



John Marshall Soil and Water Conservation District

2016 Annual Report

CONSERVING NATURAL RESOURCES FOR A BETTER ENVIRONMENT

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2016 John Marshall Soil and Water Conservation District Highlights

Fiscal Year (FY) 2016 was busy at the John Marshall Soil and Water Conservation District (JMSWCD). In carrying out our mission to serve and educate the citizens of Fauquier County to ensure the proper stewardship of soil, water, and other natural resources, some of the many accomplishments includes:

Annual Awards Luncheon - The District held its annual awards luncheon on December 16, 2015 at Stoneridge Events Center in Warrenton.

The **Conservation Farm Award** was presented to **Midtrees Farm**. Their most recent practices protect 1,200 feet of stream bank (plus 1,490 feet in Continuing Conservation Initiative), 2.5 acres of riparian buffer, and converting 25 acres of cropland to pasture.

The **TMDL Conservation Farm Award** was awarded to **Daron Culbertson** of Willingham Farm (Marsh Run). Mr. Culbertson has protected 12,200 feet of stream bank while creating over 15 acres of riparian buffer.

The **Clean Water Farm Award** was presented to **Irvin and Nancy Woods**. The Woods have protected all 4,800 feet of stream bank on their property, installed 6 water troughs, and created three hardened stream crossings.

The **Conservation Partner Award** was awarded to **Friends of the Rappahannock**. In three years, this partnership has resulted in the planting of 7,500+ trees/live stakes and 350+ volunteers contributing 1,700+ hours.

The **Conservation Business Partner Award** was given to **Dan Stell** of the Geographic Information System (GIS) Department, Fauquier County. Dan has assisted District staff in upgrading their planning capabilities by providing additional data layers as well as training for new software. This has resulted in higher quality maps for landowners and more accessible data for reporting.

The **Edwin F. Gulick Conservation Educator Award** was presented to **Debbie Fisher**. Debbie is an Ecology and Biology teacher at Fauquier High School, but has worked with the District since the late 1990's. Her students participate in Meaningful Watershed Educational Experiences through visits to Cedar Run to conduct water monitoring.

Virginia Agricultural Cost-Share Program - During Fiscal 2016, Fauquier County farmers and landowners received over \$336,717.83 in cost-share for installing water quality protection practices on their farms. See page 2.

TMDL Program - The Total Maximum Daily Load (TMDL) program for Marsh, Thumb, and Carter Runs nears its end. Details on page 4.

USDA Federal Programs - The Environmental Quality Incentive Program (EQIP) provide landowners with technical assistance to install both structural and management conservation practices. See page 3 for details.

Educational/Outreach Programs - A record 5,293 students, parents, teachers and members of the public participated in educational programs conducted by the District. See pages 6-7.



From left to right: Debbie Fisher, Bryan Hoffman representing Friends of the Rappahannock, Dan Stell, Daron Culbertson, Janice and Karen Dorschner, and Nancy and Irvin Woods

Virginia Agricultural Cost-Share and Tax Credit Programs

The Virginia Agricultural Cost Share and Tax Credit Programs provide financial incentives for the installation of more than 60 different best management practices (BMPs) that improve water quality and conserve valuable soil resources. Farmers and landowners that implement agricultural BMPs can qualify for reimbursement on allowable expenses, as well as a 25% credit on their Virginia State income taxes for their eligible out-of-pocket expenses. The tax credit can be as much as \$17,500.

Much of 2016 has been focused on working through the large number of practices signed up under the 2015, 100% cost-share program. For nearly thirty years the John Marshall Soil and Water Conservation District has been administering this program on a roughly 75% cost-share basis. 2015 was the last year of a three year period when the cost-share rate had been increased to 100% on livestock exclusion practices in a effort to meet the Commonwealth’s water quality goals. This generated an unprecedented number of applications which we are implementing as funding becomes available.

In 2016 the cost-share rate for livestock exclusion practic-

es was reduced to 80%. Although not as beneficial as last year, this is still a great deal. As a result, applications for our programs continue to come in and we were able to complete many great practices.

Another program completed in 2016 was the recertification of voluntary practices. This allowed the district to record practices that were implemented voluntarily or through our programs in the past but are no longer under contract. With permission from each landowner, these practices were inspected and reported so as to record their ongoing water quality benefit.

To be eligible for cost-share or tax credit through the District, practices must be designed in consultation with JMSWCD staff to meet state and federal specifications, be included in a conservation plan, and approved by the District Board prior to construction. Since 1985, JMSWCD has paid Fauquier County farmers \$8,261,542.19 to install conservation practices on agricultural land. In FY 2016, \$336,717.83 was paid out in cost-share and \$20,064.41 in tax credit certified for practices that significantly improve and protect water quality.

