



December 12, 2018

Directors & Partners:

The Winter Quarterly Meetings of the West Virginia Association of Conservation Districts Board of Directors will be held **January 22-23, 2018 at Days Inn, Sutton, WV.**

There is a block of rooms at Days Inn. To make your reservations, you may call **(304)765-5055 or (855)680-3239**. The room rate has been set at \$89.99. The deadline to make reservations is January 12, 2019. You will need to indicate that you are with WVACD when making reservations. Your urgency in making reservations in order to ensure room availability would be greatly appreciated.

The WVACD Executive Committee Meeting will be held at 10:00 a.m. on Tuesday, January 22, 2019, and the Legislative Committee Meeting will be held at 11:00 a.m. on Tuesday, January 22, 2019.

If you have any questions concerning the meeting, please contact me at (304)272-6422. I look forward to seeing you at the January meeting.

Sincerely,

Bill Stewart, President
WV Assoc. of Conservation Districts

West Virginia Association of Conservation Districts

Board of Directors Meeting

Days Inn, Flatwoods, WV

January 22-23, 2019

AGENDA

TUESDAY, JANUARY 22, 2019

10:00 a.m.	WVACD Executive Committee	President, Bill Stewart
11:00 a.m.	Legislative Committee	Chairman, Timothy VanReenen

LUNCH ON YOUR OWN

1:00 p.m.	WVACD Quarterly Meeting Call to Order	President, Bill Stewart
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Proxies (if any)

Room Assignments/Instructions

1:15 p.m.	Standing Committees Meet	
	<ul style="list-style-type: none">• Conservation Education• District Operations• Natural Resources• Water Resources	Chairman, Mark Fitzsimmons Chairman, Wayne McKeever Chairman, John Pitsenbarger Chairman, Jim Michael

4:30 p.m.	WV State Fair Committee	Chairman, Clyde Bailey
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5:00 p.m.	DINNER ON YOUR OWN	
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WEDNESDAY, JANUARY 23, 2019

8:00 a.m.

Call to Order

President, Bill Stewart

Pledge of Allegiance

Secretary, Jim Foster

Prayer

Reading of October 2018 Minutes

Secretary, Jim Foster

Financial Report

Treasurer, Shirley Hyre

Standing Committee Reports

- **Conservation Education**
- **District Operations**
- **Legislative**
- **Natural Resources**
- **Water Resources**

Chairman, Mark Fitzsimmons
Chairman, Wayne McKeever
Chairman, Timothy VanReenen
Chairman, John Pitsenbarger
Chairman, Jim Michael

10:00-10:15

Break

10:15-10:45

Guest Speaker

Chuck Copeland, Asst. State Forester

:45-11:15

Partnership Reports/Updates

- **RC&D**
- **NACD**
- **FSA**
- **NRCS**
- **WVCA**
- **WVACD**

Joe Gumm, President
Joe Gumm, Representative
Roger Dahmer, State Executive Director
Louis Aspey, State Conservationist
Brian Farkas, Executive Director
Bill Stewart, President

11:15

Unfinished Business

12:00

Adjournment

MINUTES OF MEETING
West Virginia Association of Conservation Districts
Board of Directors Meeting
October 15-16, 2018
Days Inn, Sutton, WV
DRAFT

The Fall Quarterly meeting of the West Virginia Association of Conservation Districts Board of Directors was held October 15 & 16, 2018, at Days Inn, Sutton, WV.

Members Present:

Bill Stewart, Guyan CD -President
Wayne McKeever, Upper Ohio CD, 1st
Vice-President
Lin Dunham, Eastern Pan. CD – 2nd
Vice-President
Jim Foster, West Fork CD - Secretary
Shirley Hyre, Elk CD – Treasurer
Terry Hudson, Capitol CD
Frank Naab, Jr., Capitol CD
Jim Michael, Eastern Pan. CD
John Pitsenbarger, Elk CD
Gary Sawyers, Greenbrier Valley CD
Timothy VanReenen, Greenbrier
Valley CD
Mike Adkins, Guyan CD
Bob Buchannon, Little Kanawha CD
Roger Shaver, Little Kanawha CD
Art Mouser, Monongahela CD
Mark Myers, Monongahela CD
Mark Fitzsimmons, Northern Pan. CD
Dave McCardle, Northern Pan. CD

John Farrell, Southern CD
Ray Lafferty, Southern CD
Sheldon Findley, Tygarts Valley CD
Robert True, Jr., Tygarts Valley CD
Jane Collins, West Fork CD
Charles Lipscomb, Western CD
Jim Withrow, Western CD

Supervisors Present:

Clyde Bailey, Capitol CD
Danny Lutz, Easter Pan. CD
George Mathis, Guyan CD
Jean Conley, Monongahela CD
Randall Patton, Southern CD
Joe Gumm, Tygarts Valley CD
James Nester, Tygarts Valley CD

Others Present:

Brian Farkas, WVCA
Kim Fisher, WVCA
Jeremy Salyer, WVCA
Andy Deichart, NRCS
Laura Smith, NRCS
Kelley Wayne, WVACD

Call to Order

WVACD President Bill Stewart called the meeting to order at 9:06 a.m. on Tuesday, October 16, 2018.

Pledge of Allegiance

Jim Foster led the group in the Pledge of Allegiance.

Reading of July 11, 2018 WVACD Minutes

Michael moved to approve the July 11, 2018, WVACD meeting minutes. Lafferty seconded. Motion carried.

Foster announced proxy Bob Buchanan for Mike Nichols, Little Kanawha CD. He also presented a plaque from Kelly Irvine of WCD issued to WVACD in appreciation for a scholarship. It will be displayed in the WVACD office.

Financial Report

Shirley Hyre presented the WVACD financial report explaining the percentages displayed on the report cover page, as well as the earmarked monies.

Pitsenbarger moved to approve the 3rd quarter financial report. Lafferty seconded. Motion carried.

Standing Committee Reports:

Conservation Education Committee Report – Mark Fitzsimmons, Chairman:

Scholarship Live Auction

Fitzsimmons issued thanks to those that helped in any manner with the auction including the Ladies Auxiliary, those who donated items, buyers and others. The total brought in for the auction was \$3,321.00.

Envirothon Competition

The winning Ravenswood team competed in Idaho on July 23-27. Fifty-three teams competed in which the WV team placed 35th due to low oral presentation scores. The team did place 1st in the current Environmental Issue and in the top five in the Forestry division where only 2.5 points separated them from 1st place. We congratulate the team on a job well done and for being the first team from WV to take first place score in a station area.

The 2019 Envirothon will be held April 17-18, 2019 at Canaan Valley with set up for the event being April 16th. Meetings are the first Wednesday of each month with the next meeting being November 7th at the WVACD office. The annual Teacher Training was held at Holly Gray Park with 20 teachers in attendance, six of those coming from new teams.

The WV Envirothon Committee was awarded the 2018 Education Award for excellence in hands on environmental education for youth by the WV Forestry Association. That is something to be proud of as our business is education.

Century Farm Program

The program issued 10 new centennial (100 year) farms, 3 new sesquicentennial (150 year) farms and 8 new bicentennial (200 year) farms this year.

All names for 2019 must be submitted to the districts by February 1, 2019.

Conservation Education Council

The next meeting will be held on October 23, 2018 at the Mt. Clare West Fork CD office at 10:00 a.m. The council meets twice a year. This is the only group Fitzsimmons is aware of that takes every educational program and presents it. Someone from every district should attend.

Dunham thanked Fitzsimmons for the work he does on the committee.

District Operations Committee – Wayne McKeever, Chairman:

The committee is working on trying to improve aspects of the association. One of the small improvements is the seating arrangement during the meeting, pulling the extra seating chairs around the table instead of being lined up in the back.

The committee is working on updating the By-Laws and creating a policy manual for the WVACD. They are hoping to be finished or near finished with these projects by the next quarterly meeting.

Quarterly Meeting bids for the spring and summer meetings were opened up to the districts. We received two bids. Northern Panhandle CD submitted a bid for the summer meeting to be held at the Highlands Event Center. Southern CD submitted bids for both the spring and summer meetings to be held at Pipestem State Park.

McKeever moved to hold the Spring Quarterly Meetings April 22-23, 2019 at Pipestem State Park and the Summer Quarterly Meetings July 15-16, 2019 at the Highlands Event Center. Lafferty seconded. Motion carried.

We are still obtaining bids for the WVACD webpage. There is a lot to go into this project. We are expecting 30-35 pages of information. Kelley Wayne will have access for the upkeep of information after development of the site with another individual being designated at a future date as a back up for her. Standing committees will need to report to Wayne in order to keep information current and the website successful. The initial information will need to be collected in order for the website to be designed. We hope to have this up and running by the next quarterly meeting.

State Fair

Bailey reported on the preliminary meeting of the committee. The 2019 fair will be held August 8th-17th. It will mark the 95th year of the fair. Please call your District Manager to place your name on a slot to work the booth at the fair and include your cell phone number for contact during the fair. The booth must be manned from 9:00 am to 9:00 pm per fair board regulations. Make your reservations early to guarantee a room. The block of rooms will be reserved at Fairfield Inn and can be reached at (304)645-7999. McKeever mentioned what a great opportunity this is to communicate with the public.

McKeever discussed the change in supervisor per-diem rates. The State Conservation Committee has approved increasing the amount to \$80 per day; however, this is a decision that needs to be made on a district to district basis per your budget.

Foster will send more detailed information to districts about road signs. They should fall somewhere in the \$200 range with the quote coming from the company who made them previously. WVACD will front the money for the signs with districts reimbursing. Bailey stated that the WV correctional institute may have options for the signs. They follow DOH guidelines, the work would remain in state and it would be worth a price check.

Supervisor communication is key. Information received by the District Managers should be sent to supervisors on the same day it is received. If there is a problem, please see your District Manager about it and if necessary, contact Brian Farkas for solution.

There was some miscommunication regarding this award banquet. The planning of this event needs to be improved. Foster and Fitzsimmons are on the awards meeting committee which meets in July. Issues should be addressed by then and hopefully make next year's event clearer. There were questions about the \$125 registration fee. Belinda Withrow sent McKeever detailed information about where the money goes from that registration fee. There is an expected balance of \$18,000 for the 2018 year. Please see McKeever if you have any other questions about the allocations for the registration fee.

Quarterly Meeting attendance is dwindling. This needs to improve. We need new ideas to keep moving forward. We are becoming too stagnant. We have discussed when, where and how long the meetings will be held. A committee was formed consisting of Buchanan, Withrow and Lutz to explore those options. They will report back at the next quarterly meeting. Please share your ideas with this committee.

Michael and Withrow both commented that more supervisors need to attend the meetings so that they can get a better feel for what is going on and become more involved. All supervisors are welcome to attend, and we wish to hear your ideas. Foster reminded all that every supervisor is a member of the WVACD with dues being paid by the district. Lack of money in the budget for multiple supervisors to attend could be an issue. Hyre stated she was in favor of inviting all supervisors to attend but reminded directors it is their job to report back the information to the districts so that they know what the WVACD is doing to maybe encourage interest. Withrow suggested sending a physical letter to the District Managers for them to share at their meetings. McKeever agreed that being a possibility. Michael mentioned the lack of NRCS representation and Hyre responded that they have cited staff and budget cuts as reasons for sending fewer representatives. Withrow mentioned the fact that changes will be inevitable without more district representation.

Training is key in order to keep current and to do our jobs better. Farkas has the results of the questionnaire that was sent around but hasn't compiled it yet. Free training is available through places such as WVU, WVCA and other agencies that we need to take advantage of. It is our job to keep up with training. Farkas has agreed to provide information to the districts about training available. Hopefully by the next quarterly meeting there will be more information.

We need to be more proactive in promoting the conservation districts. We need to be willing to try some new things in order to move forward. McCardle detailed how NPCD is having an

outreach service at the office. All agencies in the office will make a 5-7 minute presentation about the services they offer and equipment they have to rent. A search was conducted to find farmers who had never taken advantage of any of the programming. Fitzsimmons challenged each supervisor to bring two new farmers. There are currently 32 new farmers registered to attend. The district is covering all costs of the event, including a dinner, so there is no cost to attendees. They will report back at the next quarterly meeting as to the success of the event.

