

SECTION 10: Literature Cited

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APPENDIX A: Rare Species and Natural Communities

Table 4 indicates the rare species and natural communities that have been found in the Dragon Run watershed, according to the Virginia Division of Natural Heritage (Belden, Jr. et al., 2001; Belden, Jr. et al., 2003).

SCIENTIFIC NAME	COMMON NAME	STATUS
<i>Animals</i>		
Atlides halesus	Great purple hairstreak	S2, S3
Enallagma weewa	Blackwater bluet	S1
Epiptera spinosa	Robust baskettail	S2
Haliaeetus leucocephalus	Bald eagle	S2
Helocordulia selysii	Selys' sunfly	S2
Isoparce cupressi	Cypress sphinx	S1, S3
Somatochlora filosa	Fine-lined emerald	S2
Wyeomyia haynei	Southern pitcher-plant mosquito	S1
<i>Plants</i>		
Bolboschoenus fluviatilis	River bulrush	S2
Cardamine pratensis	Cuckooflower	S1
Carex decomposita	Cypress-knee sedge	S2
Chelone oblique	Red turtlehead	S1
Desmodium strictum	Pineland tick-trefoil	S2
Eriocaulon parkei	Parker's pipewort	S2
Sarracenia purpurea var. purpurea	Northern purple pitcher-plant	S2
**Hottonia inflata	Featherfoil	S3
**Ranunculus flabellaris	Yellow water crowfoot	S3
<i>Natural Communities</i>		
Baldcypress-Tupelo Swamp		
Fluvial Terrace Woodland		
Tidal Baldcypress-Tupelo Swamp		
Tidal Baldcypress Woodland/Savanna		
Tidal Freshwater Marsh		

S1 = Extremely rare; usually 5 or fewer occurrences in the state; or may have a few remaining individuals; often especially vulnerable to extirpation.

S2 = Very rare; usually between 5 and 20 occurrences; or few occurrences with many individuals; often susceptible to becoming endangered.

S3 = Rare to uncommon; usually between 20 to 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances

** = No longer tracked by the Division of Natural Heritage; placed on watchlist due to an increased number of documented occurrences within the state since 2001

Table 4. Rare species and natural communities in the Dragon Run watershed.

The following descriptions of natural communities are taken from *The Natural Communities of Virginia* (Fleming et al., 2001).

Bald Cypress-Tupelo Swamps

Seasonally to semipermanently flooded forests of backswamps, sloughs, and low terraces of Coastal Plain rivers and large streams. These swamp forests are distributed throughout southeastern Virginia, north to Dragon Swamp (Gloucester, King and Queen, and Middlesex Counties). Habitats are deeply flooded (up to 1m) for part of the year; most retain at least some standing water throughout the growing season. Microtopography is often pronounced with small channels, swales, tree-base hummocks, and numerous bald cypress “knees.” Tree canopies vary from mixed stands of bald cypress (*Taxodium distichum*), water tupelo (*Nyssa aquatica*), and swamp tupelo (*N. biflora*) to nearly pure stands of one species or another. The three dominants have complex competitive and successional relationships. As a rule, the two tupelos are less shade-tolerant than bald cypress and regenerate more readily by sprouting in cut-over stands. Thus, tupelos tend to become dominant when bald cypress stands are heavily logged. Green ash (*Fraxinus pennsylvanica*) and red maple (*Acer rubrum*) are occasional canopy associates and frequent understory trees. Carolina ash (*F. caroliniana*) is often dominant in the small tree and shrub layers, while vines of climbing hydrangea (*Decumaria Barbara*) are often abundant. Herb layers vary from sparse to rather lush. Most herbaceous plants of bald cypress-tupelo swamps are tolerant of muck soils and fluctuating water levels, or are capable of becoming established on tree hummocks, stumps, and logs. A few of the typical herbs are lizard’s tail (*Saururus cernuus*), false nettle (*Boehmeria cylindrical*), Walter’s St. John’s-wort (*Triadenum walteri*), swamp beggar-ticks (*Bidens discoidea*), weak stellate sedge (*Carex seorsa*), giant sedge (*Carex gigantean*), taperleaf bugleweed (*Lycopus rubellus*), and pale mannagrass (*Torreyochloa pallida*). Although community types in this group are relatively common, high-quality specimens of the dominant trees are known to provide nesting habitats for the globally uncommon, state-rare eastern big-eared bat (*Corynorhinus rafinesquii macrotis*) and southern myotis (*Myotis austroparius*). Old-growth stands of bald cypress-tupelo swamp with trees up to 800 years old occur along the Blackwater River in Surry and Isle of Wight Counties. References: Fleming and Moorhead (1998), Parker and Wyatt (1975), Plunkett and Hall (1995).