2016 Virginia Agricultural Program Highlights

PRACTICE	DESCRIPTION	INSTALLED	DOLLARS SPENT
Stream Exclusion (SL-6, WP-2, LE-2)	Fences livestock from streams, provides alternative water sources, and crossings	40,180 feet of stream bank protected, 41 acres of riparian buffer created	\$336,717.83 Cost-Share \$9,122.26 Tax Credit
Voluntary Stream Exclusion (VSE-5, VSL-6, VWP-2)	Voluntary livestock exclusion practices	72,293 feet of stream bank protected, 78 acres of riparian buffer protected	\$0.00
Small Grain Cover Crop (SL-8B and SL-8H)	Small grain, winter cover crop on cropland	1,092 acres in cover crops	\$9,926.60 Tax Credit
Cropland Conversion (SL-1)	Plants perennial grass on cropland to reduce soil erosion	14.4 acres of grass	\$1,015.27 Tax Credit
Summary		112,473 feet of stream bank protected, 4,026.50 acres of conservation treatment*	\$336,717.83 Cost-Share \$20,064.13 Tax Credit

*Acres of conservation treatment includes all acres on a property (including crop fields, grazing paddocks, riparian buffer, etc.) which have benefited from the implementation of a conservation practice.

USDA Federal Programs

There are several voluntary USDA Natural Resource Conservation Service (NRCS) programs available to landowners and operators in Fauquier County that help provide cost-share assistance to install conservation practices. They are the Conservation Reserve Program and the Environmental Quality Incentive Program.

There are also easement programs available to protect wetlands and farmland. All of these programs for 2016 were funded through the 2014 Farm Bill. These federal dollars would not have been available to landowners/operators without the assistance, and sponsorship of the John Marshall Soil and Water Conservation District.

The Conservation Reserve program (CRP) is usually piggy-backed with another District Program called Conservation Reserve Enhancement Program (CREP). This program encourages landowners to convert highly erodible cropland, marginal pasturelands, or environmentally sensitive acreage to vegetative cover such as warm season-grasses, or mast producing trees. There are 18 CRP/CREP contracts which are being reviewed for renewal.



Fencing livestock out of ponds and streams can greatly improve water quality and can also improve herd health.

The Environmental Quality Incentive Program (EQIP) and the Conservation Stewardship Program (CSP) provide landowners with technical assistance to install both structural and management conservation practices on eligible agricultural lands. In 2016, six contracts are preapproved for landowners protecting 440 acres with \$166,824 federal dollars obligated to landowners.

The Conservation Stewardship Program made \$8,714 in annual payments to landowners for their continued conservation and protection of 417 acres of farm and forestal lands in Fauquier County. Other easement programs protect agricultural and forestal lands by setting aside environmentally sensitive areas such as grassland meadows or wetland marshes from development. Starting in 2013, two Fauquier landowners began participating in the NRCS Wetland Reserve Program (WRP). \$28,800 in Federal funds will be used to restore and enhance the WRP sites for wetland species. Also, the Agricultural Conservation Easement Program can help the County with matching funds to preserve some of their prime farmlands as a resource base for future generations.



NRCS District Conservationist Roger Flint inspects an eroding drainage area on a local farm.

Inter-Agency Cooperation

The JMSWCD works closely with several other government agencies to meet its technical and educational goals. Staff from other agencies frequently assist the District in conducting technical field assessments, educational programs, and field days. JMSWCD staff in return, have extended their technical expertise to assist other agencies with their programs.

In the last year, personnel from Virginia Cooperative Extension, Virginia Department of Forestry, Department of Conservation and Recreation, Fauquier Community Development, and numerous volunteers from local farms, the Fauquier Master Gardeners, and Piedmont Environmental Council have assisted with District programs. District staff have made presentations on best management practices, cost share programs, and stream monitoring.

Agricultural TMDL Planning and Implementation

In June 2016, JMSWCD completed work on two local TMDL (Total Maximum Daily Load) grant programs. Both projects focused on restoring local impaired streams through the installation of agricultural and residential (septic system) best management practices which reduce bacteria-laden run off. The first TMDL grant which began in 2006, targeted Great, Deep, Thumb and Carter Run watersheds.

Since a significant number of practices were implemented, particularly in the Thumb and Carter Run watersheds, the grant was extended several times in hopes of delisting these two streams. A final grant extension was approved so that practices currently under construction in those watersheds, can be completed and paid by December 2016.