Stewart mentioned educating supervisors by attending and assisting with the Envirothon. It is a great event to reach out to those in your district. Speaking with the students involved will help us stay current in our work.

Legislative Committee – Timothy VanReenen, Chairman:

The Legislative Breakfast is scheduled for January 30, 2019 at 7:30 a.m. at the Gaston Caperton Center. The food has been covered as usual. Please get the word out and encourage attendance of supervisors and your local elected officials. This is an election year so pay attention to the newly elected. The House of Delegates and Senate will receive a postcard invitation, but nothing will work better than a personal invitation. Having a local meeting to speak with the representatives from your area before the breakfast is a good idea, but we should be doing this multiple times a year to encourage rapport. We need to educate officials in what we do to garner their support, even if it is not financial. They are making decisions that affect what we do. We are not out to get more money, but to keep from having more budget cuts.

Much discussion was held during the committee meeting on the topic of what the future of conservation is and how do we get the district to work for the 21st century.

VanReenen moved to solicit information from each district in a two-part question: What does your district see is the future of conservation? What changes need to be made legislatively in order to make that happen. Pitsenbarger seconded. Motion carried.

VanReenen expanded on the motion by asking each of those in attendance to carry that motion back to their districts for discussion. The WVACD is the collective group of every supervisor, every district in this state. We don't normally approach the legislation with a list of legislation we would like to see passed. That is our fault. Our goal with this motion is to compile the information we receive, bring it up at the January meeting, refine it by the April meeting, vote on it at the July meeting as an Association and move forward late summer and fall getting the word out on what we want so that by the time they go back they know what the WVACD wants legislatively for a brighter future in conservation. VanReenen will be following up with District Managers with those questions.

Withrow stated that we need to know what our goal is as conservation supervisors. We tend to forget that we're not here just for the farmer, we are supposed to be conservation minded.

VanReenen says that he feels as if there is negative vibe. Several attended the Northeast conference and we are honestly doing better than some. We need to focus on the positive of what we are doing to negate that vibe. NRCS has granted \$75,000 to be used for education purposes and we need to focus on those attributes to fill in the holes of the negative ones.

Natural Resources Committee - John Pitsenbarger, Chairman:

Appalachian Grazing Conference

Joe Gumm reported to the committee on the conference. He encouraged each of us to invite farmers and increase attendance to the conference.

AgEP

Jennifer Skaggs reported that payments are coming in slow due to some issues from the state, but the money will be there. It is not the WVCA, but the state causing the delay. Skaggs will now be in charge of the southern part of WV with a new employee to take charge of the northern part.

Laura Smith with NRCS, who will speak later, updated the committee for Louis Aspey, who could not attend. Last year over \$12 million came into our state through NRCS. They will be shut down for about a week in January to update programming.

Naab gave an Apiary Presentation to the group. If you have bees, you need to register them with the state. There is a free liability insurance offered through them. It covers someone who may come on your property and get stung, or damage to a hive from outside sources. Naab will be leaving WVACD due to moving to another state. He will be missed.

Water Resources Committee - Jim Michael, Chairperson:

Michael stated that he thought everyone would agree we had plenty of water this year. Gene Sauborn reported for Emergency Watershed Protection. There were eight counties under review with only one site being approved for assistance in Hampshire County. There is a new number to call to report flood damage or stream blockage to ensure that calls are directed to the appropriate project section staff, which is 304-872-4302.

Operations, Maintenance & Repair was discussed. Approximately \$300,000 has been paid to date. The annual fall inspections are underway. Keep in contact with the watershed manager in your area for updated schedules. The five-year maintenance plans were discussed with future sponsors being a topic to continue the maintenance of the programs. Farkas will be sending a letter to each sponsoring organization. They will meet to discuss the cost of maintenance and to review their annual contribution. Channel maintenance will need to be reviewed at some point in the future. Sauborn also reported on the dam rehab program.

Diechart reported from NRCS programs. The Upper Deckers Creek Site 1 was scheduled to be completed by the end of this year, but it will not meet that completion date. They have received funding for the Wheeling Creek and Brush Creek sites currently in planning phase. NRCS continues to work with WVCA to address operation, maintenance and repair needs identified at dam sites during inspection. They have completed most of the 2018 dam inspections. WV received over \$5 million for six projects for watershed operations.

The SSRP will cover stream bank erosion up to 500 feet with a maximum cost share of \$5,000. The final rules will be sent to each district in the near future.

PARTNERSHIP REPORTS/UPDATES:

Joe Gumm, President, RC&D:

The state committee met on October 15th. Farkas wanted everyone to be reminded that the sooner the councils get their reports in, the sooner they will get their funding. The By-Laws were revised. Officers were elected with Gumm remaining president. The History committee is continuing to work on the new edition of the Footprints book. Please send any information for the book to Gumm or Hyre.

Joe Gumm, NACD

There is a packet of information, as usual, supplied for each director. There is a letter contained within from President Brent Van Dyke congratulating WV on their continued dedication in training conservation leaders. Notes from the 2018 Summer NE Regional meeting are contained, as well as notes from a roundtable discussion. Please review these and take the information back to your districts. An email from Jeremy Peters, the new CEO of the NACD is included detailing projects. He has established a new Communications Committee. The committee will entail encourage and stimulate other standing committees to do more and be more active. It has been an active committee, of which Gumm is a member.

The NACD 2019 meeting will be held toward the beginning of the year in San Antonio, TX. The summer board meeting will be in Sante Fe, NM in July 2019.

Appalachian Grazing Conference is set for March 7-9, 2019. Brochures are readily available. This conference is made up of all the partnerships and is designed to help the farmer help themselves. We need funding to keep the conference going, but more importantly, we need to have supervisors to get two to three farmers from each of their counties to attend. In the past, there have been 300+ attendees, but this year we are shooting for 500. A tour will be available once again. It will take place on Thursday of the conference at 2:00. See Gumm or Foster if you need more information.

The National Grasslands Committee will meet the first week of December in Reno, NV. Four representatives from WV will be attending the conference and will bring a report back to the next quarterly meeting.

Roger Dahmer - FSA:

No representatives available.

Louis Aspey - NRCS:

Andy Deichart reported for Aspey in his absence. The State Technical Committee meeting is Wednesday, October 24th in Morgantown. FY19 began October 1, we are under a continuing resolution until December, but we expect the budget to be similar as FY18. We are expecting to get \$100-\$150 million nationally for the watershed programs. We will continue to work with partners to identify potential projects within the watershed program. The House and Senate both passed their versions of the new Farm Bill. They are conferencing to resolve differences. A final bill is expected by the end of the year. FY18 was a record year with \$13 million being distributed for Farm Bill programs. These are a direct result of the conservation partnership we have in WV.

Laura Smith presented on programming. She introduced Matt Oliver, Easement Specialist, and Jeff Griffith, District Conservationist for WFCD, who were in attendance. FY18 was a banner year for Farm Bill programs, EQIP, AMA and CSP, totaling \$12.8 million over 708 contracts in WV, which is a record for us. That is a testament to a focus on a conservation approach on all levels, including local. Any District Conservationist can pull an aggregate report if you are interested in any details of the programs at any time.

FY19 will be a challenging year for Farm Bill. We are currently at a standstill. They gave us an option for an early obligation roll out. It is limited to certain sub-accounts. Your District Conservationist just recently received the information and media releases were sent out. You may contact them if you need more information. It is very limited to national initiatives. Those contracts must be obligated by January 31st. Please bear with your District Conservationist as they will be extremely challenged to maintain the deadlines.

After January 31st, if the new Farm Bill passes the NRCS contracting system will shut down to implement a new ranking tool. It will present its own set of challenges. It will be after February 14th before we even think about ranking local sub-accounts. We are taking the recommendations to the State Technical Committee next week and you should receive your letter ranking local priorities within the next two to three weeks. We will release a separate application cut-off for all those sub-accounts that didn't fall into the early obligation.

Brian Farkas – WVCA

Thanks goes out to 14 districts for hosting the listening sessions. We are finished with all of those. The next step is for the steering committee to take the information obtained during the sessions, compile it and look for themes. We will then have a meeting with stakeholders. We will then hold a large agricultural summit to develop a five-year plan for public review by the end of this year. The original idea was to have it finished to find some potential legislation, but that will not be the case for this year's session. If the districts provided refreshments for the listening sessions, you can either eat those costs or you can send them in for reimbursement.

This year for Conservation Farm of the Year, there will be finalists and a winner instead of first, second and third. That decision came from group discussions led by VanReenen. There will be a video featuring all three farms. Also, instead of receiving a plaque, the three farms will get a sign to post outside of their farms. It is very similar to the century farm signs. It allows those farmers to display the award their farm received for all those driving past. For Ag Day, the winner will hopefully come for the breakfast and then be introduced by the House and Senate on the floor before they go into session.

Due to the State Attorney General's view on operations and maintenance agreements, we need to go to all those sponsors to reaffirm their commitment to the dams and channels. Forty-four letters have been sent to sponsors. We will put together a schedule of meetings that will be sent to the thirteen districts with dams so that we may all attend these county commission meetings to talk about the importance of these dams. County specific presentations will be developed by WVCA to present. We are looking for the first meetings to take place sometime in November.

We have lost our Chesapeake Bay manager and have decided to pattern the management in conservation service after operations and maintenance, having a north manager and a south manager. They would be in charge of Ag Enhancement, 319 and Chesapeake Bay. This helps provide growth to employees.

The law states that Per Diem rates can be between \$30 and \$150. It has been increased to \$80. The Agency cannot supplement the increase. This is a district choice as to whether your budget can cover the increase. Please examine your policy to make that decision.

For those districts that deal with the CREP program, there is a dispute with FSA on interpretation of a 2002 state agreement, that has since been amended, over the number of acres that can be covered. FSA headquarters has taken the position that if your contract expired and was renewed that you are entitled to a one-time payment. We feel that language is not in any of the agreements that we have with them. If they insist on that interpretation, it places a potential \$300,000 hole in the WVCA budget. A letter was sent this summer to FSA with no response as of yet. You will not be getting approval for payment of renewal while this is in jeopardy. That is different from the Potomac and Eastern Panhandle that have specific CREP programs.

People are not seeing FEMA step up as they feel they should. Because of those issues, they are really tightening their screws, particularly involving what we do in flood recovery. We are finding a termination of \$347,000 that they say we are not entitled to reimbursement on. We are also fighting with them over a \$70,000 reimbursement that they say we should have gone to NRCS to receive. We will have to reexamine everything we do in terms of emergency watershed. I met with Aspey and others in DC last week trying to resolve an issue due to the Attorney General's opinion has stopped the small watershed program in WV. Their opinion is that we cannot take on debt without a dedicated funding source. You can't obligate future expenses in a current fiscal year without a dedicated source of funding. This initiative could have national ramifications because WV can't be the only state dealing with these same issues.

Bill Stewart - President, WVACD:

In speaking of getting people to come to the meetings, if each director would go back and bring someone to the next meeting, who would maybe be a proxy for you, and allow them to see the process, it would increase the number of people coming to this meeting and be beneficial. We must run the Association like a business. Fitzsimmons chatted with me and seems to be running his district like a business and is succeeding. You will have to make hard decisions that you, or the body, may not like.

Adjournment: Adjourned by consensus at 11:46 a.m.