Tidal Bald Cypress Forests and Woodlands

Coniferous or mixed swamp forests and woodlands occurring along the upper tidal reaches of rivers in southeastern Virginia. Examples are documented from the Dragon Swamp/Piankatank River (Gloucester, King and Queen, and Middlesex Counties), the Chickahominy River (Charles City, James City, and New Kent Counties), the James River (Isle of Wight and Surry Counties), and the wind-tidal Northwest River (City of Chesapeake). At some sites, these communities occur in ecotones between tidal marshes and non-tidal backswamps or uplands. Bald cypress (*Taxodium distichum*) dominates the open to very open canopy, with or without hardwood associates such as swamp tupelo (*Nyssa biflora*), water tupelo (*Nyssa aquatica*), and green ash (*Fraxinus pennsylvanica*). Stand structure and canopy cover range from closed forest to very open woodland. Shrub and herb layers are variable but generally contain a mixture of species characteristic of both marshes and swamps. Some well-developed tidal bald cypress forests appear floristically similar to palustrine bald cypress-tupelo swamps. Other stands have a nearly monospecific herb dominance by shoreline sedge (*Carex hyalinolepis*). In a unique, possibly fire-influenced, savanna-like stand on the Northwest River, the herbaceous dominants, in rough seasonal order, are silvery sedge (*Carex canescens* spp. *Disjuncta*), spikerushes (*Eleocharis fallax* and *E. rostellata*), marsh rattlesnake-master (*Eryngium aquaticum* var. *aquaticum*), and wild rice (*Zizania aquatica* var. *aquatica*). The environmental dynamics, compositional variation,

and state-wide distribution of this group are poorly known and need intensive study. Reference: Fleming and Moorhead (1998).

Fluvial Terrace Woodlands

A somewhat enigmatic group of communities occurring on flat, sandy terraces and islands along Coastal Plain rivers in eastern Virginia. These habitats are elevated well above the level of adjacent swamps and are characterized by xeric, sandy soils and open forest or woodland vegetation. Single occurrences have been documented along the Nottoway River (Sussex County), Chickahominy River (New Kent County), Dragon Swamp (Middlesex County), and Mattaponi River (Caroline County). At all four sites, hickories (*Carya pallida* and *C. alba*) are dominant trees, with drought-tolerant oaks (*Quercus falcate*, *Q. nigra*, *Q. marilandica*, *Q. alba*) present in smaller numbers. Shrubs occurring at all or most sites include sand post oak (*Q. margarettiae*), horse-sugar (*Symplocos tinctoria*), American holly (*Ilex opaca* var. *opaca*), and eastern red cedar (*Juniperus virginiana* var. *virginiana*). Typical herbs include sedges (*Carex albicans* var. *australis*, *C. pennsylvanica*, and *C. tonsa*), Canada frostweed (*Helianthemum canadense*), butterfly-pea (*Clitoria mariana*), late goldenrod (*Solidago tarda*), and prickly-pear (*Opuntia humifusa*). The Dragon Run site is anomalous in the presence (despite low soil pH and base status) of several calciphiles such as eastern redbud (*Cercis canadensis* var. *canadensis*), wild columbine (*Aquilegia canadensis*), smooth rock-cress (*Arabis laevigata* var. *laevigata*), robin's-plantain (*Erigeron pulchellus* var. *pulchellus*), and elm-leaved goldenrod (*Solidago ulmifolia* var. *ulmifolia*). A full understanding of the status and compositional relationships of this group will require additional inventory and assessment.

