife and agricultural production. From a quail management perspective, native warm season grasses are preferable to cool season grasses because they do not form an impenetrable turf, but instead form small bunches (clumps) that provide excellent escape cover for young quail chicks. (A variety of publications are available online and in print on the benefits of native warm season grasses for wildlife and forage—visit <http://www.dgif.virginia.gov/quail/beyond-the-food-patch.asp> for details).

The establishment process started more than a year ago, the fall prior to planting. The existing cover of fescue was bush-hogged in mid-September, just as the hot summer temperatures were starting to subside. In early October, once the fescue had added several inches of lush regrowth, the field was treated with herbicide (32 ounces of glyphosate per acre). Our goal was to eliminate the fescue sod and create some bare soil for sowing the native warm season grasses in the following spring.



The following April the results of our herbicide treatment were apparent. As the neighboring fescue fields turned bright green, our field stayed brown, and a quick evaluation with a shovel indicated that the kill had gone clear to the roots. A controlled burn (after 4 p.m. to comply with Virginia's 4 p.m. Burn Law) in late April cleaned off the remaining thatch, leaving a seedbed nearly ready for planting. A second herbicide treatment (12 ounces of Imazapic and 16 ounces of glyphosate per acre) in early May was applied to help eliminate any other vegetation and ensure successful establishment of the native warm season grasses.



First year warm season grass seedlings mid-summer (top) and late summer (bottom). Photos by: David Richert, VDOF.

The waiting process was slow, and my patience was tested. Despite several long periods without rain, we were fortunate to receive adequate moisture to successfully germinate the stand.

VIRGINIA FOREST LANDOWNER UPDATE

Winter 2011
 Virginia Cooperative Extension
 Department of Forest Resources &
 Environmental Conservation (0324)
 Virginia Polytechnic Institute and State University
 Blacksburg, Virginia 24061
RETURN SERVICE REQUESTED

NON-PROFIT ORG.
 U.S. POSTAGE
PAID
 BLACKSBURG, VA
 24060
 PERMIT # 28

Useful resources

- It's almost tax season. Visit www.timbertax.org for all the information you need on preparing your timberland taxes. The United Nations General Assembly has declared 2011 as the International Year of Forests. Visit: <http://www.un.org/en/events/iyof2011/> to get involved.
- Interested in making charcoal from hardwood on your property? Find out more at: <http://www.forestry.vt.edu/charcoal/makingresources.html>.
- If you are an avid wildlife watcher and want to share your sightings with others, participate in the Virginia Department of Game & Inland Fisheries Wildlife Mapping Program. <http://www.dgif.virginia.gov/wildlifemapping/>.
- Nonnative Invasive Plants of Southern Forests has been updated and reprinted. Order your free copy from the USDA Forest Service: <http://www.treesearch.fs.fed.us/pubs/5424>.

CONTACT OUR SPONSORS AND STATE NATURAL RESOURCE MANAGEMENT AGENCIES:



Virginia Department of Forestry	Virginia Tech Department of Forest Resources & Environmental Conservation & Virginia Cooperative Extension	Virginia Forestry Association	Virginia Tree Farm Committee
900 Natural Resources Drive Ste. 800 Charlottesville, VA 22903 434/977-6555 www.dof.virginia.gov	228 Cheatham Hall 0324 Blacksburg, VA 24061 540/231-6391 www.cnre.vt.edu/forestupdate	3808 Augusta Ave Richmond, VA 23230 804/278-8733 www.vaforestry.org	3808 Augusta Ave Richmond, VA 23230 804/278-8733 www.vaforestry.org/virginia_tree_farm.html

Virginia Tech **Virginia Cooperative Extension** **VSU**
Invent the Future *A partnership of Virginia Tech and Virginia State University* *www.vce.vt.edu*

This publication is supported by matching grant funds from the Virginia Forest Stewardship Program administered by the Virginia Department of Forestry in cooperation with the USDA Forest Service.

VIRGINIA FOREST LANDOWNER EDUCATION PROGRAM

Jennifer L. Gagnon, Editor
 Address all correspondence to: Virginia Forest Landowner Update
 228 Cheatham Hall (0324)
 Blacksburg, VA 24061
 ph: 540/231-6391; fax: 540/231-3330
 e-mail: forester@vt.edu
www.cnre.vt.edu/forestupdate

Virginia Forest Landowner Update is published four times per year (January, April, July, and October) by the Virginia Forest Landowner Education Program. Circulation 4,000.