Respectfully submitted,

James Foster, Secretary

Bill Stewart, President

**WVACD Fall 2018 Quarterly Meeting
Summary of Motions**

- 1. Michael moved to approve the July 11, 2018, WVACD meeting minutes. Seconded by Lafferty. Motion carried. (Page 2 of 10)**
- 2. Pitsenbarger moved to approve the 3rd quarter financial report. Lafferty seconded. Motion carried. (Page 2 of 10)**
- 3. McKeever moved to hold the Spring Quarterly Meetings April 22-23, 2019 at Pipestem State Park and the Summer Quarterly Meetings July 15-16, 2019 at the Highlands Event Center. Lafferty seconded. Motion carried. (Page 3 of 10)**

Minutes recorded by Kelley Wayne, WVACD Office Assistant

AgEP Timeline, So Far

- At this point in the timeline, the only notes needing made and submitted are those regarding a new practice being proposed. This would mean an entirely new practice being created, not just adding an existing practice to our available list. This would need to be submitted by January 31st to ensure that a practice standard and comparable cost existed for it or a similar practice.
- If you find any issues or have questions about current documents or with the ranking forms, please make note of them, for they are also to be submitted by January 31st to ensure that all proposed changes are ready to be presented and discussed at the time of the state AgEP committee meeting (there was no date set for this at the time of our conversation December 17, 2018). The meeting will be around the end of February.
- At the November board meeting, a question was brought up to Jennifer about when we can start our sign-up.
 - The sign-up cannot begin until after the State Committee meeting in April. This allows for a budget to be decided and all changes to be made for the program for the fiscal year.
 - We begin our sign-up in the week in which May 1st falls. I think that we should leave the sign-up at this time.
 - We have some overlap in our fiscal year going out and the sign-up for the new fiscal year.



Parkersburg (Wood County)
District Headquarters
Telephone: 304-422-9088
Fax: 304-422-9086
E-mail: lkcd@wvca.us

Serving the Counties of:
Calhoun
Ritchie
Roane
Wirt
Wood

Little Kanawha Conservation District

91 Boyles Lane
Parkersburg, West Virginia 26104

January 10th, 2019

Re: Agricultural Enhancement Program Practice(s)

Dear Sir or Madam,

The Little Kanawha Conservation District is contacting you as a reminder that you have a contract for a practice(s) through the Agricultural Enhancement Program. The Little Kanawha Conservation District looks forward to helping as many cooperators as possible through AgEP. If you are planning to complete your practice, the deadline for completion and verification is **June 14th, 2019**. No extensions can be granted for completion after this date. If you are unable to complete your practice for extenuating circumstances, please contact the LKCD in Parkersburg at (304) 422-9088 or the NRCS office in Spencer at (304) 927-1023 and make a notification of your change in status and so that it can be reviewed by the district board of supervisors.

Sincerely,

Little Kanawha Conservation District
Board of Supervisors.

Please note that this is a draft letter that can be prepared and mailed in the afternoon of January 10th. If there are changes you want made to this letter, please let me know

For Land's Sake

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Little Kanawha Conservation District

1/2/2019

Critical Area Planting

STATUS	FNAME	LNAME	ACRES	TOTAL COST	CS APPROVED	CS PAID	DATE PAID	CHECK #	UNFUNDED
Paid	Tina	Knopp	1	\$1,392.00	\$800.00	\$800.00	10/31/2018	2339	
Unfunded	James	Asbury	1						\$800.00
Unfunded	Craig	Marshall	1						\$800.00
			TOTALS:	\$1,392.00	\$800.00	\$800.00			\$1,600.00

Exclusion Fence

STATUS	FNAME	LNAME	TYPE	FEET	TOTAL COST	CS APPROVED	CS PAID	DATE PAID	CHECK #	UNFUNDED	NOTES
Approved	Debra	Allman	Woodland	2000		\$3,000.00					
Approved	Mark	Huffman	Woodland	2000		\$3,000.00					
Unfunded	Michael	King	Woodland	2000						\$3,000.00	75 Rank
Unfunded	Jeff	Boyles	Woodland	2000						\$3,000.00	72 Rank
Unfunded	Kevin	Townsend	Woodland	2000						\$3,000.00	77 Rank
Canceled	Kevin	Lang	Woodland	2000		\$3,000.00					10/18/18 -
			TOTALS:	\$0.00	\$0.00	\$9,000.00	\$0.00			\$9,000.00	

Heavy Use Protection Area

STATUS	FNAME	LNAME	TYPE	SQ FT	TOTAL COST	CS APPROVED	CS PAID	DATE PAID	CHECK #	UNFUNDED	NOTES
Approved	James	Delancy		2000		\$2,000.00					
Approved	Robert	Delancy		2000		\$2,000.00					
Approved	Roger	Eagle		2000		\$2,000.00					
Approved	Gary	Harold		2000		\$2,000.00					
Approved	Paul	Harold		2000		\$2,000.00					
Approved	Adam	Kinzy		750		\$750.00					
Approved	Henry	Longfellow		2000		\$2,000.00					
Approved	Nathanael	Mason		2000		\$2,000.00					
Approved	Jim	Metheney		2000		\$2,000.00					
Approved	Mitchell	Moore		2000		\$2,000.00					
Approved	Russell	Shamblin		2000		\$2,000.00					
Approved	Daniel	Sillaman		2000		\$2,000.00					
Approved	Mike	Williams		2000		\$2,000.00					
Canceled	Charles	Stump		2000		\$2,000.00					

Paid	Troxal	Metheney			\$3,849.20	\$2,000.00	\$2,000.00	12/19/2018	2342		\$2,000.00	92 Rank
Unfunded	Jeffrey	Boyles		2000							\$2,000.00	92 Rank
Unfunded	Larry	Cottrell		2000							\$2,000.00	92 Rank
Unfunded	Lee	Helmic		2000							\$2,000.00	92 Rank
Unfunded	Tony	McVey		2000							\$2,000.00	92 Rank
Unfunded	Larry	Gardner		2000							\$2,000.00	89 Rank
Unfunded	Brent	Matheny		2000							\$2,000.00	89 Rank
Unfunded	John	Eaton		2000							\$2,000.00	88 Rank
Unfunded	Dale	Cunningham		2000							\$2,000.00	87 Rank
Unfunded	David	Rupert		2000							\$2,000.00	84 Rank
Unfunded	Burl	Balderson		2000							\$2,000.00	82 Rank
Unfunded	Ryan	Dawson		2000							\$2,000.00	79 Rank
Unfunded	Mark	Jones		2000							\$2,000.00	78 Rank
Unfunded	Mary	Minney		2000							\$2,000.00	78 Rank
Unfunded	Stephen	Full		2000							\$2,000.00	77 Rank
Unfunded	David	Collins		2000							\$2,000.00	73 Rank
				TOTALS:	\$3,849.20	\$28,750.00	\$2,000.00					

Invasive Species Management

STATUS	FNAME	LNAME	TYPE	ACRES	TOTAL COST	CS APPROVED	CS PAID	DATE PAID	CHECK #	UNFUNDED	NOTES
Approved	Pamela	Exline		10		\$700.00					
Approved	Richard	Fisher		10		\$700.00					
Approved	Stephen	Johnson		10		\$700.00					
Approved	Benjamin	Lucky		10		\$700.00					
Approved	Brian	Rawson		10		\$700.00					
Approved	Mike	Williams		10		\$700.00					
Paid	Hazel	Boggs		10	\$1,603.13	\$700.00	\$700.00	10/31/2018	2338		
Paid	George	Harper		10	\$1,407.91	\$700.00	\$700.00	10/31/2018	2337		
Paid	Howard	Parsons		10	\$1,104.01	\$700.00	\$700.00	10/24/2018	2336		
Unfunded	Cathy	Bluming		10						\$700.00	95 Rank
Unfunded	Mike	King		10						\$700.00	95 Rank
Unfunded	Erin	Nichols		10						\$700.00	95 Rank
Unfunded	Paulette	Burdette		10						\$700.00	85 Rank
Unfunded	Doy	Harris		7						\$490.00	85 Rank
Unfunded	Charles	Hopkins		10						\$700.00	85 Rank

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Unfunded	Kimberly	Davis	21.66	10.83							\$346.56	55 Rank
Unfunded	Patrick	Gill	36	24							\$576.00	55 Rank
Unfunded	Vincent	Klicka	70.5	47							\$1,128.00	55 Rank
Unfunded	Russell	Shamblin	21.85	21.5							\$349.60	55 Rank
Unfunded	Gilbert	Smith	36	20							\$576.00	51 Rank
Unfunded	Phil	Sims	68.4	41.1							\$1,094.40	49 Rank
Unfunded	George	Lemon	86	43							\$1,376.00	45 Rank
Unfunded	Gary	Mossor	11.25	9							\$168.75	40 Rank
TOTALS:					\$6,460.03	\$15,676.52	\$2,837.68				\$19,281.71	

Pasture Division Fence

STATUS	FNAME	LNAME	FEET	TOTAL COST	CS APPROVED	CS PAID	DATE PAID	CHECK #	UNFUNDED	NOTES
Approved	Paulette	Burdette	2000		\$3,000.00					
Approved	Larry	Gardner	2000		\$3,000.00					
Approved	Christiana	Grow	2000		\$3,000.00					
Approved	Wayne	Longfellow	2000		\$3,000.00					
Approved	H. Robert	Miller III	2000		\$3,000.00					
Approved	Richard	Phillips	1000		\$1,500.00					
Unfunded	Matthew	Roberts	2000						\$3,000.00	134 Rank
Unfunded	James	Delancy	2000						\$3,000.00	129 Rank
Unfunded	Robert	Harris	2000						\$3,000.00	129 Rank
Unfunded	Vincent	Klicka	1200						\$1,800.00	129 Rank
Unfunded	Elza	McPherson	750						\$1,125.00	129 Rank
Unfunded	Robert	Wigal	540						\$810.00	129 Rank
Unfunded	Mark	Huffman	2000						\$3,000.00	119 Rank
Unfunded	Benton	Cochran	2000						\$3,000.00	114 Rank
Unfunded	Kevin	Lang	2000						\$3,000.00	114 Rank
Unfunded	Robert	Delancy	2000						\$3,000.00	90 Rank
TOTALS:				\$0.00	\$16,500.00	\$0.00			\$24,735.00	

Watering System

STATUS	FNAME	LNAME	COMPONENT	NUMBER	TOTAL COST	CS APPROVED	CS PAID	DATE PAID	CHECK #	UNFUNDED	NOTES
Approved	Debra	Allman				\$900.00					
Approved	Susan	Davis				\$1,800.00					
Approved	Brian	Fields				\$4,900.00					

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Approved	Harry	Fields				\$3,200.00				
Approved	Christiana	Grow				\$1,800.00				
Approved	George	Harper				\$950.00				
Approved	Johnnie	Jones				\$1,450.00				
Approved	Frank	Lane				\$900.00				
Approved	Tony	McVey				\$1,400.00				
Approved	Jim	Metheney				\$1,400.00				
Approved	Troxal	Metheney				\$600.00				
Approved	H. Robert	Miller III				\$1,000.00				
Approved	Howard	Parsons				\$1,000.00				
Canceled	Gary	Mossor				\$1,400.00				10/23/18 -
Canceled	David	Rupert				\$1,800.00				Cancelled due
Paid	Henry	Longfellow	1	\$1,127.00	\$1,552.00	\$1,600.00	10/18/2018	2335		
Unfunded	Paul	Harold							\$3,400.00	95 Rank
Unfunded	Bryan	Sims							\$2,800.00	95 Rank
Unfunded	George	Lemon							\$1,400.00	90 Rank
Unfunded	Matthew	Roberts							\$4,900.00	90 Rank
Unfunded	Phil	Sims							\$1,800.00	90 Rank
Unfunded	Gary	Hedrick							\$800.00	85 Rank
Unfunded	James	Matheny							\$1,600.00	85 Rank
Unfunded	Dana	Wheeler, Jr							\$1,400.00	85 Rank
Unfunded	Adam	Kinzy							\$3,300.00	80 Rank
Unfunded	Tina	Knopp							\$2,600.00	80 Rank
Unfunded	Nathanael	Mason							\$1,400.00	75 Rank
Unfunded	Brent	Matheny							\$1,400.00	75 Rank
			TOTALS:	\$1,127.00	\$1,552.00	\$26,100.00			\$26,800.00	

