

**Understanding the Science Behind  
Riparian Forest Buffers:  
Resources for  
Virginia Landowners**

**Virginia Cooperative Extension**



VIRGINIA STATE UNIVERSITY

The riparian area is that area of land located immediately adjacent to streams, lakes, or other surface waters. Some would describe it as the floodplain. The boundary of the riparian area and the adjoining uplands is gradual and not always well defined. However, riparian areas differ from the uplands because of their high levels of soil moisture, frequent flooding, and unique assemblage of plant and animal communities. Through the interaction of their soils, hydrology, and biotic communities, riparian forests maintain many important physical, biological, and ecological functions and important social benefits.

## **Understanding the Science Behind Riparian Forest Buffers: Resources for Virginia Landowners**

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Riparian forest buffers can provide many benefits to society through improved water quality, reduced flooding, reduced sedimentation of streams and reservoirs, and enhanced recreational opportunities. However, the cost of establishing and maintaining these buffers on private lands can be significant to the individual landowner. To help Virginia's landowners in their restoration efforts, the agencies of the commonwealth have agreed to work with individuals and communities in their efforts to restore streamside lands by providing education, technical assistance, and funding. They are joined in this effort by federal agencies and many non-profit conservation organizations.

## What Qualifies as a Riparian Buffer?

A riparian buffer is an area of land adjacent to a body of water that is managed to promote water quality, to provide habitat for fish and wildlife, and to benefit landowners and communities. The width of the buffer and the type of vegetation needed to provide these benefits are determined by local soils and hydrology and the objectives of the landowner.

Funding is available for landowners to help recover the costs of planting and maintaining riparian buffers. However, landowners usually must meet some minimum requirements in order to qualify for funding (for example, a particular buffer width, type of vegetation, and/or length of time the buffer must be maintained), and these requirements vary depending on the source of funding. In general, state and federal agencies in Virginia will fund the construction of riparian buffers that are at least 35 feet wide on one side of the stream. Grasses or trees may be planted in the riparian area; however, tree plantings are often given priority. Livestock usually must be excluded from the riparian area and the buffer must be maintained for a



Fig 1. Costs of installation may include fencing, site preparation, plant materials, tree protectors, weed control, and alternate water sources for livestock.

10- to 15-year period. Funding allows for planting buffers on one or both sides of the stream. Non-profit conservation organizations also offer funding for riparian plantings in Virginia, and often have different requirements to qualify for funding (for example, wider or narrower buffer widths).

## Costs to Landowners

Landowners incur costs both in buffer establishment and maintenance, as well as through the loss of revenues from those lands (Figure 1).

### Installation

Costs of installation may include the cost of plant materials, site preparation, weed control, and in some cases, fencing, stream crossings, and alternate watering sources for livestock (Table 1). The Natural Resources Conservation Service in Virginia estimates the average cost of planting a 50-foot-wide buffer of mixed hardwoods and warm season grasses at approximately \$155 per acre (U.S.D.A. Natural Resources Conservation Service 1997). If the landowner installs brush mats and tree seedling protectors, costs will be \$500 to \$800 per acre. Costs of site preparation will vary widely depending on the site conditions and vegetation present, but may include \$54 per acre for herbicide treatment, \$34 per acre to disk the area, and \$8 per acre to bush-hog the area. Annual maintenance costs include costs of replacing seedlings that have died, plus approximately \$16 per acre each year to mow the area, or as much as \$54 per acre to treat with an herbicide. Fencing, stream crossings, and alternate watering sites for cattle increase the cost significantly.

### Opportunity Costs

Besides the costs of buffer establishment and maintenance, there are additional costs incurred by the landowner. They include loss of income from land that is out of production, personal "utility" loss (for example, loss of view or access), and in some cases, reduced income from developing the land in the future (King and others 1997). Besides the losses on the riparian land, crop yields on adjacent fields may be reduced from shading, increased competition from trees for nutrients and moisture, increased difficulty in cultivating fields, and increased wildlife damage. Riparian areas may also be invaded by noxious weeds. Currently, deer damage results in losses of 6 percent to 12 percent of income to Maryland farmers (McNew and Curtis 1997).