Subscriptions are free of charge to citizens of the Commonwealth of Virginia and non-resident Virginia forest landowners. Subscriptions to other non-Virginia residents at the discretion of the publisher.

Printing and distribution cost is approx. \$1/subscription per year.

INSIDE

1 Edible and Woody Floral Agroforestry Riparian Buffers

2 Events Calendar

3 You Ain't From Around Here! Exotic Invasive of the Quarter: Giant Hogweed

5 Virginia's Quail Action Plan: Helping Landowners Restore Northern Bobwhite Quail Habitat

Friend VFLEP on Facebook! Search for Virginia Forest Landowner.

Sign up to receive the Virginia Forest Landowner Update at: www.cnre.vt.edu/forestup-date

Edible and Woody Floral Agroforestry Riparian Buffers
By: Katie Trozzo & John Munsell, Virginia Tech; James Chamberlain, USDA Forest Service; Christy Gabbard & Kim Thurlow, Catawba Sustainability Center

Riparian buffers are streamside zones critical for water quality, soil retention, and habitat. Traditionally, these areas are devoted solely to conservation and planted with trees and shrubs. This method benefits the watershed as a whole, but does not fully account for the landowner's potential loss of productive land.

Edible and woody floral agroforestry riparian buffers offer landowners the opportunity to obtain products such as fruits, nuts, and woody floral stems from these riparian areas while still conserving water, soil, and habitat. Native woody plants with edible products include: black raspberry, persimmon, black walnut, pawpaw, blueberry, or basically any tree, shrub or vine which produces fruits or nuts. Native woody floral plants include trees, shrubs, and vines with colorful, twisting, or flower-laden twigs used in floral arrangements, such as curly willow, pussy willow, witch-hazel, and red maple. Both edible and floral plants have economic value and ready markets.



The typical structure for an agroforestry riparian system is to plant fast-growing and flood-tolerant species in the first zone (15 feet from the stream bank). These species are not meant for production; instead their main purpose is to provide erosion protection, water quality enhancement, and habitat modification. The second zone is upslope from zone 1 and is a 60-foot managed buffer, where woody edible and floral plants can be grown. The third zone is a filter strip of grasses up to 20 feet wide, which can be grazed, hayed, or periodically mowed.

USDA 3-Zone Riparian Buffer Planning Model. Image from The Virginia Outdoors Foundation.

A demonstration of a native woody edible riparian buffer was planted in the fall of 2010 along with an edible roadside planting at the Virginia Tech Catawba Sustainability Center in Catawba, Virginia (www.vtrc.vt.edu/catawba). Catawba community members, VT Corps of Cadets, and VT students volunteered during the planting day. Another section of the Center's riparian buffer was planted in native woody florals in the spring of 2011. These projects were funded by the USDA National Agroforestry Center (www.unl.edu/nac).



Volunteers plant and mulch a serviceberry tree. Photo by: Courtney Kimmell, Virginia Tech.

The Catawba Sustainability Center (CSC) is a showcase for university education and engagement with the local community – a place to practice, demonstrate, learn, and teach about sustainability issues that affect our world today and into the future. The CSC is an ideal place to demonstrate the economic and environmental benefits of these plantings. These plantings will continue to serve as a learning tool for faculty and students as they conduct further research and engage with the local community on the benefits, adoption, and implementation of these practices. A testimonial demonstrates a community member's view of the project:

"As a resident of the Catawba Valley and a member of Catawba Landcare (www.Catawbalandcare.org), I am always on the lookout for projects that will not only improve the health of our land but also the Catawba Valley community. By participating in the Edible Riparian Planting at the Catawba Sustainability Center I felt that I could both contribute and learn in ways that would benefit the Catawba Valley."
 -Rob Guiles-

Edible and woody floral agroforestry riparian buffers provide a viable option for landowners interested in conserving their riparian areas while maintaining a source of production and revenue. For more information, please contact Katie Trozzo.

Resources
 USDA National Agroforestry Center: www.unl.edu/nac; VT Catawba Sustainability Center: www.vtrc.vt.edu/catawba
 Association for Temperate Agroforestry: <http://www.aftaweb.org/>
 USDA NAC information on Conservation Buffers: <http://www.unl.edu/nac/bufferguidelines/>
 Virginia Department of Forestry Publication on Riparian Forest Buffers: <http://www.dof.virginia.gov/wq/resources/pub-rfb-forests-on-waters-edge.pdf>

Katie Trozzo is a graduate student in the Department of Forest Resources & Environmental Conservation, katie.trozzo@gmail.com; John Munsell is an Assistant Professor in the Department of Forest Resources & Environmental Conservation, jfmunsel@vt.edu, 540/231-1611; James Chamberlain is a Research Scientist, 540/231-3611, jchamberlain@fs.fed.us; Christy Gabbard is the Director of the Catawba Sustainability Center, 540/767-6114, cgunnells@vt.edu; Kim Thurlow is the Assistant Director of the Catawba Sustainability Center, kthurlow@vt.edu.