	Approved	Paid	Balance	Unfunded
Critical Area Planting	\$800.00	\$800.00	\$0.00	\$1,600.00
Exclusion Fence	\$9,000.00	\$0.00	\$9,000.00	\$9,000.00
Heavy Use Protection Area	\$28,750.00	\$2,000.00	\$26,750.00	\$30,000.00
Invasive Species Management	\$6,300.00	\$2,100.00	\$4,200.00	\$7,490.00
Lime	\$15,676.52	\$2,837.68	\$12,838.84	\$19,281.71
Pasture Division Fence	\$16,500.00	\$0.00	\$16,500.00	\$24,735.00
Watering System	\$26,100.00	\$1,552.00	\$24,548.00	\$26,800.00
Totals	\$103,126.52	\$9,289.68	(\$93,836.84)	\$118,906.71
Current AgEP Funds & Interest	\$ 81,082.73	\$9,289.68	\$ 71,793.05	
Residual Supervisors Support Funds	\$ 12,004.49	\$0.00	\$ 12,004.49	
Final Balance			(\$10,039.30)	

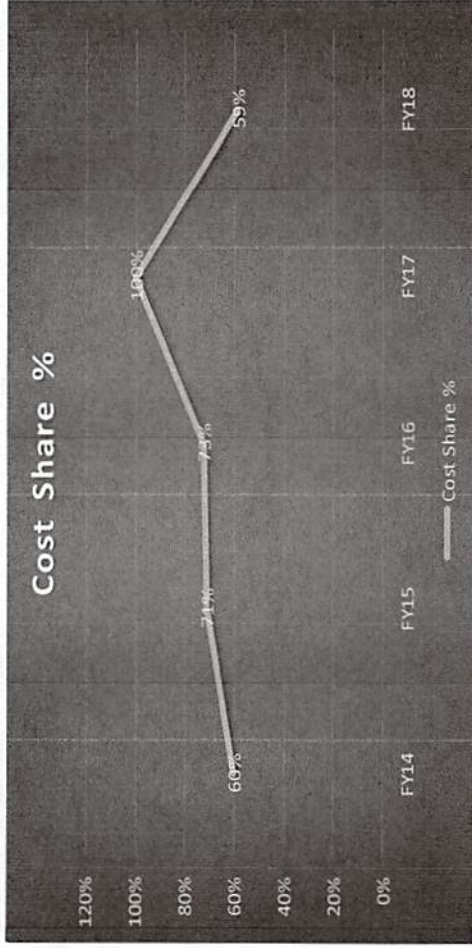
Critical Area Planting

Name	Rank	Amount	Cost	Date	Time
Tina Knopp	60	1	\$800	5/18/2018	2:30PM
J.W. Asbury	48	1	\$800	5/18/2018	4:00PM
Craig Marshall	47	1	\$800	5/16/2018	10:00AM
		Total:	\$2,400		

Pasture Division Fencing

Name	Rank	Amount	Cost	Date	Time
Rob Miller	159	2000	\$3,000	4/30/2018	4:30PM
Christiana Grow	149	2000	\$3,000	5/18/2018	4:30PM
Paulette Burdette	139	2000	\$3,000	4/30/2018	8:47AM
Larry Gardner	139	2000	\$3,000	5/1/2018	10:40AM
Richard Phillips	139	1000	\$1,500	5/3/2018	4:30PM
Wayne Longfellow	134	2000	\$3,000	5/7/2018	12:00PM
Matthew Roberts	134	2000	\$3,000	5/10/2018	8:00AM
Robert Harris	129	2000	\$3,000	4/30/2018	10:00AM
James Delancy	129	2000	\$3,000	4/30/2018	4:30PM
Vincent Klicka	129	1200	\$1,800	5/3/2018	8:30AM
Elza McPherson	129	750	\$1,125	5/7/2018	8:30AM
Robert Wigal	129	540	\$810	5/18/2018	4:00PM
Mark Huffman	119	2000	\$3,000	5/18/2018	4:30PM
Benton K. Cochran	114	2000	\$3,000	5/1/2018	9:20AM
Kevin Lang	114	2000	\$3,000	5/18/2018	1:30PM
		Total:	\$38,235		

LKCD FY18 Trend Analysis Report

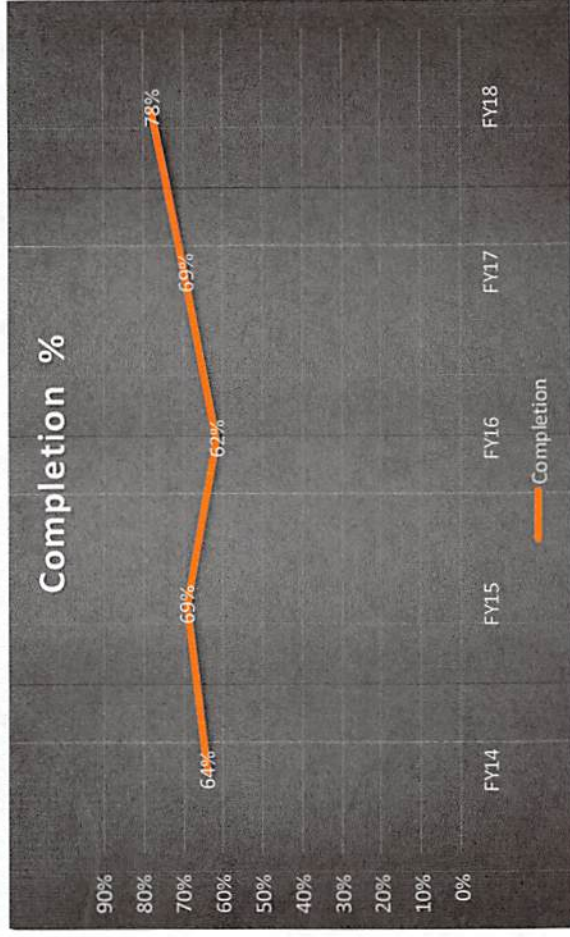


Cost Share Payment \div Total Cost = Cost Share %

Cost Share % is the portion of the practice cost that is paid by the Conservation District. Total cost is the cooperator's cost of implementing the practice. Costs associated with practice implementation are materials, labor, equipment, fuel, etc.

	TOTAL COST	PAID	COST SHARE %
FY14	\$283,414.21	\$170,787.23	60%
FY15	\$161,712.31	\$115,550.72	71%
FY16	\$146,848.13	\$106,715.89	73%
FY17	\$85,954.05	\$85,954.05	100%
FY18	\$185,281.53	\$109,162.73	59%

The average Cost Share % for all districts for FY18 was 54%, which is down from the FY17 average of 62%.



Paid Applications \div Approved Applications = Completion %

	Approved Applications	Paid Applications	Completion %
FY14	244	157	64%
FY15	177	120	69%
FY16	119	88	62%
FY17	93	72	69%
FY18	102	78	76%

The average Completion % for all districts for FY18 was 69%, which is down from the FY17 average of 72%.



January 2019 WVCA Report

Request to Conservation Districts

The WVCA is encouraging Conservation Districts to review and update your District Policy Manuals. In addition to your policy manual you are encouraged to review your CD Employee Manual (if you have one) and your CD Plan of Work. If you are already doing these reviews, please disregard this request.

The district personnel plan is due to SCC in March, so please add to your February agenda for review and approval.

WVCA Budget

Now is the time for districts to explore additional funding opportunities/partnerships to maintain local programming. It's also time to talk to their local representatives about the work of their districts, and why it's important to maintain funding.

AgEP

Annifer Skaggs will be scheduling meetings with each district to provide an overview of the AgEP program.
AgEP Timeline for 2019

January 31 - Deadline for CDs to submit program comments

Early February – Review and organize comments received, develop options based on comments, have AgEP staff meeting to review comments received

February - Comments reviewed and forms revised

Late February - Revisions sent to CDs/staff for review

Mid-March - CDs submit recommendations for upcoming FY practices

Late March - State AgEP committee meeting to finalize upcoming FY AgEP, including allocation formula

April - Presentation of upcoming FY AgEP to SCC

West Virginia Legislative Calendar

January 9, 2019 - First day of session

January 28, 2019 - Legislative Rule-Making Review bills due

February 12, 2019 - Last day to introduce bills in the House

February 18, 2019 - Last day to introduce bills in the Senate

February 24, 2019 - Bills due out of committees

February 27, 2019 - Last day to consider bill on third reading in house of origin

March 19, 2019 - Last day of session

2019 WVACD Quarterly Meeting Dates/Locations

January 22 & 23 Flatwoods

April 22 & 23 Pipestem State Park

July 15 & 16 Highlands Event Center, Triadelphia

October 21 & 22 Flatwoods

Agricultural Day at the Capitol

Agricultural Conservation Day will be January 30, 2019. Please make appointments to see your House and Senate representatives before going to Agricultural Conservation Day.

WVCA will shuttle supervisors and staff from Laidley Field beginning at 6:30 a.m. to the Gaston Caperton Training Center, Bldg. 7, which will open at 7:00 a.m.

The legislative breakfast is scheduled to begin at 7:30 a.m. Please contact your representatives to invite them to the breakfast.

O&M Sponsor letters

Brian has sent letters to all current O&M sponsors requesting a meeting to review O&M agreements. These meetings will start in mid December with Mercer county being the first. Given the number of meetings, the visits will last until March. Brian will be reviewing the AG opinion relating to the O&M agreements, have a tailored presentation for each sponsor, and review the 5-year maintenance plan.

SSRP Program

SSRP (Streambank Stabilization and Restoration Program) is on the final drafting and was scheduled to be released by mid-December. Once finalized, districts will have January and February to review and approve. Districts will need to vote to approve the SSRP program to be eligible for funding allocation for the program, so this should be an upcoming agenda item.

VCA Project Section

OM&R

- Work for this season is complete in most districts. Approximately \$525,000 has been paid to date. Final numbers will be provided to the Districts by the Watershed Managers as final invoices are approved for 2018.
- Brian Farkas will be meeting with OM&R sponsors across the state. He has already met with sponsors in Mercer and Morgan Counties. Districts will be notified as these meetings are scheduled.
- Five-year work plans including estimates are being developed for all districts.
- Annual fall inspections are complete. Reports are being prepared to submit to Sponsors and Districts.
- Supervisors are always welcome to attend inspections. Please contact the Watershed Manager in your area for an updated schedule.

Citizens Contact Reports

- Call Log Procedure – a call log procedure has been implemented to assure that calls are directed to the appropriate project section staff. Please call 304-872-4302 and your call will be directed as needed.
- Technicians are performing site visits and generating stream management plans in response to the calls that are received.

Dam Rehab

- Gannett Fleming is continuing to work on planning studies for Brush Creek 9 & 15 and New Creek 1 & 17 and perform the construction oversight for UDC1.

**NORTH FORK HUGHES RIVER FRESHWATER
MUSSEL MONITORING FOR THE CONSTRUCTION
OF THE NORTH BEND DAM AND THE BANK
STABILIZATION AND OUTLET REPAIR PROJECT IN
RITCHIE COUNTY, WEST VIRGINIA, 2016**

Prepared for:



Potesta & Associates, Inc.
7012 MacCorkle Avenue SE
Charleston, WV 25304
Phone: (304) 342-1400

Project No.: 11430
Date: 1/7/2019

Prepared by:



5070 Stow Rd.
Stow, OH 44224
800-940-4025
www.EnviroScienceInc.com

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Appendix A. Dam Construction Mussel Monitoring

Appendix B. Relocation Area Monitoring

Appendix C. Bank Stabilization / Outlet Repair Project Monitoring

Appendix D. WVDNR Scientific Collector Permit and Site-Specific Approval

ACKNOWLEDGEMENTS

Funding for the project was provided by Little Kanawha Conservation District (LKCD). Mr. Ryan Schwegman served as project manager for EnviroScience, Inc. (ES). Mr. Matthew Johnson was the field supervisor, malacologist, and report author for ES. Mr. Dan Abramczyk, Ms. Sarah Walters, and Mr. Jonathan Schwartz assisted with the fieldwork. Ms. Melissa Vaccarino and Mr. Schwegman provided QA/QC for the final report and Mrs. Rachael Goliver created GIS mapping.