The Virginia Division of Soil and Water Conservation initiated a study in 1998 to estimate the costs to farmers

of installing and maintaining a 50-foot wide riparian forest for a period of 15 years (Faulkner 1998). This study examined 15 counties in the Chesapeake Bay watershed and 15 counties outside the Chesapeake Bay watershed, and considered opportunity costs (loss of income from livestock or crop production), installation and annual maintenance costs, and transaction costs (cost to the farmer in time required to enroll in the program, create a management plan, etc.). The study found that the average cost to the

landowner to install and maintain a riparian forest buffer in Virginia for a period of 15 years (assuming the landowner receives 75 percent cost share for installation from federal and state programs) ranged from \$65 to \$107 per acre per year for cropland in counties within the Chesapeake Bay watershed and from \$53 to \$90 per acre per year for cropland in counties outside of the bay watershed. Costs of participation for pastureland were about the same.

However, the study did not include costs due to operational inefficiencies (for example, when buffers break up fields into smaller areas with irregular borders) or impacts on adjoining cropland, nor did it address concerns farmers have about lost access to water, an increase in nuisance wildlife and weeds, or the time to maintain the buffer.

**Table 1. Average Costs for Riparian Forest Buffer Planting and Maintenance in Virginia.**

	Estimated Average Cost
<b>Materials and Labor</b>	
Hardwood seedlings	\$80.00 per hundred
Labor to plant	\$1.00 per tree
Shrubs	\$20.00 per hundred
Shrubs for bank stabilization	\$25.00 per hundred
Labor to plant	\$0.20 each
Switchgrass (recommended rate 10 lbs. per acre)	\$4.00 per pound
Planting costs (conventional or no-till)	\$16.00 per acre
Fescue (recommended rate 60 lbs. per acre)	\$1.50 per pound
Ladino clover (recommended rate 3 lbs. per acre)	\$4.00 per pound
Planting costs (conventional or no-till)	\$12.00 per acre
<b>Site preparation:</b>	
Disking (2 passes)	\$34.00 per acre
Bush hog	\$8.00 per acre
Sod control (spot spray with herbicide)	\$0.15 per tree
<b>Weed control:</b>	
Tree shelters (3' shelters with stakes)	\$2.80 each
Labor to install	\$0.30 each
Mulch mats	\$0.75 each
Herbicide treatment <sup>1</sup>	\$54.00 per acre
<b>Streambank Stabilization:</b>	
Riprap (including earth movement)	\$91.00 per foot
Bioengineering (including earth movement to slope back bank, plant materials, and placement of rootwads, brush layers, and live stakes)	\$21.50 per linear foot
<b>Livestock Exclusion:</b>	
Electric fence	\$0.85 per foot
Installation	\$0.40 per foot
Charger, clamps, grounding rods	\$399.00 per thousand feet
Alternate watering facility (gravity-fed concrete trough) <sup>2</sup>	\$800.00 each
Stream crossing for animals <sup>2</sup>	\$1,150.00 each
<b>Maintenance:</b>	
Mow between trees	\$8.00 per acre
Mow grass buffer	\$8.00 per acre

From: U.S.D.A. Natural Resource Conservation Service 1997. 1997 CRP practice cost and flat rate payment estimates for Virginia, March 1997. U.S.D.A. Natural Resource Conservation Service, Richmond, Va.

<sup>1</sup>Figures for herbicide treatment from Palone, R. S., and A. H. Todd (eds.). 1997. Chesapeake Bay Riparian Handbook: A guide for establishing and maintaining riparian forest buffers. U.S.D.A. Forest Service NA-TP-02-97.

<sup>2</sup>Figures for watering facility and stream crossing from Faulkner, D. L. 1998. The economics of Conservation Reserve Enhancement program. Virginia Department of Conservation and Recreation. Division of Soil and Water Conservation, Richmond, Va.