JMSWCD began work on the Marsh Run TMDL grant four years ago. A final report for this project was submitted to state agency partners in July 2016. Water quality and aquatic habitat improvements were noted, particularly in the lower Marsh Run watershed. During the Marsh Run grant implementation period, a total of 16 separate livestock exclusion projects and three SL-1 (permanent vegetative cover on cropland) practices have been completed in the Marsh Run drainage, for a total of 58,015 feet (11 miles) of stream bank protection, 87 acres of newly created riparian buffer and 58 acres of cropland to permanent

cover conversion. Four of the 16 livestock exclusion practices were installed in FY 16.

This year in the Thumb and Carter drainages, a total of nine additional livestock exclusion projects, protecting 27,275 feet of stream bank, were completed (See chart below for breakdown). This brought the multi-year grant total to 91 projects which has protected over 348,060 feet (66 miles) of stream bank. Two additional livestock exclusion practices located in Thumb and Carter Run watersheds were approved and carried over to the new fiscal year.

As a part of community outreach efforts, two educational and stewardship (tree planting) programs were held in the TMDL watersheds in cooperation with Friends of the Rappahannock and Piedmont Environmental Council.

JMSWCD continues to perform bacteria monitoring at key sites in each of the TMDL watersheds. In addition, post-BMP installation studies are being conducted on farms in Great, Thumb, Carter, and Marsh Runs drainages.

As a part of both TMDL grants, JMSWCD completed work on a pasture management pilot project modeled after the federal prescribed grazing program. In FY16, three additional producers enrolled in this program which focuses on rotational grazing and forage management.

2016 TMDL Program Highlights

Watershed	FY16 Completed Projects (All Funding Sources)	Stream Bank Protection (ft.) (Installed with TMDL funds)	Cost-Share (TMDL Funds Allocated)
Thumb Run	6	21,350	\$167,386.70
Carter Run	3	5,925	\$65,106.75
Thumb and Carter Runs TOTAL	9	27,275	\$232,493.45
Marsh Run Stream Exclusion	4	9,575	\$131,832.58

Watershed	Completed Projects (FY 2016)	Pasture Management (acres)	Cost-Share
Marsh Run	2	113.7	\$8,527.50
Carter and Great Runs	2	73.6	\$5,322.75
TOTAL	3	177.3	\$13,850.25

TMDL Residential Programs

In the original Residential TMDL Implementation Plan for Fauquier County there were four watersheds Thumb, Great, Carter, and Deep Runs. During FY16, funds were approved to continue work in Thumb and Carter Runs due to the number of practices that had been installed and opportunity for water quality improvements. JMSWCD also continued promoting the Marsh Run Residential TMDL Implementation Plan which includes Craig, Brown, and Marsh Runs. The final practices were completed in June 2016, and reports were submitted in July. Two Alternative On-Site Sewages Systems were completed in cooperation with Foothills Housing Corporation which assists homeowners with limited resources. The Fauquier County Health Department provided technical assistance to the projects.

Local TMDL programs address high levels of *E. coli* bacteria in specific streams. Although not always harmful themselves, *E. coli* are indicator organisms for the presence of waste (and other harmful bacteria) from the intes-

tinal tracts of warm blooded animals. Humans, wildlife, livestock and pet waste can all potential sources of the bacteria that wash into streams in Piedmont Virginia. In areas with aging infrastructure and certain types of soils and drainage patterns, the threat becomes more acute. Through its grant funded local TMDL programs, JMSWCD offered cost-share assistance for septic system maintenance, repair, and in limited cases, replacement.

The TMDL residential program was promoted through a series of direct mailings and visits to homeowners. Information was also included in educational programs with community organizations and articles in local media.

Fiscal year and cumulative totals are listed in the chart below. Practices completed include pump-outs, septic system repairs, septic tank system installation and pump replacement, and Alternative On-Site Waste Treatment Systems. The cost-share rate for these practices ranges from 50% to 75% with caps on the various practices.

2016 TMDL Residential Program Highlights

Practice	Thumb and Carter Watersheds 7/1/15 – 6/30/16	Cumulative Totals TGCD 7/1/06 – 6/30/16		Marsh Watershed 7/1/15 – 6/30/16	Cumulative Totals Marsh 4/1/12 – 6/30/16	
		# Practices	Cost-Share		# Practices	Cost-Share
RB-1	2	250	\$31,402.50	7	22	\$3,000.00
RB-3	2	67	\$83,357.28	1	2	\$5,025.00
RB-4	0	12	\$47,786.31	0	1	\$4,500.00
RB-4P	0	3	\$12,774.00	0	2	\$10,800.00
RB-5	0	2	\$25,000.00	4	4	\$50,000.00



A nearly finished watering system sits on a farm in the Marsh Run watershed. This project was completed with the assistance of TMDL grant program funds.