Tidal Freshwater Marshes

A diverse group of herbaceous wetlands subject to regular diurnal flooding along upper tidal reaches of inner Coastal Plain river and tributaries. Freshwater marshes occur in the uppermost portion of the estuarine zone, where the inflow of saltwater from tidal influence is diluted by a much larger volume of freshwater from upstream. Strictly speaking, freshwater conditions have salt concentrations <0.5 ppt, but pulses of higher salinity may occur during spring tides or periods of unusually low river discharge. The most common species are arrow-aryum (*Peltandra virginica*), dotted smartweed (*Polygonum punctatum*), wild rice (*Zizania aquatic* var. *aquatica*), pickerelweed (*Pontederia cordata*), rice cutgrass (*Leersia oryzoides*), tearthumbs (*Polygonum arifolium* and *P. sagittatum*), and beggar-ticks (*Bidens* spp.). Locally, sweetflag (*Acorus calamus*) and southern wild rice (*Zizaniopsis miliacea*) may form large dominance patches. Species diversity and vegetation stature vary with salinity, duration of inundation, and disturbance; the most diverse marshes occupy more elevated surfaces in strictly freshwater regimes. Mud flats that are fully exposed only at low tide support nearly monospecific stands of spatterdock (*Nuphar advena*), although cryptic submerged aquatic species may also be present. Tidal freshwater marshes are best developed on sediments deposited by large meanders of the Pamunkey and Mattaponi Rivers, although outstanding examples also occur along the Potomac, Rappahannock, Chickahominy, and James Rivers. These communities provide the principal habitat for the globally rare plant sensitive joint-vetch (*Aeschynomene virginica*). Chronic sea-level rise is advancing the salinity gradient upstream in rivers on the Atlantic Coast, leading to shifts in vegetation composition and the conversion of some tidal freshwater marshes into oligohaline marshes. Tidal Freshwater Marshes are also threatened by the invasive exotic marsh dewflower (*Murdannia keisak*). Several communities in this group are chiefly restricted to the Chesapeake Bay drainage basin and are considered globally rare or uncommon. References: Parker and Wyatt (1975), Perry and Atkinson (1997), Perry and Hershner (1999), McCoy and Fleming (2000).

APPENDIX B: Memorandum of Agreement

Memorandum of Agreement

Between

**Middle Peninsula
Planning District Commission**

County of Essex, Virginia

County of Gloucester, Virginia

County of King and Queen, Virginia

County of Middlesex, Virginia

To Participate in the

**Dragon Run Watershed
Special Area Management Plan**

**Memorandum of Agreement
Between**

**Middle Peninsula Planning District Commission
County of Essex, Virginia
County of Gloucester, Virginia
County of King and Queen, Virginia
County of Middlesex, Virginia**

**To Participate in the
Dragon Run Watershed Special Area Management Plan**

1. PARTIES TO THE AGREEMENT

This Memorandum of Agreement (MOA) is between the following entities:

- Middle Peninsula Planning District Commission
- County of Essex, Virginia
- County of Gloucester, Virginia
- County of King and Queen, Virginia
- County of Middlesex, Virginia

2. ENABLING AUTHORITY

Counties of Essex, Gloucester, King and Queen, and Middlesex

Section 15.2-1300 of the Code of Virginia enables local governments to enter into cooperative agreements to exercise those powers that each may be enabled to exercise.

Middle Peninsula Planning District Commission

Section 15.2-4205 of the Code of Virginia enables the Middle Peninsula Planning District Commission to enter into cooperative agreements with local governments to exercise those powers that each may be enabled to exercise.

3. CONTEXT

The Dragon Run is a brackish water stream that flows forty miles through the Virginia Middle Peninsula counties of Essex, King and Queen, Middlesex, and Gloucester and eventually empties into the Piankatank River. The Dragon Run Watershed has been defined for the purposes of this Agreement as the Commonwealth Hydrologic Unit ID 'CO2' described by the Virginia Department of Conservation and Recreation from the streams' headwaters down to and including Meggs Bay (see Appendix).

The Dragon Run's pristine nature can, in large part, be attributed to exemplary landowner stewardship and difficult access and is a central part of the region's culture and identity. Ecologically unique, the Dragon Run was ranked second of 232 ecologically significant areas throughout the Chesapeake Bay region by the Smithsonian Institution and is characterized by extensive tidal and nontidal cypress swamp, which is otherwise rare this far north. Furthermore, the Virginia Division of Natural Heritage recognizes the importance of the Dragon Run due to occurrences of one endangered animal species, five rare animal species, eight rare plant species, and five rare natural communities. Moreover, the Dragon Run Watershed supports a high quality of life for its residents. For example, recreational activities, such as hunting, fishing, and paddling, are popular in the Dragon Run.

The Middle Peninsula Planning District Commission, advised by the Dragon Run Steering Committee, obtained a Virginia Coastal Resources Management Program grant for the development of the Dragon Run Watershed Special Area Management Plan (SAMP). Each county in the watershed makes three appointments – one elected official and two landowners along the Dragon Run – to the Dragon Run Steering Committee. The SAMP Advisory Group, which reports to the Steering Committee, represents a cross-section of the community, including: Steering Committee members; local government elected officials and planning staff; landowners; state agencies; farming; forestry; education; non-profit organizations; and ecotourism.

4. PURPOSE AND TERMS OF THE AGREEMENT

The project's mission, as recommended by the SAMP Advisory Group to the Dragon Run Steering Committee, is to support and promote community-based efforts to preserve the cultural, historic, and natural character of the Dragon Run, while preserving property rights and the traditional uses within the watershed.