## Cost Share and Technical Assistance

Many government agencies and non-profit conservation organizations offer information, educational programs, funding, and technical assistance to landowners who wish to restore riparian areas. Some organizations purchase riparian easements to help landowners compensate for the long term costs of streamside restoration.

### Federal Government

The U.S. Department of Agriculture - Natural Resource Conservation Service and the Farm Service Agency (FSA) provide technical assistance, cost-share and/or annual rental payments to manage environmentally sensitive lands such as wetlands and riparian areas (Figure 2).

- The **Conservation Reserve Program (CRP)** was introduced in the 1985 Food Security Act (Farm Bill) to reduce soil erosion and protect water quality by removing highly erodible and other environmentally sensitive lands (such as riparian areas)



Fig 2. Federal agencies, including the U.S.D.A. Natural Resources Conservation Service, the U.S. Fish and Wildlife Service, U.S.D.A. Forest Service, and the Tennessee Valley Authority offer funds for restoring riparian areas.

from agricultural production. This program offers a 50 percent cost-share to establish trees or other cover in riparian areas, as well as annual rental payments while the practice is being maintained. Eligible lands include riparian areas that have been planted in crops two of the last five years or marginal pasture that is suitable for use as a riparian buffer planted to trees. Riparian buffers must be at least 35 feet wide in order to be eligible for cost-share and rental payments. Land must be owned or operated by the applicant for 12 months prior to the sign-up period and landowners must agree to maintain the practice for a 10- to 15-year contract period.

- The **Virginia Conservation Reserve Enhancement Program (CREP)**, established in 2000, is a joint federal-state land retirement program to improve water quality and provide habitat for wildlife associated with riparian and wetland areas. CREP provides 75 percent cost-share incentives (50 percent federal and 25 percent state) and annual rental payments to establish riparian buffers adjacent to streams, seeps, springs, ponds, and sinkholes. Eligible lands include riparian areas that have been planted in crops two of the last five years or marginal pasture that is suitable for use as a riparian buffer planted to trees. The buffer must be a minimum of 35 feet wide or 30 percent of the floodplain (whichever is greater) and planted in mixed hardwoods. Depending on the width of the floodplain, the buffer may be extended up to a maximum width of 300 feet and include an optional filter strip of native warm-season grasses on cropland sites. Landowners must exclude livestock from the stream and riparian area. Practices eligible for cost-share include fencing, watering facilities, hardwood tree planting, filter strip establishment, and wetland restoration.

All riparian land in the Chesapeake Bay watershed currently in use as cropland or livestock pasture is eligible for CREP funding. Lands outside the bay watershed that meet certain criteria (defined as one of the following: a “high” priority ranking for total agricultural pollution, a “high” Natural Heritage Resource watershed ranking, a “priority county” status in the Virginia Bobwhite Quail Management Plan, or watershed in the New River Basin) are also eligible. Producers may enroll eligible land for a 10- to 15-year contract period. Annual per-acre rental payments are calculated as follows: \$5 maintenance fee plus 120 percent of the “base rate” (the “base rate” is defined as the county average CRP rental rate for marginal pastureland or the weighted average CRP soil rental rate for cropland), limited to \$100 per acre in the Chesapeake Bay watershed and \$90 outside the bay watershed. An additional one-time incentive payment of \$50 per acre for a 10-year contract or \$75 per acre for a 15-year contract is currently being offered. Cost-share is available to pay 75 percent of the cost of installing riparian vegetation and fencing out livestock. A tax credit is available to cover expenses not paid by cost-share funds. Participants in the Chesapeake Bay watershed may receive an additional 25 percent cost-share for forested buffers at least 100 feet wide, for wetland restoration, and for any practices placed in a permanent conservation easement.