1.0 INTRODUCTION & PROJECT HISTORY

The Little Kanawha Conservation District (LKCD) in Ritchie County, WV is proposing to complete a series of freshwater mussel monitoring events on the North Fork Hughes River as a result of the North Bend Dam Construction Project (Dam Construction Project) and the Bank Stabilization and Outlet Repair Project (Bank Repair Project). Potesta & Associates, Inc (Potesta) has been contracted by LKCD to complete the freshwater monitoring events. Potesta then subcontracted EnviroScience, Inc. (ES) to complete the survey and reporting for the proposed monitoring events. Copies of the necessary Scientific Collection Permit and Site Addendum are included in Appendix D.

As a condition of the 404/401 Permit granted by the U.S. Army Engineer Corps (USACE), Huntington District, the Little Kanawha Soil Conservation Service was requested to prepare and implement a plan to quantitatively assess freshwater mussels prior to construction of the proposed North Bend Dam Construction Project. In 1999, the Little Kanawha Soil Conservation Service coordinated with the USACE Waterways Experiment Station (WES) to conduct mussel surveys immediately downstream of the proposed North Bend Dam (Miller & Payne, 2000). At that time, Snuffbox (*Epioblasma triquetra*) was listed as a federal species of concern. By 2012 it was listed as endangered.

In 1999, WES conducted 6 qualitative surveys and collected 100 quantitative samples from 8 locations (although only 6 waypoints were defined). These quantitative samples consisted of haphazard collection and excavation of mussels from 0.25m² quadrats. In September of 2001, WES relocated mussels from 3 areas that were eventually impounded (Miller, 2001). Less than half of the live mussels taken in 2001 were tagged, and all were moved to two relocation areas. One relocation area was located downstream of the dam, and the other was located upstream of the area to be impounded.

As part of the 404/401 certification, additional surveys were required 30 days after construction and every other year for a period for 6 years. Dam construction began following the 1999 survey and was brought to full pool elevation in 2002. None of the required additional surveys were executed after the completion of the dam. In 2012, USFWS brought this oversight to the attention of NRCS. The proposed monitoring events outlined below are designed to fulfill those monitoring requirements at the request of the USFWS. Data collected from the proposed monitoring events will be used to determine the status of Snuffbox populations in comparison to the pre-dam condition and assess the relocation success.

The West Virginia Division of Natural Resources (WVDNR) has classified the North Fork Hughes River as a Group 2 stream, which is defined as a small to mid-sized stream where mussels are known to exist, and federal endangered species should be expected. The right descending bank downstream of the North Bend Dam on the North Fork Hughes River, Ritchie County, WV was failing. The National Resource Conservation Service (NRCS) proposed to rip-rap approximately 168m (550ft) of stream bank. Additionally, a mound of displaced rip-rap within the stilling basin had accumulated, and its removal to just above the normal water level was also proposed. Construction activities from both projects could potentially have affected mussels in several ways. Those living in the direct impact area could have been crushed, smothered, or dislodged by construction equipment, substrate removal, etc. Disturbance of the stream bed and riverbanks could alter flow patterns that result in scouring or sediment deposition, which are putative sources of unionid impairment and decline (Fuller, 1974; Aldridge, Paine, & Miller, 1987; Bogan, 1993; Williams, Warren, Cummings, Harris, & Neves, 1993).

In May of 2013, multiple freshwater mussel surveys were conducted on a 310-meter (1,017-foot) reach of the North Fork Hughes River immediately downstream of the North Bend Dam (Clayton, 2013). Three hundred and eight individuals of 16 species were observed, including one individual of the federally endangered Snuffbox. The presence of Snuffbox during Phase 1 surveys required NRCS to enter into formal consultation with USFWS. As a result of the consultation, the originally proposed project was slightly modified, and a Biological Assessment and Biological Opinion were completed. A mussel relocation effort was required as part of the Biological Opinion, which was conducted by the WVDNR, Wildlife Resources Section, from September 8 to 11, 2015 (Clayton, 2015). During the relocation effort, a total of 602 mussels of 15 species were salvaged from a total of 71 cells (1723m² or 18546ft²) from the Bank Stabilization and Outlet Repair Project Area. Additionally, two permanent cross-section transects were established across the Project Area in 2015 by NRCS.

Monitoring efforts within the footprint of Bank Repair Project, initiated in 2016 will include sampling of both mussel species recolonization as well as habitat and are designed to meet the requirements set forth by USFWS in the Biological Opinion. At the conclusion of this project, the presented data will be compared with pre-construction data and future monitoring data to document the re-colonization of freshwater mussels into the project area and identify changes to the in-stream habitat.

2.0 METHODS

2.1 DAM CONSTRUCTION MONITORING

2.1.1 Qualitative Survey Sampling Methods

EnviroScience completed 6 qualitative surveys, which as described by Miller, covered the entire designated survey location with all located mussels being removed, identified, sexed if possible, and measured. Qualitative sampling included some sweeping of substrate and turning of rocks and woody debris. In total, Miller estimated that over 15,000m² was sampled during the 2009 qualitative effort, with a total search time of 705 minutes (11.75hr). On average, Miller spent 1 minute per 21m² sampling within the qualitative sampling location. In an effort to repeat the methods completed in the Miller 2009 surveys, ES completed timed search efforts within each of the qualitative sampling locations using a rate of 1 minute per 21m². These calculated times were used as minimum effort, and after coordinating with WVDNR additional time was added to some of the sample reaches. See Figure 1 (Appendix A) for the proposed survey locations, and Table 1 below for estimated survey length (linear River meters) and survey search time for each qualitative location.

Table 1. Qualitative Sampling Location Waypoints and Estimated Survey Site Length and Search Time.

Qualitative Sites (WES waypoints)	Estimated Length of Site (m)	Estimated Search Time (min)
38 to 39	140	89
40 to 41	115	105
42 to 43	60	120
44 to 45	170	108
45 to 46	225	143
36 to 37	402	261
Total	1112	826

2.1.2 Quantitative Survey Sampling Methods

EnviroScience completed a total of 100 quadrats utilizing a random start systematic sampling methodology as described by Smith, Vilella, & Lemarié (2001). Miller's 2009 survey used a haphazard quadrat placement approach while sampling, which does not truly represent the population. Quantitative sampling was conducted in 4 areas which included the waypoints provided in the 1999 survey. Table 3 provides the estimated survey area length and number of quadrats collected within each survey location.

Table 2. Proposed Quantitative Survey Location Waypoints, Number of Quadrats to be Completed, and Estimated Length of Survey Site (m).

Quantitative Reaches (WES waypoints)	Number of Quantitative Samples	Estimated Length of Site (m)
34 to 43	40	250
33	20	100
35	20	100
31 to 30	20	150
Total	100	600

2.1.3 Mussel Relocation Site Monitoring

EnviroScience qualitatively surveyed each of the two relocation sites described by Miller in the 1999 surveys. EnviroScience completed timed search efforts within each of the qualitative sampling locations using a rate of 1 minute per 21m². The survival of the relocated animals was characterized by tag recovery. Additional qualitative searches were conducted in the 50 linear meter downstream buffer in each of the relocation areas in case individuals had been washed downstream over the past decade. See Table 2 for estimated survey area length and survey search time for each location.

Table 3. Proposed Relocation Qualitative Survey Location Waypoints, Number of Relocated Mussels and Estimated Length of Survey Site (m) and Search Time.

	Quantitative Reaches (WES waypoints)	Number of Relocated Mussels	Estimated Length of Site (m)	Estimated Search Time (min)
Relocation Area 1 DS of Lake	40 to 41 (2001)	221 (129 marked)	34 (84 including buffer)	52
Relocation Area 2 US of Lake	32 to 34 (2001)	136 (48 marked)	92 (142 including buffer)	88
Totals		357 (177 marked)	126 (226 including buffers)	140

*Estimated search times were based on an average stream width of 13m. Actual time will be based on actual m² within survey site

2.2 BANK STABILIZATION MONITORING

2.2.1 Qualitative Bank Stabilization Monitoring

EnviroScience repeated the qualitative transect survey as described by Clayton (2013). The survey consisted of bank to bank transects in each area (USB, ADI, and DSB) spaced approximately 10m (33ft) apart. A total of 32 transects were surveyed ([Appendix C, Figure 1](#)). Only three transects were placed between the dam stilling basin area and the upstream end of the project. Twenty transects were surveyed within the ADI and 9 transects were surveyed downstream of the ADI. A 1m-wide (3.3ft-wide) search area was sampled along each transect at a rate of at least 1m²/minute (11ft²/min), with data recorded at each 5m (16ft) segment. Figure 1 ([Appendix C](#)) provides a general layout of the transect survey.

Additionally, a series of qualitative 10-minute timed searches were completed between transects. Timed searches were used in the development of species richness curves in several of the most densely populated portions of the project area. Searches were completed until at least 6 samples were collected without the addition of a new species.

2.2.2 Monitoring Data Analysis

EnviroScience recorded species observed, total mussels collected, mussels collected of each species, and the lengths of all individuals observed. These data will be used to monitor changes in species presence, overall abundance, relative abundance, biodiversity and evenness, and size-class structure. Representative photographs of species observed were documented ([Appendix C](#)). Summary statistics, including overall count, length data (mean length + SE), and sex data were calculated for each observed species. Values calculated during the preparation of summary statistics were used to calculate a Shannon-Weaver Diversity Index for the site, and histograms of each species' size-class structure at the site were created. A species list will be produced for the site during each monitoring event to document changes in species present at the site over the duration of the monitoring project. At the conclusion of the monitoring project, these data will be compared among the original data and three monitoring events to assess changes in mussel assemblage structure within both the salvage area only and the survey area as whole.

2.2.3 Mussel Habitat Monitoring Methods

Two transect cross sections were completed in 2015 and was resurveyed in 2016 ([Appendix C: Figure 3](#)). Additional survey events will be completed in 2018 and 2020. The cross-section data was collected by two ES biologists using a Nikon total station unit and a survey grade GNSS receiver using the existing cross section pins. The cross-section coordinates were collected according to the NAD83 state plane West Virginia north, and elevations according to the NAVD88.

2.3 MUSSEL HANDLING

Live mussels found were kept submersed in ambient river water and were kept cool and moist during processing. All live mussels were identified to species, counted, length measured to the nearest 1.0mm, and sexed (sexually dimorphic species only) by the team malacologist. Dead shell specimens were scored as fresh dead (dead <1yr, lustrous nacre), weathered dead (dead one to many years; chalky nacre, fragmented, and worn periostracum), or subfossil (dead many years to many decades; severely worn and fragmented). Detailed digital images of the site and representative mussel species were recorded. No dead shells were kept as voucher specimens. Data was recorded to allow distinction between the ADI, upstream buffer, and downstream buffer. Mussel taxonomy has been updated to follow the nomenclature presented in Williams et al., 2017.

No live mussels were harmed or taken during this project and all specimens gathered were returned to their point of collection as put forth in the Protocol. All data required by WVDNR was recorded on WVDNR Field Survey Forms.

3.0 RESULTS

3.1 DAM CONSTRUCTION MUSSEL MONITORING SURVEY RESULTS

3.1.1 Qualitative Survey

Qualitative sampling was completed on September 26, 27, and 29, 2016. Water depths across Qualitative Sites were generally between 0.15-0.6m (6in-2ft) but Sites 38-39 and 44-45 were shallower and did not reach much beyond 0.15m deep. Substrates across most Qualitative sites were comprised of various mixtures of sand, gravel, and cobble. Sites 36-37 and 44-45 contained noticeable higher proportions of silt. West Virginia Division of Natural Resources data forms and representative photographs for each Qualitative Site are included in Appendix A.

Across all qualitative sampling locations, 208 mussels (12 species) were observed. Shell material from two additional species, *Obovaria subrotunda* and *Strophitus undulatus*, were also observed at one qualitative sampling site. No federally-protected species were encountered during qualitative sampling.

3.1.2 Quantitative Survey

Quantitative sampling was completed on September 27 and 29, 2016. Water depths across Quantitative Sites were generally between 0.15-0.23m (6in-9in) but Site 36-37 reached depths up to 0.6m (2ft). Substrates across all Quantitative sites were comprised of a mixture of gravel, sand, and silt. West Virginia Division of Natural Resources data forms and representative photographs for each Quantitative Site are included in Appendix A.