Each of the signatory entities in this Memorandum of Agreement agrees to participate in the Special Area Management Plan to promote the distinctive treatment deserving of the Dragon Run Watershed through the support and efforts of local government, the fostering of educational partnerships and grassroots support and the involvement of landowners whose stewardship has served to preserve the wonder of the Dragon. The signatories will consider the recommendations of the Dragon Run Steering Committee's SAMP Advisory Group to achieve the following goals and objectives that it developed by consensus:

GOAL I

Establish a high level of cooperation and communication between the four counties within the Dragon Run Watershed to achieve consistency across county boundaries.

OBJECTIVE A

Develop a plan to address the inevitable future development pressure to change the traditional use of land in the Dragon Run Watershed.

OBJECTIVE B

Achieve consistency across county boundaries among land use plans and regulations in order to maintain farming and forestry and to preserve natural heritage areas by protecting plants, animals, natural communities, and aquatic systems.

OBJECTIVE C

Provide ongoing monitoring of existing plans and planning tools in order to assess traditional land uses and watershed health and take action necessary to preserve the watershed.

OBJECTIVE D

Comprehensively implement Best Management Practices (BMPs) for water quality, wildlife habitat, and soil conservation.

GOAL II

Foster educational partnerships and opportunities to establish the community's connection to and respect for the land and water of the Dragon Run.

OBJECTIVE A

Encourage experience-based education consistent with the Stewardship and Community Engagement goals of the Chesapeake 2000 Agreement.

OBJECTIVE B

Promote the community and economic benefits of the Dragon Run derived from its natural characteristics and traditional uses such as farming, forestry, hunting and fishing.

GOAL III

Promote the concept of landowner stewardship that has served to preserve the Dragon Run Watershed as a regional treasure.

OBJECTIVE A

Address the potential dilemma of preserving the watershed's sense of peace and serenity by protecting open space and reducing fragmentation of farms, forests, and wildlife habitat versus the landowners rights in determining or influencing future land use.

OBJECTIVE B

Educate landowners about the regional importance of the Dragon Run.

The Advisory Group's recommendations to achieve the goals and objectives will be delivered by the Dragon Run Steering Committee to the signatory entities for their consideration.

5. MODIFICATIONS

Modifications to this Memorandum of Agreement must be submitted in writing and approved by all parties to the Memorandum of Agreement.

6. EFFECTIVE DATE

The effective date of the Memorandum of Agreement shall be the date of the signing of the Memorandum of Agreement by the Counties of Essex, Gloucester, King and Queen, and Middlesex and the Middle Peninsula Planning District Commission.

7. DURATION AND TERMINATION OF THE AGREEMENT

The duration of this Memorandum of Agreement will be until such time as it is terminated upon agreement of all parties; however, any party to the Memorandum of Agreement may terminate its participation by written notice to all other parties.