- The **Environmental Quality Incentives Program (EQIP)** was established in the 1996 Farm Bill to replace the Water Quality Improvement Program (WQIP) and the Agricultural Conservation Program (ACP). EQIP provides cost-share funds to address critical environmental needs and concerns of an area or watershed. Up to 75 percent cost-share funds for fencing of livestock from riparian areas is available to landowners who agree to establish permanent vegetative cover in the riparian zone and who implement a planned grazing system for their livestock. Landowners must agree to maintain the practices for a 5- to 10-year contract period.
- The goal of the **Watershed Protection Projects** program is to reduce and provide protection from flooding through better land management. Up to 75 percent cost-share funds are available to install conservation practices on private lands. Practices that are eligible for funding vary from project to project. Currently, funding is available for 13 watersheds in Virginia.
- The **Wetland Reserve Program (WRP)** provides 75 percent cost-share for wetland restoration to provide habitat for fish and wildlife, protect water

quality, reduce flooding, protect biological diversity, and furnish scientific, recreational and aesthetic benefits. Landowners must agree to maintain the restored area for at least 10 years. WRP also offers funds to enroll the property in a permanent or short-term (30-year) conservation easement. Lands enrolled in permanent easements are eligible for 100 percent of the costs of restoration.

- The **Wildlife Habitat Incentive Program (WHIP)** is a voluntary program for landowners who want to establish and improve wildlife habitat on private agricultural lands. Cost-share funds of up to 75 percent are available to establish riparian buffers, create habitat for waterfowl, install field borders, and establish and maintain warm-season grasses. Riparian buffers must be at least 35 feet wide to qualify for funding and landowners must agree to a 5- to 10-year contract period.

The **U.S. Fish and Wildlife Service** offers technical and financial assistance to restore wildlife habitat on private lands, particularly on lands that support rare or declining species, anadromous fish, or communities and habitat for migratory birds.

- Through the **Partners for Fish and Wildlife** program, the service will provide assistance to restore wetlands, streams, grasslands, and forested areas to benefit wildlife. In Virginia, the program currently targets livestock operations in the Upper Tennessee, Roanoke, and Potomac River basins. Approved practices in riparian areas include livestock fencing, alternative watering systems, streambank stabilization, and planting of native trees and shrubs. Eligible lands include private lands and lands owned by local and state governments of at least 5 acres in size. The preferred width for a riparian buffer is at least 35 feet on either side of the stream, depending on the site. The landowner must sign an agreement not to damage or destroy the project for a period of at least 10 years.

The **Tennessee Valley Authority (TVA)** provides funding through the **Clean Water Initiative** for riparian and stream restoration projects in the Tennessee River drainage basin. Private landowners, community groups, and local governments in the Clinch, Powell, and Holston River watersheds of Southwestern Virginia are eligible for funding. Landowners should contact their local Soil and Water Conservation District office for information on the availability of funds.

## Commonwealth of Virginia

The **Virginia Department of Conservation and Recreation** offers cost-share funds through the **Water Quality Improvement Fund** and the **Virginia Agricultural Best Management Practices** cost-share program to establish riparian buffers along streams and tidal shorelines (Figure 3).



Fig 3. The Commonwealth of Virginia offers cost-share and technical assistance through the Virginia Department of Conservation and Recreation, the Virginia Department of Forestry, the Virginia Department of Environmental Quality, the Virginia Department of Game and Inland Fisheries, and Resource Conservation and Development Districts.

Landowners are also eligible for a Virginia state tax credit equal to 25 percent of the landowner's out-of-pocket expenses incurred in installing the practices (up to \$17,500/yr). Eligible lands include agricultural lands owned by private individuals, foundations, non-profit organizations, and other non-governmental entities. The program is managed by local Soil and Water Conservation Districts and includes the following practices:

- The **Grazing Land Protection** practice provides cost-share funds of 75 percent for fencing and stream crossings to eliminate direct livestock access to streams. The landowner must agree to maintain the practice for at least 10 years.
- The **Stream Protection** practices provide 75 percent cost-share funds for permanent fencing and to plant streamside vegetation in riparian areas. A tax credit is also available for installing livestock crossings and for stream channel stabilization practices. The landowner must agree to maintain practices for at least 5 years.
- The **Grass Filter Strips** practice provides a one-time payment of \$175 per acre to install and maintain grass filter strips along streams. A larger payment of \$250 to \$300 is available under the "wildlife option" if warm-season grasses are planted. The

landowner must agree to maintain the area for at least 5 years. The minimum width for the filter strip is 25 feet.