Educational Programs

The John Marshall SWCD conducted conservation education programs for 5,293 individuals in FY 2016; the most individuals ever reached through the education program in a single year in the history of JMSWCD.

District employees worked with elementary through high school age students, and adult audiences, providing information on a variety of conservation topics such as point and nonpoint source pollution, water quality, stream monitoring, soils, and best management practices. Programs are customized to meet the needs of the groups requesting the programs. Participating students represented public, private, and home schooled youth. Adult participants included teachers, parents, chaperones, farmers, and other interested citizens.

During FY 2016, the JMSWCD educational programs included:

High School Monitoring - Students from Deb Fisher's Fauquier High School Ecology classes conducted water quality testing at Cedar Run. Kaitlyn Smoot's Kettle Run High School Ecology and AP Environmental Science classes conducted monitoring on South Run at Vint Hill Park. At both locations, students monitored stream velocity, width, depth, turbidity, temperature, pH, nitrates, phosphates, and dissolved oxygen, as well as collecting macroinvertebrates on a monthly basis.

Liberty High School Monitoring - Water monitoring demonstrations were given for Chandra Wilkemeyer and Sue Saunders' Ecology classes. Students practiced monitoring for temperature, pH, nitrogen, phosphate, and dissolved oxygen.

Conservation Field Days - A conservation field day was held in September at Kinloch Farm for Wakefield School's 25 sixth-grade students and teachers. Over 180 seventh-grade students, teachers, and chaperones from Taylor Middle School participated in a conservation field day at Messick's Dairy Farm in October. Field days were also coordinated for approximately 650 third grade students, teachers, and chaperones at local farms over two days in April. The Fauquier Education Farm in Warrenton and Choice Longhorns in Bealeton were the hosts for these events. For all of these days, guest instructors presented talks on cattle, water quality/macroinvertebrates, soils, forestry, and insects among others.

Educational Displays - JMSWCD personnel set up and staffed educational displays at several events, including the Fauquier County Fair, Fauquier Public Schools Benefits Fair, Goldvein Jubilee, and the Crockett Park Children's Festival.

Point and Non-Point Source Pollution - The Enviroscope model was used to demonstrate the impact of everyday rural and urban events on watershed health to over 300 3rd, 4th, and 6th grade students.

Soil Studies - 516 third grade students received hands-on instruction in soil studies, learning about structure and texture, the soil profile, and soil testing. All students made and took home soil tubes.

Soil Tunnel - Over 500 youth crawled through John Marshall's soil tunnel at school events, the Crockett Park Children's Festival, and other events.

Leaf Pack Project - The District helped the Ecology Club at P.B. Smith Elementary School and 5th grade students at Brumfield Elementary School conduct the Leaf Pack project which studied macroinvertebrates from Cedar Run, Great Run, Thumb Run, and Fiery Run.

Trout In The Classroom - In the fall, the District delivered eggs to schools to raise Brook Trout. In the spring the District helped schools release them in local streams.

Other Events - Staff members assisted with the Culpeper SWCD Meaningful Watershed Educational Experience, staffed the Virginia Association of Soil and Water Conservation Districts' display at the State Fair of Virginia, and assisted the Town of Warrenton with Arbor Day activities.



A student catches a fish while electrofishing at Youth Conservation Camp.

Community/Outreach

Web Presence

This year, as part of the County update, the District redesigned our website to include more information and make it more user friendly. Our web address has not changed and is still www.johnmarshallswcd.com. The District also maintains a Facebook page which is used to disseminate conservation information. To follow us, go to www.facebook.com/jmswcd.

Water Quality Monitoring

JMSWCD staff and volunteers continued monitoring sites for macroinvertebrates. Streams are monitored quarterly and data entered on the SOS website. Sites on Thumb Run, Great Run, and Marsh Run were tested on a monthly basis for *E. coli* in cooperation with DEQ. Bacterial colonies were grown in the office using the Coliscan Easygel, and results entered on the DEQ website. Streams were also monitored for nitrogen, phosphorus, pH, and dissolved oxygen, and *E. coli* to serve as baseline data before new conservation practices are established.

Tree Planting

Over 100 students and adults helped plant trees on more than 10 acres of riparian buffers on five farms. Students received lessons on how to plant trees and the benefits of trees for water quality.