A total of 10 mussels (6 species) were observed at 3 of the 4 quantitative sampling locations. Wabash Pigtoe (*F. flava*) was the most frequently collected species (N=3). No federally-protected species were encountered during quantitative sampling. Most individuals were collected at Site 34-41 and Site 30-31, with 4 mussels at each site.

3.2 RELOCATION AREA MONITORING

Relocation area monitoring was completed on September 27 and 29, 2016. Water depths at Relocation Area 1 ranged between 0.15-0.9m (6in-3ft) and water depths at Relocation Area 2 ranged between 0.15-0.6m (6in-2ft). Substrates at Relocation Area 1 were dominated by a mixture of bedrock, cobble, and gravel and Relocation Area 2 were dominated by gravel, sand, and cobble. West Virginia Division of Natural Resources data forms and representative photographs for the Relocation Areas are included in Appendix B.

During qualitative sampling, no mussels were found at Relocation Area 1. Sampling of Relocation

Area 2 yielded 19 live mussels, representing 8 species. Pistolgrip (*Q. verrucosa*) and Threeridge (*A. plicata*) were the most abundantly collected species with 4 individuals of each. One tagged mussel, *F. flava* (Blue Tag #959) was observed during the qualitative sampling within this area.

3.2.1 Bank Stabilization / Outlet Repair Project Monitoring Results

Qualitative mussel sampling was completed on September 28-29, 2016. Water depths ranged between 0.5-1m (1.5-3ft) throughout most the project area. Depths increased to approximately 1.8 m (6ft) immediately downstream of the impoundment outfall. Substrates were dominated by a mixture of gravel, sand, and cobble throughout the center of the stream (Appendix C: Figure 2). Silt and sand were more abundant along the banks. West Virginia Division of Natural Resources data forms for the project are included in Appendix C.

During transect sampling a total of 177 mussels (13 species were observed). The most commonly observed mussels during this sampling event were Giant Floater (*Pyganodon grandis*; 50 individuals; 28.2%), Fragile Papershell (*Leptodea fragilis*, 46 individuals; 26%), and Threeridge (*Amblema plicata*; 23 individuals; 13%) (Appendix C: Table 1, Figures 1 and 4a-i). A Shannon-Weaver Index Value of 1.986 was calculated for the mussel fauna data collected using the transect sampling methods. Table 3 (Appendix C) shows the location of individual species within a given transect segment. The three most densely aggregated areas within the project area were between transects 27-28, 19-20, and 12-13. These areas were selected for additional qualitative sampling and the development of species accumulation curve.

The qualitative sampling completed between Transects 27-28 resulted in the collection of 149 mussels (12 species). Nine of the 12 species were collected within the first three search periods and it took a total of 16 search periods to reach the threshold of six searches without collecting a new species. During the tenth sampling period at this location, a single Snuffbox (*Epioblasma triquetra*, 46mm) was collected. The individual was measured, photographed, and returned from where it was originally located. A point location was recorded where this individual was collected (Appendix C: Figure 1). The qualitative sampling completed between Transects 19-20 resulted in the collection of 61 mussels (9 species). Seven of the nine species were collected within the first three search periods. The qualitative sampling completed between Transects 12-13 resulted in the collection of 50 mussels (7 species). All seven species were collected within the first three search periods.

The qualitative transect data was then added to the qualitative timed searches to develop a

species richness curve ([Appendix C; Figure 5](#)). A total of 435 live individuals were collected representing 16 species. According to the regression equation, another 553 individuals would need to be collected in order to detect another species.

Mussel habitat monitoring was completed on November 11, 2016. Figure 3 ([Appendix C](#)) includes the measured stream profile created from data collected during both the 2015 and 2016 monitoring events.

4.0 CONCLUSIONS AND DISCUSSION

Qualitative and Quantitative sampling suggests that a relatively diverse mussel assemblage of moderate abundances throughout the surveyed reach of the North Fork Hughes River downstream of North Bend Lake. Abundances appear to highest closer to the dam, although abundances appear to be too low to quantify through quadrat sampling and do not allow for a proper statistical analysis of density trends across the assessed reach.

Qualitative sampling of the two Relocation Areas suggests that Relocation Area 1 was not a suitable relocation site, as evidenced by the lack of live freshwater mussels at the site and generally poor habitat quality. Relocation Area 2 appears to have been a good relocation site as demonstrated by the presence of a diverse resident mussel fauna, and the presence of a live, tagged individual. The qualitative nature of the performed sampling and time passage of nearly 17 years is the likely reason that more live tagged mussels were not observed.

Data collected during the 2016 monitoring event suggest that an abundant and relatively diverse freshwater mussel fauna continues to inhabit the areas impacted by the stream bank stabilization project near the dam creating North Bend Lake. The size-class structure of individuals collected during this sampling event show that these individuals escaped detection or were outside the limits of the pre- construction salvage/ relocation survey and survived the in-stream construction activities. The continued presence of these individuals is beneficial to this reach of the North Fork Hughes River as they will significantly reduce the re-colonization time period required for population numbers to return to their pre-project levels.

5.0 LITERATURE CITED

- Aldridge, D. W., Payne, B. S., & Miller, A. C. (1987). The effects of intermittent exposure to suspended solids and turbulence on three species of freshwater mussels. *Environmental Pollution*, 45(1), 17-28.
- Bogan, A. E. (1993). Freshwater bivalve extinctions (Mollusca: Unionoida): a search for causes. *American Zoologist* 33:599-609.
- Clayton, J. L. (2013). North Fork Hughes River NRCS Bank Stabilization and Debris Removal Project Unionid (Mussel) Survey Results. WV Division of Natural Resources Wildlife Resources Section Wildlife Diversity Unit.
- Clayton, J. L. (2015). North Bend Dam Tailwater NRCS Bank Stabilization Mussel Salvage /Relocation Final Report. WV Division of Natural Resources Wildlife Resources Section Wildlife Diversity Unit.
- Fuller, S.L.H. (1974). Clams and mussels (Mollusca: Bivalvia). Pages 215-273 in C.W. Hart and S.L.H. Fuller, eds. *Pollution ecology of freshwater invertebrates*. Academic Press, Inc., New York.
- Miller, A. C. (2001) Draft. Mussel relocation associated with the North Fork Hughes River Project, Ritchie County, West Virginia, 2001. 19 pp.
- Miller A.C., & Payne, B.S. 2000. Potential Impacts of the North Fork Hughes River Project, Ritchie Count Wester Virginia, 1999, on Freshwater Mussels (Unionidae). Technical Report ERDC/EL TR-00-2, U.S. Army Corps of Engineers, Engineer Research and Development Center, Vicksburg, MS.
- Smith, D. R., Villella, R. F., & Lemarié, D. P. (2001). Survey protocol for assessment of endangered freshwater mussels in the Allegheny River, Pennsylvania. *Journal of the North American Benthological Society*, 20(1), 118-132.
- Williams, J. D., Warren Jr, M. L., Cummings, K. S., Harris, J. L., & Neves, R. J. (1993). Conservation status of freshwater mussels of the United States and Canada. *Fisheries*, 18(9), 6-22.

Appendix A

Dam Construction Mussel Monitoring

Mussel Survey Summary Data Sheet

4/29/2016

Section A		4/29/2016
1. Collector Name:	Matthew Johnson	2. Permit ID:
		2016.106
1b. Surveyor(s) (Last Name, First, MI)	1c. Company: EnviroScience Inc.	
Johnson, M.		
Mathias, P.		
Abramczyk, D.		

3. Stream Name:	North Fork Hughes River
4. Site Name:	36-37
5. Date: MM/DD/YYYY	9/29/2016
6. Project:	North Fork Hughes River Monitoring

Section B: Survey Method

- ! Waterscope
- ! SCUBA /SSA
- ! Snorkel
- ! Other

Section C: Survey Time

	& Area
Total Effort (min)	342
Total Area (m²)	7,200

Section D: Surveys Conducted

- ! **Transects**
- ! **Cells**
- ! **Quantitative with excavation**
- ! **Qualitative**

[illegible]

NOTES: Smaller mussels, mostly *A. plicata*, *L. fragilis*, and *P. gradis* were found along the banks in silt that had accumulated in areas of dense, submerged aquatic vegetation. Fewer mussels were found in the dense vegetation towards the thalweg of the river.

4/29/2016

Current Stream and Weather Conditions

Section A	
1. Collector Name: Matthew Johnson	
3. Stream/Site Name: North Fork Hughes River; 36-37	
4. LLID (dnr use):	
5. Date (MM/DD/YYYY): 09/29/2016	
6. Project: North Fork Hughes River Monitoring	
9. Permittee ID: 2016.106	

Section B			
Weather Conditions	Current Conditions	Past 24 Hours	Past Week
	Precipitation <input type="checkbox"/> Moderate or heavy rain shower <input type="checkbox"/> Light rain shower <input type="checkbox"/> Light rain <input type="checkbox"/> Moderate rain <input checked="" type="checkbox"/> Heavy rain <input type="checkbox"/> None Sky Conditions 0 25 50 75 100% cloud cover _____ Air temp (°C)	Precipitation <input type="checkbox"/> Moderate or heavy rain shower <input checked="" type="checkbox"/> Light rain shower <input type="checkbox"/> Light rain <input type="checkbox"/> Moderate rain <input type="checkbox"/> Heavy rain <input type="checkbox"/> None Sky Conditions 0 25 50 75 100% cloud cover _____ Air temp (°C)	Has there been a heavy rain in the last 7 days? Yes/No

Section C			
Stream Characterization	Human Influence		
	<input type="checkbox"/> Engineered Dam <input type="checkbox"/> Pipeline crossing <input type="checkbox"/> Ford <input type="checkbox"/> Pipeline (parallel to stream) In Stream Cover <input type="checkbox"/> Debris Dam <input checked="" type="checkbox"/> Woody debris	<input type="checkbox"/> Pipes(inlet/outlet) <input type="checkbox"/> Channelized <input type="checkbox"/> Bridge (pillars in stream) <input type="checkbox"/> Bridge (no pillars in stream) <input type="checkbox"/> Blow Down <input type="checkbox"/> Other	<input type="checkbox"/> Trash <input type="checkbox"/> Island _____ <input type="checkbox"/> Other _____ <input type="checkbox"/> Wall/Dike/Revetment/Riprap <input type="checkbox"/> Beaver Dam

Section D	
Aquatic Vegetation	Indicate the dominant types and record the dominant species present. <input type="checkbox"/> Rooted emergent <input type="checkbox"/> Rooted floating <input type="checkbox"/> Floating algae <input type="checkbox"/> None <input checked="" type="checkbox"/> Rooted submergent <input type="checkbox"/> Free floating <input type="checkbox"/> Attached algae <input type="checkbox"/> Moss Dominant species <u>Hydrilla</u> Percent of the reach with aquatic vegetation <u>30</u> % (in terms of area)

Section E										
Watershed Features	Human Influence/Watershed Features (within survey reach)				P=>10m from shore, C=within 10m, B=on the bank, D=dominant land use (check no more than two)					
		P	C	B	D		P	C	B	D
Wall/Rip rap						Railroad (Active)				
Railroad (rails to trails)						Railroad (Inactive)				
Buildings						Landfill/trash				
Pavement						Park/Lawn				
Road						Row Crops				
Pasture						Feed lots				
Logging operations						Mining activity				

4/29/2016

Watershed Features (Cont.)		P	C	B	D		P	C	B	D
	Forest	X		X	X	Commercial/Industrial				
	Old field		X			Hay field				
	Residential					Other				
	Local Watershed Erosion (pertains to land use, not failing stream banks) <input type="checkbox"/> None <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Heavy									