8. MANNER OF FINANCING

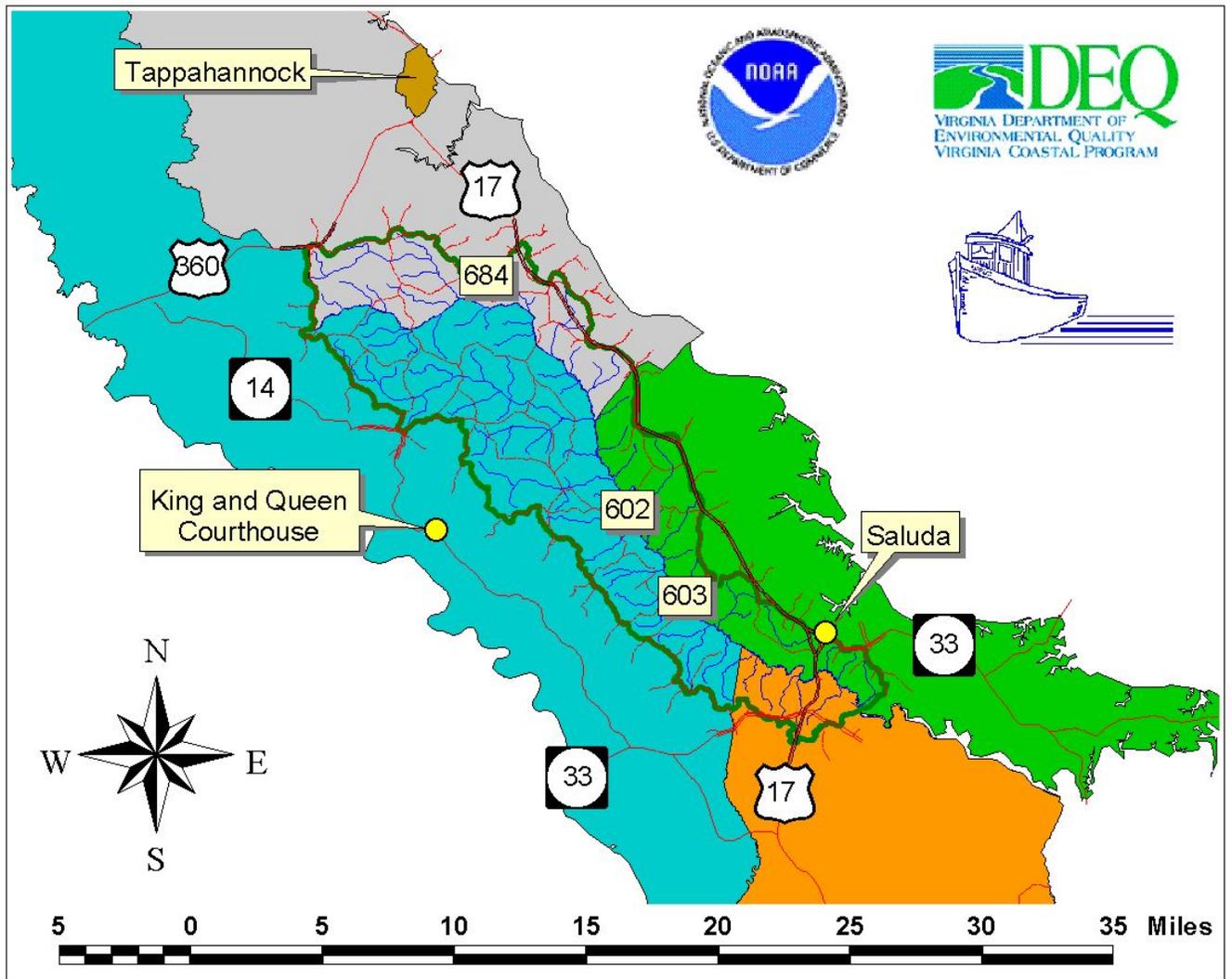
This Memorandum of Agreement will not require financing or budgeting from or by the signatory agencies; however, this clause will not preclude, under a separate document or agreement, grant funding or other financial assistance from one signatory to another for the purpose of carrying out the purposes of the Memorandum of Agreement.

9. OWNERSHIP OF PROPERTY

It is not the intent of the signatory parties that this Memorandum of Agreement will result in the purchase, ownership, holding or conveying of any real or personal property.

10. APPENDIX

Map of the Dragon Run Watershed - defined as Commonwealth Hydrologic Unit ID 'CO2' described by the Virginia Department of Conservation and Recreation from the streams' headwaters down to and including Meggs Bay.



LIST OF SIGNATORIES

Middle Peninsula Planning District Commission

County of Essex, Virginia

County of Gloucester, Virginia

County of King and Queen, Virginia

County of Middlesex, Virginia

SIGNATURE PAGE FOR THE MIDDLE PENINSULA
PLANNING DISTRICT COMMISSION

IN WITNESS WHEREOF, the following individuals execute this agreement

Chairman, Middle Peninsula Planning District Commission

County Administrator, County of Essex, Virginia

County Administrator, County of Gloucester, Virginia

County Administrator, County of King and Queen, Virginia

County Administrator, County of Middlesex, Virginia

MIDDLE PENINSULA PLANNING DISTRICT COMMISSION

By: Charles E. Ingram

Date: 8-1-2002

Attest: [Signature]