Community Events

On May 10, the District celebrated its 50-year anniversary with an event in Warrenton. A resolution passed by the Fauquier County Board of Supervisors and a House-Joint resolution were presented. Speakers included former directors Mr. Henry Green and W.C. Brown.

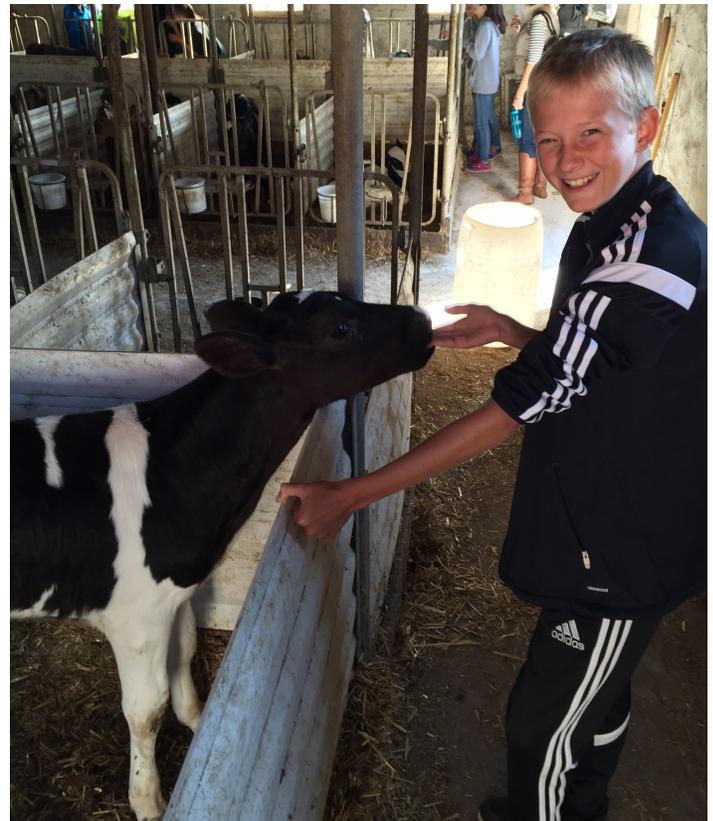
The second annual From the Rappahannock, For the Rappahannock event was held at Marriott Ranch. In the morning, volunteers planted trees to restore a riparian buffer and in the afternoon, Rappahannock River oysters were served and tours of the conservation practices were held.

Rain Barrels

The John Marshall SWCD purchased and sold 6 Earth-Minded rain barrels to local citizens.



Fauquier County employees help John Marshall SWCD plant trees on a local farm in honor of Earth Day.



A student and a calf at the Messick's Dairy Farm 7th Grade Farm Field Day.

John Marshall Soil and Water Conservation District

98 Alexandria Pike, Suite 31
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Hours: 7:30 am-4:30 pm
Monday-Friday

District Directors

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TMDL Specialist
Kris Jarvis
Conservation Education Specialist
Michael Trop

NRCS Staff

District Conservationist
Roger Flint
Soil Conservationist
Casey Dietzen Iames

2016 Annual Report

The Annual Report is a yearly publication of the John Marshall Soil and Water Conservation District

The Vision of the John Marshall Soil and Water Conservation District is to serve the citizens of Fauquier County as the leader in ensuring proper stewardship of soil, water and related resources.

The Mission of the John Marshall Soil and Water Conservation District is to provide leadership, technical assistance, and education to the citizens of Fauquier County in proper soil stewardship and water quality protection to ensure the wise use of the county's natural resources.

Support

The Fauquier County Board of Supervisors supports the John Marshall Soil and Water Conservation District through an annual contribution and provides administrative assistance through the Department of Finance, the Department of Human Resources, and the IT Department to administer payroll, benefits, personnel matters and provide IT support.

The Commonwealth of Virginia supports the John Marshall Soil and Water Conservation District through financial and administrative assistance provided by the Virginia Soil and Water Conservation Board and the Department of Conservation and Recreation.

Board Meetings

The District conducts monthly board meetings to deal with conservation issues and landowner concerns within Fauquier County. The public, as well as cooperating agencies, are invited to attend meetings and provide input. Unless otherwise noted, meetings are held on the second Wednesday of each month at 4:00 pm at the John Marshall Soil and Water Conservation District office at 98 Alexandria Pike, Suite 31 in Warrenton.

All programs and services are offered on a nondiscriminatory basis without regard to race, color, religion, national origin, gender, age, disability, political beliefs, sexual orientation, marital or family status.