EVENTS CALENDAR			For the most complete listing of natural resource education events, visit the on-line events calendar at www.cnre.vt.edu/forestupdate		
Contact	Date	Location	Event	Time	Fee
DCR	April, May & June	Virginia State Parks	A variety of events and activities. For a complete list, visit: www.dcr.virginia.gov/parks	Varies	Varies
MP	Year-round	State-wide	Virginia Master Naturalist Volunteer Basic Training www.virginiamasternaturalist.org/chapters.html	Varies	Varies
PS	Jan. 11	On-line	Herbicides and Forest Vegetation Management On-line webinar highlighting forestry herbicide applications, products, and treatment guidelines for controlling exotic invasive species.	Noon & 7 p.m.	Free
RS	Jan. 18	Smithfield	Tomorrow Woods Estate Planning Workshop If you own land in the counties of Dinwiddie, Isle of Wight, Prince George, Southampton, Surry, Sussex or the city of Suffolk, the Tomorrow Woods Program can help you conserve, establish and enhance your working forests. Learn how long-term estate planning can help you to ensure your land is protected for future generations.	9:30 - 3:30	\$10*
JG	Feb. 14	On-line	On-line Woodland Options for Landowners Registration opens Dec. 15; class begins February 14. Learn the basics of forest management, from setting goals and objectives to developing a management plan in this 12-week class. A cadre of natural resource professionals serve as mentors to answer questions and guide students. View syllabus at www.cnre.vt.edu/forestupdate .	NA	\$40/family
AD	Feb. 19	Charlottesville	8th Annual Woods & Wildlife Conference Join Virginia Cooperative Extension for a full day of presentations and workshops geared to help both large and small acreage landowners become better stewards. This year's topics will be organized into three thematic tracks: Invasives, Profitability and Conservation.	8:30 - 4:30	\$45/person; \$80/couple*
JF	Feb. 24	Lynchburg Area	Investing in Sustainable Forestry: What Landowners Should Know About Water Quality & Best Management Practices Learn what you can do to keep your forestland sustainable. This program will focus on water quality and how best management practices can be used to protect and enhance it.	9 - 3	Free*
JF	April 1	Lynchburg	Spring Venture Outdoors Program From tree identification, to thinning, to forest health issues, to wildlife management, this program has it all. A great introduction to forest management for new landowners. All participants will receive a shiitake mushroom log.	9 - 3:30	\$10/person; \$15/hsehold*
GP	April 7-10	Williamsburg	VFA/SAF/ACF Joint Annual Meeting For foresters, loggers and landowners. Category 1 CFE Credits available.	All day	\$140*
JF	May 6	Lynchburg	Spring Venture Outdoors Program See above description.	9 - 3:30	\$10/person; \$15/hsehold*

*Registration includes meal(s)

EVENT CONTACTS

Contact	Name/Affiliation	Phone	e-mail/website
DCR	Department of Conservation & Recreation	804/786-1712	www.dcr.virginia.gov
MP	Michelle Prysby	434/872-4580	www.virginiamasternaturalist.org
PS	Penn State Natural Resources Extension	http://rmrext.cas.psu.edu/PAForestWeb/upcomingseminars.html	
RS	Rob Suydam	804/328-3031	robert.suydam@dof.virginia.gov
JG	Jennifer Gagnon	540/231-6391	jgagnon@vt.edu
AD	Adam Downing	540-948-6881	adowning@vt.edu
JF	Jason Fisher	434/476-2147	jasonf@vt.edu
GP	Glenda Parrish	804/278-8733	gparrish@vaforestry.org

You Ain't From Around Here! Exotic Invasive of the Quarter: Giant hogweed (*Heracleum mantegazzianum*) By: Jennifer Gagnon, Virginia Tech

There are many things I haven't seen in the woods which I would like to see. Like a black bear, or a porcupine (as long as neither hurts my dogs). But one thing I sure DON'T want to see is a certain member of the carrot family, the giant hogweed. This is one carrot you don't want to eat, people. According to the USDA's PLANTS Database, this species is not yet established in Virginia; but other sources suggest that it is. Either way, this article should serve both as a warning and an incentive – let's not allow giant hogweed to gain a foothold in the Commonwealth.