- The **Woodland Buffer Filter Area** practice provides a one-time payment of \$200 per acre to establish forested buffers along streams. Cost-share assistance for seedlings, labor, and site preparation is permissible from other sources. This practice is limited to crop and pasture land that has been in production two of the past five years. The width of the buffer is determined by land capability class, but must be at least 35 feet (or up to one-third of the floodplain, to a maximum of 100 feet), and the landowner must agree to maintain the practice for at least 10 years.
- **Vegetative Stabilization of Marsh Fringe Areas** provides funds to stabilize tidal shorelines. The practice provides cost-share of 50 percent to establish marsh grasses.
- The **Wetland Restoration** practice provides a tax credit to landowners who restore wetlands on their property. Landowners must agree to maintain the wetland for at least 10 years.
- The **Water Quality Improvement Fund (WQIF)** was created by the 1977 General Assembly to reduce the flow of nitrogen and phosphorus into the Chesapeake Bay. The purpose of the fund is to provide grants to local governments, soil and water conservation districts, and individuals for point and nonpoint source pollution control. The majority of nonpoint source funding is used to support the Agricultural Cost-Share Program and Conservation Reserve Enhancement Program. Riparian restoration projects that are not covered by these programs are eligible for limited funding through WQIF (up to 50 percent cost-share).

The **Virginia Department of Forestry** offers technical and financial assistance for tree planting in riparian areas:

- The **Forestry Incentive Program (FIP)** is a federal program administered by the U.S.D.A. Natural Resources Conservation Service and the Virginia Department of Forestry to provide funds for tree planting, site preparation, and tim-

ber stand improvement practices on non-industrial private lands. To be eligible for FIP funds, landowners must have an approved forest management plan, enroll a minimum of one acre of land, and agree to maintain the practices for at least 10 years. Current cost-share rates are approximately 40 percent for pine plantings and 65 percent for hardwood management.

- **Restoration of Timberlands (RT)** provides cost-share funds of up to 40 percent for tree planting and timber stand improvement practices on private, non-profit, and community forest lands. Only lands planted to pine are eligible. There is a 10-year contract period. The program is funded by a tax on forest products in Virginia with matching state funds.

The **Virginia Department of Environmental Quality/Virginia Coastal Resources Management Program** provides grants to local governments, state agencies, and others for restoration, demonstration, and monitoring projects on public lands. Streambank restoration projects and establishing forested riparian buffers are eligible for funding.

**Resource Conservation and Development Districts (RC&Ds)** work with other conservation groups to provide technical and management assistance and secure funding to restore riparian areas. Eligible lands include those owned by private landowners, municipalities, state governments, non-profit conservation agencies, and other ownerships.

The **Virginia Department of Game and Inland Fisheries** offers assistance for landowners wishing to enhance the riparian area for fish and wildlife. They work closely with biologists from the U.S. Fish and Wildlife Service, the Natural Resources Conservation Service, Ducks Unlimited, and others to develop management plans and to secure sources of funding for landowners. They will also accept donations of conservation easements for properties with high value to fish and wildlife.



Fig 4. Many non-profit agencies offer funding to restore wetland and riparian habitat.

### **Non-profit Conservation Organizations**

**Ducks Unlimited and the Chesapeake Bay Foundation** are non-profit conservation organizations that offer funding to restore

wetland and riparian areas for water quality improvement and habitat restoration (Figure 4).