Date: 8/1/02

SIGNATURE PAGE FOR THE COUNTY OF ESSEX, VIRGINIA

IN WITNESS WHEREOF, the following individuals execute this agreement

Chairman, Middle Peninsula Planning District Commission

✓ County Administrator, County of Essex, Virginia

County Administrator, County of Gloucester, Virginia

County Administrator, County of King and Queen, Virginia

County Administrator, County of Middlesex, Virginia

COUNTY OF ESSEX, VIRGINIA

By: Maureen J. Dennis

Date: AUGUST 20, 2002

Attest: Linda E. Lumpkin

Date: AUGUST 20, 2002

SIGNATURE PAGE FOR THE COUNTY OF GLOUCESTER, VIRGINIA

IN WITNESS WHEREOF, the following individuals execute this agreement

Chairman, Middle Peninsula Planning District Commission

County Administrator, County of Essex, Virginia

County Administrator, County of Gloucester, Virginia

County Administrator, County of King and Queen, Virginia

County Administrator, County of Middlesex, Virginia

COUNTY OF GLOUCESTER, VIRGINIA

By: Will H

Date: 10-3-02

Attest: _____

Date: _____

SIGNATURE PAGE FOR THE COUNTY OF KING AND QUEEN, VIRGINIA

IN WITNESS WHEREOF, the following individuals execute this agreement

Chairman, Middle Peninsula Planning District Commission

County Administrator, County of Essex, Virginia

County Administrator, County of Gloucester, Virginia

County Administrator, County of King and Queen, Virginia

County Administrator, County of Middlesex, Virginia

COUNTY OF KING AND QUEEN, VIRGINIA

By: *Charles J. Craft*

Date: 9/9/02

Attest: *K. Deane Gabe*

Date: 9-9-02

SIGNATURE PAGE FOR THE COUNTY OF MIDDLESEX, VIRGINIA

IN WITNESS WHEREOF, the following individuals execute this agreement

Chairman, Middle Peninsula Planning District Commission

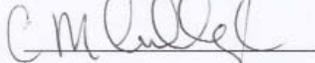
County Administrator, County of Essex, Virginia

County Administrator, County of Gloucester, Virginia

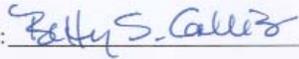
County Administrator, County of King and Queen, Virginia

County Administrator, County of Middlesex, Virginia

COUNTY OF MIDDLESEX, VIRGINIA

By: 

Date: 10-2-02

Attest: 

Date: 10-2-02

APPENDIX C: Description of Natural Resource Preservation Tools

Conservation Easements: According to the Virginia Conservation Easement Act (§10.1-1009 et seq.), a conservation easement “means a nonpossessory interest of a holder in real property, whether easement appurtenant or in gross, acquired through gift, purchase, devise, or bequest imposing limitations or affirmative obligations, the purposes of which include retaining or protecting natural or open-space values of real property, assuring its availability for agricultural, forestal, recreational, or open-space use, protecting natural resources, maintaining or enhancing air or water quality, or preserving the historical, architectural or archaeological aspects of real property.” There are significant tax benefits associated with the donation of conservation easements. The terms of the easement are highly flexible and dictate the permissible uses of the land. The easement is attached to the deed for the property.

Purchase of Development Rights (PDR) or Purchase of Agricultural Conservation Easements (PACE): A voluntary land conservation program that pays landowners to protect the cultural and natural resource assets of their property. The purpose is to protect open-space, agricultural, historic, scenic, and natural resources. In particular cases, the purpose is to maintain the economic viability of farm and forest operations. The program allows landowners to enter into agreements to sell the development potential of qualifying property to the County while maintaining the right to continue to use, own, sell, mortgage, and bequeath the property. PDR programs accommodate a variety of conservation categories and generally protect land in perpetuity, while PACE programs are specifically geared to agricultural operations and sometimes offer a buyback option at the current fair market value after a specified period of time.

Chesapeake Bay Preservation Act: The Chesapeake Bay Preservation Act (§10.1-2100 et seq.) requires that “(i) the counties, cities, and towns of Tidewater Virginia incorporate general water quality protection measures into their comprehensive plans, zoning ordinances, and subdivision ordinances; (ii) the counties, cities, and towns of Tidewater Virginia establish programs, in accordance with criteria established by the Commonwealth, that define and protect certain lands, hereinafter called Chesapeake Bay Preservation Areas, which if improperly developed may result in substantial damage to the water quality of the Chesapeake Bay and its tributaries.” Furthermore, the Act states that “Local governments have the initiative for planning and for implementing the provisions of this chapter, and the Commonwealth shall act primarily in a supportive role by providing oversight for local governmental programs, by establishing criteria as required by this chapter, and by providing those resources necessary to carry out and enforce the provisions of this chapter.”

Agricultural and Forestal Districts: The Local Agricultural and Forestal Districts Act (§15.2-4400 et seq.) indicates that “It is state policy to encourage localities of the Commonwealth to conserve and protect and to encourage the development and improvement of their agricultural and forestal lands for the production of food and other agricultural and forestal products. It is also state policy to encourage localities of the Commonwealth to conserve and protect agricultural and forestal lands as valued natural and ecological resources which provide essential open spaces for clean air sheds, watershed protection, wildlife habitat, aesthetic quality and other environmental

purposes. It is the purpose of this chapter to provide a means by which localities may protect and enhance agricultural and forestal lands of local significance as a viable segment of the local economy and as an important economic and environmental resource.” Agricultural/forestal districts qualify for reduction in property tax rate under land use assessment.

Land Use Assessment: Authorized by the Code of Virginia (§58.1-3229 et seq.), a land use assessment program provides for the deferral of real estate taxes on real estate that qualifies for agricultural, horticultural, forestry and/or open space uses. Assessed values under the program are generally less than those estimated at fair market value. The purpose of such a program is generally to encourage the preservation of land, the protection of natural resources, the supply of safe water, and the promotion of orderly land use planning and development.