Section F	
Water Quality	Temperature (°C) <u>20</u> Conductivity uS/cm _____ Dissolved Oxygen mg/L _____ pH _____ Turbidity (mg/L) _____ Secchi depth (m.mm) _____ Meters used: _____ Hach Kit used Yes/No _____ Water Sample Collected for Lab analysis Yes/No _____ Flow at nearest USGS gauging station (cfs) _____ Gauging station: _____
	Water Odors <input checked="" type="checkbox"/> Normal/None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other _____
	Turbidity (visual) <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly turbid <input type="checkbox"/> Turbid <input type="checkbox"/> Opaque <input type="checkbox"/> Stained <input type="checkbox"/> Other _____
	Water Surface Oils <input type="checkbox"/> Slick <input type="checkbox"/> Sheen <input checked="" type="checkbox"/> None <input type="checkbox"/> Globbs <input type="checkbox"/> Flecks <input type="checkbox"/> Other _____

Section G	
Sediment/ Substrate	Odors <input type="checkbox"/> Normal <input checked="" type="checkbox"/> None <input type="checkbox"/> Sewage <input type="checkbox"/> Sludge <input type="checkbox"/> Leaf Litter <input type="checkbox"/> Sand <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Relict Shells <input type="checkbox"/> Other _____ <input type="checkbox"/> Anaerobic (methane) <input type="checkbox"/> Paper/fiber <input type="checkbox"/> Other _____ <input type="checkbox"/> Other _____
	Deposits <input type="checkbox"/> Sand <input type="checkbox"/> Silt/clay
	Substrate Type (rank top three, 1 being dominant) <u>Bedrock</u> <u>Boulder</u> <u>Cobble</u> <u>1</u> Gravel <u>2</u> Sand <u>3</u> Silt/clay

Section H	
Streambank and Riparian Zone Characterization	Canopy Cover <input checked="" type="checkbox"/> Mostly Open <input type="checkbox"/> Shaded <input type="checkbox"/> Mostly Shaded <input type="checkbox"/> None
	Stream Bank Failure Present? (within survey reach only) Right Descending Bank Yes/No <input type="checkbox"/> Left Descending Bank Yes/No <input type="checkbox"/>
	Riparian Zone (10 meters) fully intact Right Descending Bank Yes/No <input type="checkbox"/> Left Descending Bank Yes/No <input type="checkbox"/>

Notes: _____

18m wetted-width _____

1-6' banks _____

6"-2' deep _____

Appendix A
Digital Images Recorded from the Quantitative Freshwater Mussel Surveys for the Monitoring
of the North Fork Hughes River, Ritchie County, West Virginia



1. Looking northeast (downstream) at the dense patches of Hydrilla in the 36-37 Site in the North Fork Hughes River in Ritchie County, West Virginia.



2. Looking southwest (upstream) at the 36-37 Site in the North Fork Hughes River in Ritchie County, West Virginia.

Mussel Survey Summary Data Sheet

[illegible]

4/29/2016

Current Stream and Weather Conditions

Section A	
1. Collector Name: Matthew Johnson	
3. Stream/Site Name: North Fork Hughes River; 38-39	
4. LLID (dnr use):	
5. Date (MM/DD/YYYY): 09/27/2016	
6. Project: North Fork Hughes River Monitoring	
9. Permittee ID: 2016.106	

Section B			
Weather Conditions	Current Conditions	Past 24 Hours	Past Week
	Precipitation <input type="checkbox"/> Moderate or heavy rain shower <input type="checkbox"/> Light rain shower <input type="checkbox"/> Light rain <input type="checkbox"/> Moderate rain <input type="checkbox"/> Heavy rain <input checked="" type="checkbox"/> None Sky Conditions 0 25 50 75 100% cloud cover _____ Air temp (°C)	Precipitation <input type="checkbox"/> Moderate or heavy rain shower <input checked="" type="checkbox"/> Light rain shower <input type="checkbox"/> Light rain <input type="checkbox"/> Moderate rain <input type="checkbox"/> Heavy rain <input type="checkbox"/> None Sky Conditions 0 25 50 75 100% cloud cover _____ Air temp (°C)	Has there been a heavy rain in the last 7 days? Yes/No

Section C			
Stream Characterization	Human Influence		
	<input type="checkbox"/> Engineered Dam <input type="checkbox"/> Pipeline crossing <input type="checkbox"/> Ford <input type="checkbox"/> Pipeline (parallel to stream) In Stream Cover <input type="checkbox"/> Debris Dam <input type="checkbox"/> Woody debris	<input type="checkbox"/> Pipes (inlet/outlet) <input type="checkbox"/> Channelized <input type="checkbox"/> Bridge (pillars in stream) <input type="checkbox"/> Bridge (no pillars in stream) <input type="checkbox"/> Blow Down <input type="checkbox"/> Other _____	<input type="checkbox"/> Trash <input type="checkbox"/> Island _____ <input type="checkbox"/> Other _____ <input type="checkbox"/> Wall/Dike/Revetment/Riprap <input type="checkbox"/> Beaver Dam

Section D	
Aquatic Vegetation	Indicate the dominant types and record the dominant species present. <input type="checkbox"/> Rooted emergent <input type="checkbox"/> Rooted floating <input type="checkbox"/> Floating algae <input type="checkbox"/> None <input type="checkbox"/> Rooted submergent <input type="checkbox"/> Free floating <input type="checkbox"/> Attached algae <input type="checkbox"/> Moss Dominant species _____ Percent of the reach with aquatic vegetation _____ % (In terms of area)

Section E										
Watershed Features	Human Influence/Watershed Features (within survey reach)				P=>10m from shore, C=within 10m, B=on the bank, D=dominant land use (check no more than two)					
		P	C	B	D		P	C	B	D
Wall/Rip rap						Railroad (Active)				
Railroad (rails to trails)						Railroad (Inactive)				
Buildings						Landfill/trash				
Pavement						Park/Lawn				
Road						Row Crops				
Pasture						Feed lots				
Logging operations						Mining activity				

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4/29/2016

Watershed Features (Cont.)		P	C	B	D		P	C	B	D
	Forest				X	Commercial/Industrial				
	Old field					Hay field				
	Residential					Other: Gravel Path		X		
	Local Watershed Erosion (pertains to land use, not failing stream banks) <input type="checkbox"/> None <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Heavy									

Section F	
Water Quality	Temperature (°C) <u>19</u> Conductivity uS/cm _____ Dissolved Oxygen mg/L _____ pH _____ Turbidity (mg/L) _____ Secchi depth (m.mm) _____ Meters used: _____ Hach Kit used Yes/No _____ Water Sample Collected for Lab analysis Yes/No _____ Flow at nearest USGS gauging station (cfs) _____ Gauging station: _____
	Water Odors <input checked="" type="checkbox"/> Normal/None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other _____
	Turbidity (visual) <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly turbid <input type="checkbox"/> Turbid <input type="checkbox"/> Opaque <input type="checkbox"/> Stained <input type="checkbox"/> Other _____
	Water Surface Oils <input type="checkbox"/> Slick <input type="checkbox"/> Sheen <input checked="" type="checkbox"/> None <input type="checkbox"/> Globbs <input type="checkbox"/> Flecks <input type="checkbox"/> Other _____

Section G	
Sediment/ Substrate	Odors <input type="checkbox"/> Normal <input checked="" type="checkbox"/> None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Anaerobic (methane) <input type="checkbox"/> Other _____
	Deposits <input type="checkbox"/> Sludge <input type="checkbox"/> Leaf Litter <input type="checkbox"/> Sand <input type="checkbox"/> Relict Shells <input type="checkbox"/> Other _____ <input type="checkbox"/> Paper/fiber <input type="checkbox"/> Other _____
	Substrate Type (rank top three, 1 being dominant) Bedrock Boulder 2 Cobble 1 Gravel 3 Sand Silt/clay

Section H	
Streambank and Riparian Zone Characterization	Canopy Cover <input checked="" type="checkbox"/> Mostly Open <input type="checkbox"/> Shaded <input type="checkbox"/> Mostly Shaded <input type="checkbox"/> None
	Stream Bank Failure Present? (within survey reach only) Right Descending Bank Yes/No Left Descending Bank Yes/No
	Riparian Zone (10 meters) fully intact Right Descending Bank Yes/No Left Descending Bank Yes/No

Notes: _____

20m wetted-width _____

1-3 foot banks _____

6" deep _____

Appendix A
Digital Images Recorded from the Quantitative Freshwater Mussel Surveys for the Monitoring
of the North Fork Hughes River, Ritchie County, West Virginia



1. Looking west (downstream) at the 38-39 Site in the North Fork Hughes River in Ritchie County, West Virginia.



2. Looking southeast (upstream) at the 38-39 Site in the North Fork Hughes River in Ritchie County, West Virginia.

Mussel Survey Summary Data Sheet

4/29/2016

Section A

1. Collector Name: Matthew Johnson

2. Permit ID:

2016.106

1b. Surveyor(s) (Last Name, First, MI)

Tc. Company: EnviroScience Inc.

Johnson, M.

Mathias, P.

Abramczyk, D.

3. Stream Name: North Fork Hughes River

4. Site Name: 40-41

5. Date: MM/DD/YYYY 9/27/2016

6. Project: **North Fork Hughes River Monitoring**

Section B: Survey Method

! Waterscope

! SCUBA /SSA

! Snorkel

! Other

Section C: Survey Time

& Area

Total Effort (min) 125

Total Area (m²) 2,645

Section D: Surveys Conducted

! Transects

! Cells

! Quantitative with excavation

! Qualitative

[illegible]

NOTES

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4/29/2016

Current Stream and Weather Conditions

Section A	
1. Collector Name: Matthew Johnson	
3. Stream/Site Name: North Fork Hughes River; 40-41	
4. LLID (dnr use):	
5. Date (MM/DD/YYYY): 09/27/2016	
6. Project: North Fork Hughes River Monitoring	
9. Permittee ID:2016.106	

Section B			
Weather Conditions	Current Conditions	Past 24 Hours	Past Week
	Precipitation <input type="checkbox"/> Moderate or heavy rain shower <input type="checkbox"/> Light rain shower <input type="checkbox"/> Light rain <input type="checkbox"/> Moderate rain <input type="checkbox"/> Heavy rain <input checked="" type="checkbox"/> None Sky Conditions 0 25 50 75 100% cloud cover _____ Air temp (°C)	Precipitation <input type="checkbox"/> Moderate or heavy rain shower <input checked="" type="checkbox"/> Light rain shower <input type="checkbox"/> Light rain <input type="checkbox"/> Moderate rain <input type="checkbox"/> Heavy rain <input type="checkbox"/> None Sky Conditions 0 25 50 75 100% cloud cover _____ Air temp (°C)	Has there been a heavy rain in the last 7 days? Yes/No

Section C			
Stream Characterization	Human Influence		
	<input type="checkbox"/> Engineered Dam <input type="checkbox"/> Pipeline crossing <input type="checkbox"/> Ford <input type="checkbox"/> Pipeline (parallel to stream) In Stream Cover <input type="checkbox"/> Debris Dam <input checked="" type="checkbox"/> Woody debris	<input type="checkbox"/> Pipes(inlet/outlet) <input type="checkbox"/> Channelized <input type="checkbox"/> Bridge (pillars in stream) <input type="checkbox"/> Bridge (no pillars in stream) <input type="checkbox"/> Blow Down <input type="checkbox"/> Other	<input type="checkbox"/> Trash <input type="checkbox"/> Island <input type="checkbox"/> Other <input type="checkbox"/> Wall/Dike/Revetment/Riprap <input type="checkbox"/> Beaver Dam

Section D	
Aquatic Vegetation	Indicate the dominant types and record the dominant species present. <input checked="" type="checkbox"/> Rooted emergent <input type="checkbox"/> Rooted floating <input type="checkbox"/> Floating algae <input type="checkbox"/> None <input type="checkbox"/> Rooted submergent <input type="checkbox"/> Free floating <input type="checkbox"/> Attached algae <input type="checkbox"/> Moss Dominant species <u>Water willow</u> Percent of the reach with aquatic vegetation <u>5</u> % (in terms of area)

Section E										
Watershed Features	Human Influence/Watershed Features (within survey reach)					P=>10m from shore, C=within 10m, B=on the bank, D=dominant land use (check no more than two)				
		P	C	B	D		P	C	B	D
Wall/Rip rap						Railroad (Active)				
Railroad (rails to trails)						Railroad (Inactive)				
Buildings						Landfill/trash				
Pavement						Park/Lawn	L	L	L	L
Road						Row Crops				
Pasture						Feed lots				
Logging operations						Mining activity				