- They have formed a joint effort, the **Chesapeake Bay Initiative**, whereby landowners within the Chesapeake Bay watershed who are enrolled in the Conservation Reserve Enhancement Program are reimbursed an additional 25 percent of installation costs to restore wetlands and riparian buffers (including sinkhole sites). To qualify, buffers must be at least 100 feet wide and planted in trees. They will also reimburse 25 percent of installation costs on any other CREP project that is placed in a permanent conservation easement. When combined with the 75 percent cost-share reimbursement available through the CREP program, this means that installation costs of these practices are paid in full. Eligible expenses for restoring forested buffers include cost of trees and tree planting, fencing, and alternative watering sources. Eligible expenses for wetland restoration include the construction of berms, ditch plugs, water control structures, and vegetation.

The **Izaak Walton League of America** sponsors the **Save-Our-Streams Program**, which recruits and trains volunteers to monitor water quality in streams. They also offer educational materials and assistance to individuals, citizen groups, local governments, and government agencies for streambank restoration projects.

**American Forests** provides cost-share funding through its **Global ReLeaf Forest Ecosystem Restoration Program** for riparian forest restoration. It will fund projects on both public and private lands; however, private landowners must enroll their riparian lands in a conservation agreement with a conservation agency (for example, their local Soil and Water Conservation District) to be eligible for funding. American Forests will cover the normal costs associated with tree planting; for example, seedling purchase, site preparation, and tree shelters.

**Trout Unlimited** will provide funding for projects to restore coldwater fisheries through its **Embrace-a-Stream Program**. This program will support the cost of tree plantings, in-stream restoration, fencing, alternate watering facilities for livestock, and other costs associated with stream restoration. There is no minimum acreage or width requirement, nor is there a requirement for the landowner to enter into a long-term agreement with a conservation agency. However, priority is given to lands that are protected. Where landowners are receiving funding through other sources (for example, state or federal cost-share

funds), Trout Unlimited will provide the landowner match for the project, thereby assuring that all costs of restoration are met. The Embrace-a-Stream program will also fund research and educational projects. Trout Unlimited works with federal agencies through the **Bring Back the Natives** restoration project, where the goal is to promote the re-establishment of native trout or salmon fisheries on federal lands.

The **James River Association** offers technical assistance to landowners along the lower James River (approximately from Richmond downstream to the Charles City line). It works with private landowners, industries, and local governments owning properties on the James River to develop and implement shoreline protection strategies and riparian habitat restoration projects. It will assist landowners in locating sources of funding and volunteer assistance to complete restoration projects. The association accepts and encourages the use of conservation easements to protect riparian lands along the James River.

**Fairfax ReLeaf** is an organization of volunteers who plant and preserve trees and restore habitat on public lands in Northern Virginia. It offers financial and technical assistance to help plan projects, coordinate volunteer groups, and to locate planting stock.

## Conservation Easements

Landowners may protect their riparian lands permanently with a conservation easement (Figure 5).

Conservation easements are perpetual legal agreements between a private property owner and a qualified conservation agency (such as a land trust, conservation organization, or public agency). The easement voluntarily places restrictions on the type and amount of activity that may take place on that property (for example, activities that would destroy natural, scenic, or historic features). A riparian easement is



Fig 5. Conservation easements can offer the landowner income tax, estate tax, and property tax advantages while allowing the landowner rights of ownership.



a special type of conservation easement that applies to streamside areas. The landowner retains ownership and use of the property, but agrees to a plan to protect the riparian area. This may include such practices as establishing vegetation or limiting livestock use of the area. The conservation easement may either be donated by the landowner to the conservation agency, or the landowner may accept payment for the “rights” that are conveyed. The easement becomes part of the property deed and remains in effect for the entire life of the agreement, binding future property owners to the same terms as the present owner. Easements may be perpetual or for a specific period of years. Conservation easements can reduce state and federal income taxes, property taxes, estate taxes, and capital gains taxes.