Sliding Scale Property Tax Rate: Used in conjunction with a land use assessment program, local governments may reduce the tax rate on properties that agree to remain in their current use for up to 20 years. The sliding scale of tax rates is based upon the length of the agreement.

Sliding Scale Zoning: This zoning method targets land in agricultural zoning districts and is designed to preserve agricultural land and open space. Sliding scale zoning allows a range of density depending on the size of the original lot. As parcel size increases, the density of allowable dwelling units decreases, enabling the preservation of large contiguous tracts of land that can still be farmed or simply preserved as open space. Lots that have been created from a parent parcel cannot be subdivided.

Local “Right-to-Farm”: Virginia’s Right-to-Farm laws (§3.1-22.28 et seq.) make any agricultural or silvicultural operation a “by right” use in agriculturally zoned areas. Special use permits cannot be required for operations in these areas and these operations cannot be found guilty of nuisance. The local variation of Right-to-Farm triggers notification to new or potential purchasers of land in agricultural zones of daily farming activities and possible “inconveniences” (e.g. dust, odors, noise).

State Forest: The Virginia Dept. of Forestry (DOF) manages state forests by balancing a self-supporting operation with multiple benefits, such as timber management, recreation, aesthetics, wildlife, water quality, and stability of the local economy. Operations are funded by the sale of forest products, with twenty-five percent of this revenue returned to the county in which the state forest is located. Special demonstration, research, and recreation areas are sometimes featured in state forests.

Virginia Natural Area Preserves System: Administered by the Department of Conservation and Recreation’s Division of Natural Heritage, the Virginia Natural Area Preserves System protects examples of some of the rarest natural communities and rare species habitats in the Commonwealth. Natural Area Preserves are managed for their rare plants, animals and natural communities. Natural Area Preserve dedication places legally binding restrictions on future activities on a property. Preserve ownership

includes the Department of Conservation and Recreation, local governments, universities, private citizens, and non-profit conservation organizations. Access ranges from low-intensity public access to owner permission.

Virginia Estuarine and Coastal Research Reserve System: The Virginia Estuarine and Coastal Research Reserve System (VECRRS), created in the Code of Virginia (28.2-1103 et seq.), protects estuarine and coastal lands for research and long-term monitoring that supports the Commonwealth's coastal resource management efforts. The Virginia Institute of Marine Science administers the Reserve System, which is coordinated with the Chesapeake Bay National Estuarine Research Reserve in Virginia. A 121-acre research reserve site is located in the Dragon Run watershed.

APPENDIX D: Description of Farm Programs

The **Conservation Reserve Program** (NRCS, 2003a) reduces soil erosion, protects the Nation's ability to produce food and fiber, reduces sedimentation in streams and lakes, improves water quality, establishes wildlife habitat, and enhances forest and wetland resources. It encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filterstrips, or riparian buffers. Farmers receive an annual rental payment for the term of the multi-year contract. Cost sharing is provided to establish the vegetative cover practices.

The **Conservation Reserve Enhancement Program (CREP)** (NRCS, 2003a) aims to improve Virginia's water quality and wildlife habitat by offering rental payments to farmers who voluntarily restore riparian buffers, filter strips and wetlands through the installation of approved conservation practices. CREP is an enhancement to the federal *Conservation Reserve Program*.

The Virginia CREP has two programs. The *Chesapeake Bay CREP* targets Virginia's entire bay watershed and calls for the planting of 22,000 acres of riparian buffer and filter strips as well as 3,000 acres of wetland restoration. The *Southern Rivers CREP* targets watersheds outside the bay drainage basin and will establish 8,500 acres of riparian buffer and filter strip plantings and 1,500 acres of wetland restoration.

The **Environmental Quality Incentives Program (EQIP)** (NRCS, 2003a) was reauthorized in the Farm Security and Rural Investment Act of 2002 (Farm Bill) to provide a voluntary conservation program for farmers and ranchers that promotes agricultural production and environmental quality as compatible national goals. EQIP offers financial and technical help to assist eligible participants install or implement structural and management practices on eligible agricultural land.

EQIP offers contracts with a minimum term that ends one year after the implementation of the last scheduled practices and a maximum term of ten years. These contracts provide incentive payments and cost-shares to implement conservation practices. Those engaged in livestock or agricultural production on eligible land may participate. EQIP activities are carried out according to an environmental quality incentives program plan of operations developed in conjunction with the producer that identifies the appropriate conservation practice or practices to address the resource concerns. The practices are subject to NRCS technical standards adapted for local conditions. The local conservation district approves the plan.