Giant hogweed is a native of the Caucasus Mountain region between the Black and Caspian Seas. It was introduced to Europe and the United Kingdom in the late nineteenth century and to the United States in the early twentieth century as an ornamental garden plant. In the U.S. it is currently found in Maine, Pennsylvania, Connecticut, Maryland, New York, Michigan, Illinois, Washington and Oregon. Hogweed is also a problem in Canada and Europe.

This biennial or perennial herb can grow to 12 feet or more. Plants take 3-4 years to bloom and produce seeds. Some plants will die after flowering, while others will continue to flower for several years. Growth occurs in open sites with abundant light, as well as in woodlands and forest edges. Hogweed prefers unmanaged sites, vacant lots, along railways, creeks and streams. In addition, it is resistant to frost and can withstand occasional flooding.

Giant hogweed is an aggressive competitor. Because of its size and rapid growth, it out-competes native plant species, shading them out and resulting in bare ground underneath. In the winter, hogweed plants die back, leaving bare ground which can increase soil erosion on riverbanks and steep slopes.

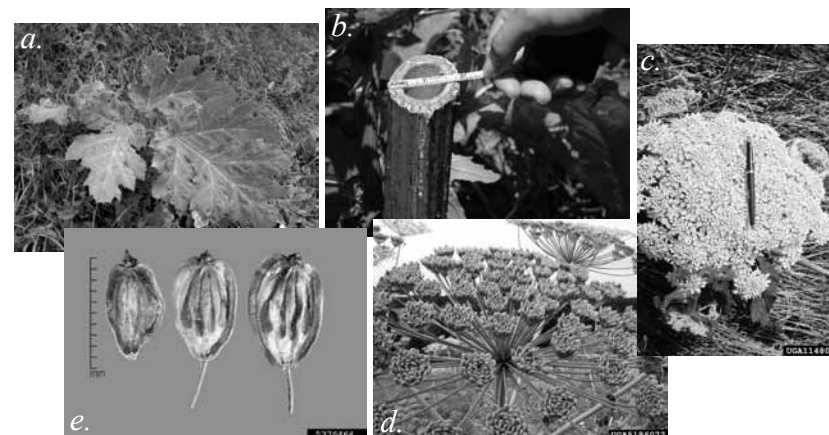


Blisters caused by exposure to the sap in giant hogweed. Photo by: USDA APHIS PPQ Archive.

But really, that's not the biggest threat. The biggest threat is to our own skin. The sap of this plant, which is present in all of its parts, contains photosensitizing furanocoumarins. Now, if you're like me, you've never heard of such things. So I looked them up. Apparently, they are coumarins with a curan ring. Oh, still not helpful? Well, basically, these substances have a molecular structure which allows them to absorb ultraviolet photons, store them for a bit, and then release them all at once to the skin, causing the equivalent of a severe sunburn. Sweat and moisture can enhance the skin reaction. Since giant hogweed grows outside (not a good choice for a houseplant!), if you come in contact with its oils, chances are, you are also in contact with sunlight (and ultraviolet photons) and you may very well be sweaty. A bad combination. Skin reactions vary, but phytophotodermatitis can occur; symptoms include painful blisters, which become darkly pigmented and can cause scars which last up to 6 years (effectively ruining a modeling career). Your skin can remain sensitive to sunlight for many years after exposure as well. And, if the sap gets in your eyes, there is the potential for blindness. Have I convinced anyone to plant this species in their yard?

How to identify giant hogweed

- Leaves:** compound with 3 deeply lobed leaflets; up to 5 feet wide; stiff dense stubby hairs on undersides; spotted leaf stalks.
- Stems:** stout (2-4 inches in diameter), dark reddish-purple; hollow; covered with stiff, dense, stubby hairs.
- Flowers:** white umbrella-shaped clusters; up to 2.5 feet in diameter; mid-May to mid-June.



Photos, clockwise: leaves, stem, flowers, unripe fruits, ripened seeds. Photos by: Jan Senanek, State Photosanitary Administration (a & d), Leslie J. Mehrhoff, University of Connecticut (b), USDA APHIS PPQ Archive (c) and Julie Scher, USDA APHIS PPQ (e).