## Federal Government

The federal government purchases conservation easements through the U.S. Department of Agriculture and the U.S. Fish and Wildlife Service. The **Wetland Reserve Program (WRP)** offers 75 percent to 100 percent cost-share funds to restore wetlands on private property and allows landowners to sell either permanent or short-term easements to the U.S. Department of Agriculture. A one-time payment of the appraised agricultural value of the land (not to exceed \$1,200) is made to the landowner for perpetual easements; 30-year easements are eligible for 75 percent of the easement value. The landowner maintains ownership of the land. Income from timber harvesting, leasing of hunting and fishing rights, or other compatible uses can be included in the Wetlands Reserve Program agreement. The Wetlands Reserve Program is administered by the U.S.D.A. Natural Resources Conservation Service.

The U.S. Fish and Wildlife Service accepts conservation easements through the **Partners for Fish and Wildlife** program. Lands targeted for easements are lands with threatened and endangered species and lands adjacent to or near a National Wildlife Refuge.

## Commonwealth of Virginia

The Commonwealth of Virginia accepts easements through the **Division of Natural Heritage**, the **Department of Game and Inland Fisheries**, the **Department of Conservation and Recreation** and the **Virginia Outdoors Foundation**. Lands targeted for easements by Natural Heritage include those that support rare species or significant natural communities; the Department of Game and Inland Fisheries accepts easements for wetlands and open space. The Department of Conservation and Recreation will purchase permanent easements for all lands entered into

the Conservation Reserve Enhancement Program (CREP). The Virginia Outdoors Foundation was established by the Virginia General Assembly to conserve Virginia’s scenic, natural, historic, and recreational areas for the public benefit. They accept donations of and purchase a variety of conservation easements, including easements for riparian corridors, flood plain protection areas, and other lands important to water quality protection. Easements are jointly held by the Virginia Outdoors Foundation and a local co-holder, such as a local government, Soil and Water Conservation District, or conservation organization.

## Non-profit Conservation Organizations

Many national conservation organizations also accept easements of wetlands and riparian areas. Those operating in Virginia include the Nature Conservancy and Ducks Unlimited.

In addition, there are many local and regional private organizations that accept conservation easements of riparian lands. These include the **Chesapeake Bay Foundation**, the **James River Association**, **Piedmont Environmental Council**, the **Valley Conservation Council**, the **Western Virginia Land Trust**, the **Fairfax Land Preservation Fund**, **Friends of Dragon Run**, and others. In some counties, local **Soil and Water Conservation Districts** may use part of their funding to purchase conservation easements in areas of important ecological value, including riparian areas.

## Tax Incentives

Riparian landowners may be eligible for reductions in state and federal income taxes and local property taxes for restoration and conservation of streamside areas (Figure 6).



Fig 6.

In Virginia, the **Use-Value Taxation Assessment** allows counties, at their own option, to voluntarily reduce property taxes for agricultural and forested lands and to remove property taxes entirely on wetlands and riparian lands that have been placed in a perpetual conservation easement. Not all counties currently allow the tax reduction. In order to qualify, riparian areas must be at least 35 feet in width, adjacent to a body of water, and managed to maintain the integrity of stream channels and reduce the effects of upland sources of pollution.

The **Virginia Agricultural Best Management Practices Tax Credit Program** was established in 1998 to support the voluntary installation of best management practices (BMPs) that reduce the amount of nonpoint source pollution entering the state's streams, rivers, and estuaries. Agricultural producers with an approved conservation plan are allowed a tax credit of 25 percent of the first \$70,000 of expenses spent on eligible BMPs. The program is administered by local Soil and Water Conservation Districts.

The 2000 General Assembly approved a **Riparian Forest Buffer Tax Credit** for owners of forest land who forgo harvest in riparian areas. Landowners are eligible for a credit of 25 percent of the value of the timber retained in the riparian buffer. Landowners must have an approved Forest Stewardship Plan for their tract, must retain at least 50 percent of the crown cover in the buffer during a forest harvest, and agree to maintain the buffer for 15 years. Riparian buffers must be at least 35 feet wide to qualify.