EQIP may cost-share up to 75 percent of the costs of certain conservation practices. Incentive payments may be provided for up to three years to encourage producers to carry out management practices they may not otherwise use without the incentive. However, limited resource producers and beginning farmers and ranchers may be eligible for cost-shares up to 90 percent. Farmers and ranchers may elect to use a certified third-party provider for technical assistance. An individual or entity may not receive, directly or indirectly, cost-share or incentive payments that, in the aggregate, exceed \$450,000 for all EQIP contracts entered during the term of the Farm Bill.

The program targets watersheds, regions, and areas of special environmental sensitivity or other areas facing significant soil, water or related natural resources concerns. By encouraging voluntary landowner participation in these areas, EQIP supports the development and implementation of conservation plans in critical areas. Developed in cooperation with professional resource managers, the plans encompass both scientific management principles, and landowner objectives.

The **Farm and Ranch Lands Protection Program** (NRCS, 2003a) provides matching funds to help purchase development rights to keep productive farm and rangeland in agricultural uses. Working through existing programs, the U.S. Department of Agriculture (USDA) partners with State, tribal, or local governments and non-governmental organizations to acquire conservation easements or other interests in land from landowners. USDA provides up to 50 percent of the fair market easement value.

To qualify, farmland must: be part of a pending offer from a State, tribe, or local farmland protection program; be privately owned; have a conservation plan for highly erodible land; be large enough to sustain agricultural production; be accessible to markets for what the land produces; have adequate infrastructure and agricultural support services; and have surrounding parcels of land that can support long-term agricultural production.

The **FarmLink Program** (Virginia Farm Bureau, 2003) connects farmers who are looking to sell, but wish to see their farms remain active, with people who would like to farm. Currently, the "highest and best use" of most farmland is considered to be in housing lots and shopping malls. As farmers retire or move on, they are often forced to divide up their farmland to pay off debt. In other cases, the land is worth so much more as a "development" site that the farmer finds it impossible to turn this option down. The goal of the FarmLink Program is to curb this trend and maintain the state's agricultural heritage for generations to come.

Prospective farmers and farmers searching for options for their farms each fill out an application form. This information is entered into a database so that farms may be sorted by location, size, type and other features that a potential buyer might be seeking. When it appears that a match is possible, the buyer and seller are both contacted by the FarmLink coordinator. If the farm owner agrees to meet the potential buyer, they are connected. Because many people who are looking to farm cannot afford to buy a farm outright, sellers are asked to consider long-term leases and work-in options in addition to immediate sale.

The **Forest Land Enhancement Program** (FLEP) (NRCS, 2003a) was part of Title VIII of the 2002 Farm Bill. FLEP embodies a commitment to sustainable forest management to enhance the productivity of timber, fish and wildlife habitat, soil and water quality, wetlands, recreational resources, and aesthetic values of forest land. It also establishes a coordinated and cooperative Federal, State, and local sustainable forestry program for

the establishment, management, maintenance, enhancement, and restoration of forests on nonindustrial private forest land.

FLEP is a voluntary program designed to provide technical, educational, and cost-share assistance to promote sustainability of non-industrial private forest. State forestry agencies develop State Priority Plans that provide details for how the FLEP funds will be utilized, including minimum acres, maximum acres, aggregate payment, use for technical, educational and cost-share assistance, and all other factors for the program. Landowners are required to have a forest management plan to be eligible for cost-share. The practices to be cost-shared and the cost-share rate are described in the State Priority Plan.

The cost-share practices are limited to the treatment of 1,000 acres per year on non-industrial private forest (NIPF) with an aggregate payment not to exceed \$100,000 for the life of this Farm Bill. A waiver for the treatment of up to 5,000 acres is available if significant public benefit is shown. There is no limit to the amount of forest land owned by an individual as long as the person qualifies as an NIPF owner.

The **Wetlands Reserve Program** (NRCS, 2003a) is a voluntary program offering landowners the opportunity to protect, restore, and enhance wetlands on their property. The USDA Natural Resources Conservation Service (NRCS) provides technical and financial support to help landowners with their wetland restoration efforts. The NRCS goal is to achieve the greatest wetland functions and values, along with optimum wildlife habitat, on every acre enrolled in the program. This program offers landowners an opportunity to establish long-term conservation and wildlife practices and protection.

The **Wildlife Habitat Incentives Program (WHIP)** (NRCS, 2003a) is a voluntary program for people who want to develop and improve wildlife habitat primarily on private land. NRCS provides both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat. WHIP agreements between NRCS and the participant generally last from 5 to 10 years from the date the agreement is signed.