How to control giant hogweed

Before you embark upon a control program, please take care to protect yourself and others working with you. Never touch any part of the plant with your bare skin. Wear long, waterproof gloves, boots and eye protection. Work a good distance away from others, as the sap can splash 3-4 feet. Apply sunblock before working; wash all exposed clothing and equipment immediately. Do not use a weed whacker or brush cutter, which may cause splatters. If you do get sap on your skin, wash the area immediately with soap and cold water; keep the exposed area out of sunlight for at least 48 hours. See a doctor if you have a reaction. Do not burn or compost harvested plants.

Mechanical

- Cut or dig up roots – labor intensive, but effective. Good for small infestations. Taproots should be cut about 6" below ground level. Best done in early spring.
- Hand pull – best for young plants (in April-May).
- Remove flowers and dispose. Needs to be done after the seeds have formed, but before they mature. Place seed heads in double or triple trash bags. Seal and place in the sun for at least a week. Dispose of bagged seed heads in the garbage.
- Plowing – best method of mechanical control. Must be repeated for several years. Deeply plow in the fall. Clean equipment before moving to a non-infested area.

Chemical

Herbicides with the active ingredients glyphosate or triclopyr are effective for hogweed control. Triclopyr-based products will only affect broad-leaved plants, so any grasses near the treatment area will not be harmed. Although glyphosate does not persist in the soil, it is not selective and will kill any surrounding vegetation. Apply herbicides between March and early June. A follow up application may be required in July or August. You will probably need to repeat the herbicide treatment for a few years to completely control hogweed. As always, when using herbicides, you must follow the instructions on the label. The label is the law.

Biological

Cattle, sheep and pigs appear to tolerate the toxins in giant hogweed and will eat the plants. Grazing and trampling may help wear the plants down, but may not provide long-term control.

Follow-up

After removal, you may be left with quite a bit of bare soil. To minimize erosion and prevent reinfestation, promptly reestablish native vegetation on the treated sites.



Manually clipping the seed-heads. Note the eye and skin protection. Photo by: Thomas B. Denholm. New Jersey Dept. of Agriculture.

If I can say one positive thing about this species, it's that I enjoyed researching it. I'll leave you with the best piece of information I found: the band, Genesis, wrote a song called "Return of the Giant Hogweed". Here's an excerpt:

"Fashionable country gentlemen had some cultivated wild gardens,
In which they innocently planted the giant hogweed
throughout the land.
Botanical creature stirs, seeking revenge.
Royal beast did not forget.
Soon they escaped, spreading their seed,
Preparing for an onslaught, threatening the human race.

Mighty hogweed is avenged.
Human bodies will soon know our anger.
Kill them with your hogweed hairs.
HERACLEUM MANTEGAZZIANI!"

Listen to the entire song at www.cnre.vt.edu/forestupdate. Simply awesome!

Quail cont. from pg. 5

At first, very little top growth was evident, as these seedlings invested their energy in abundant root growth (a physiological feature that helps them resist drought). In late August, seemingly overnight, the native warm season grasses made significant upward growth, and some of the tallest big bluestem and indiagrass seedheads eventually measured in excess of 6 feet tall. It should be noted that these results are not typical, and that many native warm season grass plantings may take two to three growing seasons to achieve the same results.

Our experience with the incentives offered by Virginia's Quail Action Plan was positive. As this stand of native warm season grasses becomes fully established, we have the option to use this forage for grazing or for hay, provided we comply with program guidelines for timing and frequency of haying or grazing.

The establishment of native warm season grasses is just one of many habitat modifications that a landowner may choose to benefit Northern bobwhite quail. These habitat improvements can be especially beneficial to quail when established on a landscape scale—i.e., in conjunction with several or dozens of adjacent landowners. Virginia's Quail Action Plan partners anticipate that with successful habitat improvements such as this one, Virginia's population of Northern bobwhite quail will eventually stabilize at a robust number.

The Virginia Department of Forestry protects and develops healthy, sustainable forest resources for Virginians. Headquartered in Charlottesville, there are Forestry staff members assigned to every county to provide service to citizens of the Commonwealth. VDOF is an equal opportunity provider.

With nearly 16 million acres of forest land and more than 144,000 Virginians employed in the forest products industry, Virginia forests provide more than \$27.5 Billion annually in benefits to the Commonwealth.

Please contact the Virginia Department of Game and Inland Fisheries (www.dgif.virginia.gov/quail/) for more information about Virginia's Quail Action Plan.

David Richert is SW Virginia's RC&D Forester, david.richert@dof.virginia.gov 276/228-2879