Reductions in federal income tax for the costs of tree planting and site preparation (up to \$10,000 each year) are provided by the **Reforestation Tax Credit** and **7-year amortization**. Sites must be larger than one acre in size and managed for the production of commercial timber to qualify. Buffers planted for water quality, aesthetic, or wildlife purposes are excluded. Reductions in federal and state income taxes are also provided when riparian lands are placed in a permanent conservation easement and given to a qualified conservation agency. The easement value is considered a "charitable gift" for income tax purposes, thus allowing for state and federal income tax reductions and reduced estate taxes.

## Who To Contact

For further information on these and other programs, contact your local Virginia Cooperative Extension office or one of the other organizations listed below:

### **American Forests**

P.O. Box 2000  
Washington, DC 20013  
(202) 955-4500  
<http://www.americanforests.org>

### **Chesapeake Bay Foundation**

Virginia State Office  
Capital Place  
1108 E. Main St., Suite 1600  
Richmond, VA 23219  
(804) 780-1392  
<http://www.savethebay.cbf.org>

### **Ducks Unlimited**

P.O. Box 303  
Heathsville, VA 22473  
(804) 580-7652  
<http://www.ducks.org>

### **Fairfax Land Preservation Trust**

Packard Center  
4022 Hummer Rd.  
Annadale, VA 22003  
(703)354-5093  
<http://look.net/farifaxLand>

### **Fairfax ReLeaf**

12055 Government Center Parkway  
Suite 703  
Fairfax, VA 22035  
(703) 324-1409  
<http://www.geocities.com/RainForest/5663/>

### **Friends of Dragon Run**

P.O. Box 882  
Gloucester, VA 23061

### **Izaak Walton League of America**

**Save Our Streams Program**  
707 Conservation Lane  
Gaithersburg, MD 20878  
(301) 548-0150  
<http://www.iwla.org/SOS/index.html>

### **James River Association**

P.O. Box 110  
Richmond, VA 23218  
(804)730-2898  
<http://www.jamesriverassociation.org>

### **The Nature Conservancy Virginia Chapter**

1110 Rose Hill Dr., Suite 200  
Charlottesville, VA 22903  
(804) 295-6106  
or  
1233-A Cedars Court  
Charlottesville, VA 22903-4800  
804-295-6106

### **Piedmont Environmental Council**

P.O. Box 460  
Warrenton, VA 20188 or 22186?  
(540) 347-2334  
<http://www.pec.va.org>

### **Resource Conservation and Development Districts**

#### **Black Diamond RC&D**

383 Highland Dr. Suite 2  
Lebanon VA 24266  
(540) 889-4180

#### **Eastern Shore RC&D**

22545 Center Parkway  
P.O. Box 127  
Accomac, VA 23301  
(757) 787-2786

#### **New River Highlands RC&D**

100 U.S.D.A. Drive  
Wytheville, VA 24382  
(540) 228-2879

#### **Old Dominion RC&D**

250 LeGrande Ave., Suite F  
Charlotte Courthouse, VA 23923  
(804) 736-5489

#### **Trout Unlimited**

1500 Wilson Blvd. Suite 310  
Arlington, VA 22209  
(703) 284-9407  
<http://www.tu.org>

### **U.S. Department of Agriculture Natural Resource Conservation Service**

1606 Santa Rosa Rd.  
Richmond, VA 23229  
(804) 287-1668  
<http://www.va.nrcs.usda.gov>

**U.S. Department of Agriculture  
Farm Service Agency**  
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Riparian forests are forests which occur adjacent to streams, lakes, and other surface waters. Through the interaction of their soils, hydrology, and biotic communities, riparian forests protect and improve water quality, provide habitat for plants and animals, support aquatic communities, and provide many benefits to humans. Virginia, along with other states in the Chesapeake Bay region, has recognized the importance of riparian forests by implementing a plan to restore forested buffers along streams, rivers, and lakes. This series of publications by Virginia Cooperative Extension reviews selected literature on riparian forest buffers, including water quality functions, benefits to fish and wildlife, and human benefits. The review also discusses riparian buffer restoration and some of the costs and barriers associated with riparian forest buffer establishment. Information on financial and technical assistance programs available to Virginia landowners is included.

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