4/29/2016

Watershed Features (Cont.)		P	C	B	D		P	C	B	D
	Forest	R	R	R	R	Commercial/Industrial				
	Old field					Hay field				
	Residential					Othre				
	Local Watershed Erosion (pertains to land use, not failing stream banks) <input type="checkbox"/> None <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Heavy									

Section F	
Water Quality	Temperature (°C) <u>19</u> Conductivity uS/cm _____ Dissolved Oxygen mg/L _____ pH _____ Turbidity (mg/L) _____ Secchi depth (m.mm) _____ Meters used: _____ Hach Kit used Yes/No _____ Water Sample Collected for Lab analysis Yes/No _____ Flow at nearest USGS gauging station (cfs) _____ Gauging station: _____
	Water Odors <input checked="" type="checkbox"/> Normal/None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other _____
	Turbidity (visual) <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly turbid <input type="checkbox"/> Turbid <input type="checkbox"/> Opaque <input type="checkbox"/> Stained <input type="checkbox"/> Other _____
	Water Surface Oils <input type="checkbox"/> Slick <input checked="" type="checkbox"/> Sheen <input type="checkbox"/> None <input type="checkbox"/> Globbs <input type="checkbox"/> Flecks <input type="checkbox"/> Other _____

Section G	
Sediment/ Substrate	Odors <input checked="" type="checkbox"/> Normal <input type="checkbox"/> None <input type="checkbox"/> Sewage <input type="checkbox"/> Sludge <input type="checkbox"/> Leaf Litter <input type="checkbox"/> Sand <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Relict Shells <input type="checkbox"/> Other _____ <input type="checkbox"/> Anaerobic (methane) <input type="checkbox"/> Paper/fiber <input type="checkbox"/> Other _____ <input type="checkbox"/> Other _____
	Deposits <input type="checkbox"/> Sand <input type="checkbox"/> Other _____ <input type="checkbox"/> Other _____
	Substrate Type (rank top three, 1 being dominant) <u>Bedrock</u> <u>Boulder</u> <u>3 Cobble</u> <u>1 Gravel</u> <u>2 Sand</u> <u>Silt/clay</u>

Section H	
Streambank and Riparian Zone Characterization	Canopy Cover <input checked="" type="checkbox"/> Mostly Open <input type="checkbox"/> Shaded <input type="checkbox"/> Mostly Shaded <input type="checkbox"/> None
	Stream Bank Failure Present? (within survey reach only) Right Descending Bank Yes/No <input type="checkbox"/> Left Descending Bank Yes/No <input type="checkbox"/>
	Riparian Zone (10 meters) fully intact Right Descending Bank Yes/No <input type="checkbox"/> Left Descending Bank Yes/No <input type="checkbox"/>

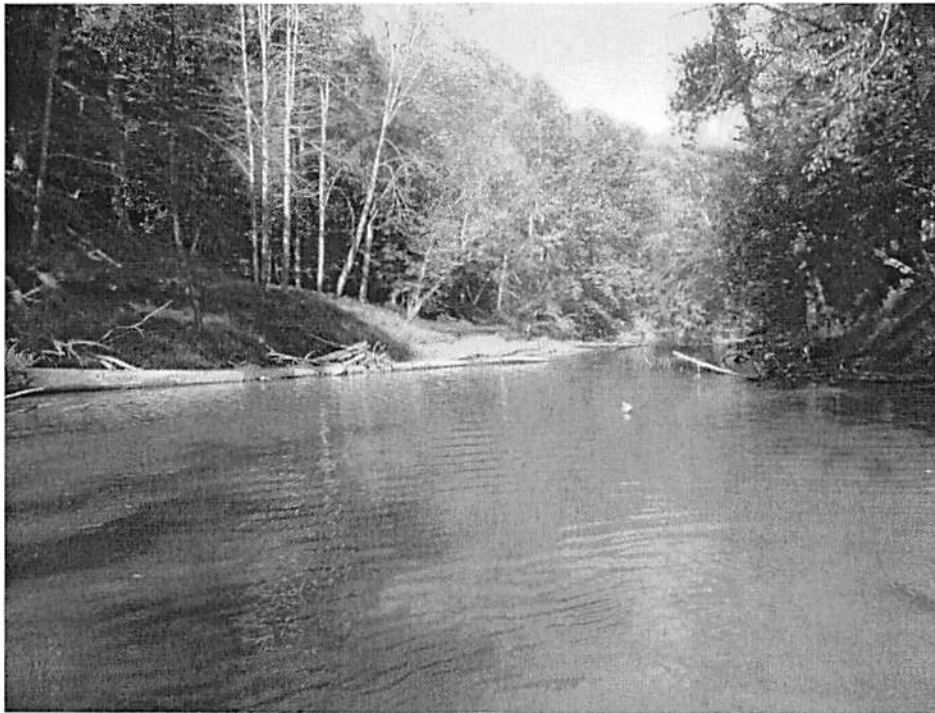
Notes: _____

23m wetted-width _____

5-15' banks _____

6" - 2' deep _____

Appendix A
Digital Images Recorded from the Quantitative Freshwater Mussel Surveys for the Monitoring
of the North Fork Hughes River, Ritchie County, West Virginia



1. Looking northwest (downstream) at the 40-41 Site in the North Fork Hughes River in Ritchie County, West Virginia.



2. Looking southeast (upstream) at the 40-41 Site in the North Fork Hughes River in Ritchie County, West Virginia.

Mussel Survey Summary Data Sheet

4/29/2016

Section A

1. Collector Name: Matthew Johnson

2. Permit ID:

2016.106

1b. Surveyor(s) (Last Name, First, MI)

Tc. Company: EnviroScience Inc.

Johnson, M.

Mathias, P.

Abramczyk, D.

3. Stream Name: North Fork Hughes River

4. Site Name: 42-43

5. Date: MM/DD/YYYY 9/26/2016

6. Project: North Fork Hughes River Monitoring

Section B: Survey Method

Waterscope

! SCUBA /SSA

! Snorkel

! Other

Section C: Survey Time

& Area

Total Effort (min) 57

Total Area (m²)	1,200
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Section D: Surveys Conducted

! Transects

! Cells

! Quantitative with excavation

! Qualitative

[illegible]

NOTES

4/29/2016

Current Stream and Weather Conditions

Section A	
1. Collector Name: Matthew Johnson	
3. Stream/Site Name: North Fork Hughes River; 42-43	
4. LLID (dnr use):	
5. Date (MM/DD/YYYY): 09/26/2016	
6. Project: North Fork Hughes River Monitoring	
9. Permittee ID:2016.106	

Section B			
Weather Conditions	Current Conditions	Past 24 Hours	Past Week
	Precipitation <input type="checkbox"/> Moderate or heavy rain shower <input type="checkbox"/> Light rain shower <input type="checkbox"/> Light rain <input type="checkbox"/> Moderate rain <input type="checkbox"/> Heavy rain <input checked="" type="checkbox"/> None Sky Conditions 0 25 50 75 100% cloud cover _____ Air temp (°C)	Precipitation <input type="checkbox"/> Moderate or heavy rain shower <input checked="" type="checkbox"/> Light rain shower <input type="checkbox"/> Light rain <input type="checkbox"/> Moderate rain <input type="checkbox"/> Heavy rain <input type="checkbox"/> None Sky Conditions 0 25 50 75 100% cloud cover _____ Air temp (°C)	Has there been a heavy rain in the last 7 days? Yes/No

Section C			
Stream Characterization	Human Influence		
	<input type="checkbox"/> Engineered Dam <input type="checkbox"/> Pipeline crossing <input type="checkbox"/> Ford <input type="checkbox"/> Pipeline (parallel to stream) In Stream Cover <input type="checkbox"/> Debris Dam <input checked="" type="checkbox"/> Woody debris	<input type="checkbox"/> Pipes(inlet/outlet) <input type="checkbox"/> Channelized <input checked="" type="checkbox"/> Bridge (pillars in stream) <input type="checkbox"/> Bridge (no pillars in stream) <input type="checkbox"/> Blow Down <input type="checkbox"/> Other	<input type="checkbox"/> Trash <input type="checkbox"/> Island <input type="checkbox"/> Other <input type="checkbox"/> Wall/Dike/Revetment/Riprap <input type="checkbox"/> Beaver Dam

Section D	
Aquatic Vegetation	Indicate the dominant types and record the dominant species present. <input type="checkbox"/> Rooted emergent <input type="checkbox"/> Rooted floating <input type="checkbox"/> Floating algae <input checked="" type="checkbox"/> None <input type="checkbox"/> Rooted submergent <input type="checkbox"/> Free floating <input type="checkbox"/> Attached algae <input type="checkbox"/> Moss Dominant species _____ Percent of the reach with aquatic vegetation _____ % (in terms of area)

Section E										
Watershed Features	Human Influence/Watershed Features (within survey reach)					P=>10m from shore, C=within 10m, B=on the bank, D=dominant land use (check no more than two)				
		P	C	B	D		P	C	B	D
Wall/Rip rap						Railroad (Active)				
Railroad (rails to trails)						Railroad (Inactive)				
Buildings						Landfill/trash				
Pavement						Park/Lawn	X	X		X
Road	X	X			X	Row Crops				
Pasture						Feed lots				
Logging operations						Mining activity				

4/29/2016

Watershed Features (Cont.)		P	C	B	D		P	C	B	D
	Forest			X		Commercial/Industrial				
	Old field					Hay field				
	Residential					Other				
	Local Watershed Erosion (pertains to land use, not failing stream banks) <input type="checkbox"/> None <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Heavy									

Section F	
Water Quality	Temperature (°C) <u>21</u> Conductivity uS/cm _____ Dissolved Oxygen mg/L _____ pH _____ Turbidity (mg/L) _____ Secchi depth (m.mm) _____ Meters used: _____ Hach Kit used Yes/No _____ Water Sample Collected for Lab analysis Yes/No _____ Flow at nearest USGS gauging station (cfs) _____ Gauging station: _____
	Water Odors <input checked="" type="checkbox"/> Normal/None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Fishy <input type="checkbox"/> Other _____
	Turbidity (visual) <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly turbid <input type="checkbox"/> Turbid <input type="checkbox"/> Opaque <input type="checkbox"/> Stained <input type="checkbox"/> Other _____
	Water Surface Oils <input type="checkbox"/> Slick <input type="checkbox"/> Sheen <input checked="" type="checkbox"/> None <input type="checkbox"/> Globbs <input type="checkbox"/> Flecks <input type="checkbox"/> Other _____

Section G	
Sediment/ Substrate	Odors <input type="checkbox"/> Normal <input checked="" type="checkbox"/> None <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum <input type="checkbox"/> Chemical <input type="checkbox"/> Anaerobic (methane) <input type="checkbox"/> Other _____
	Deposits <input type="checkbox"/> Sludge <input type="checkbox"/> Leaf Litter <input type="checkbox"/> Sand <input type="checkbox"/> Relict Shells <input type="checkbox"/> Other _____ <input type="checkbox"/> Paper/fiber <input type="checkbox"/> Other _____
	Substrate Type (rank top three, 1 being dominant) Bedrock Boulder <u>2</u> Cobble <u>1</u> Gravel <u>3</u> Sand Silt/clay

Section H	
Streambank and Riparian Zone Characterization	Canopy Cover <input type="checkbox"/> Mostly Open <input type="checkbox"/> Shaded <input checked="" type="checkbox"/> Mostly Shaded <input type="checkbox"/> None
	Stream Bank Failure Present? (within survey reach only) Right Descending Bank Yes/No Left Descending Bank Yes/No
	Riparian Zone (10 meters) fully intact
	Right Descending Bank Yes/No Left Descending Bank Yes/No

Notes: _____

20m wetted-width _____

10-15' banks _____

6"-1.5' deep _____

Appendix A
Digital Images Recorded from the Quantitative Freshwater Mussel Surveys for the Monitoring
of the North Fork Hughes River, Ritchie County, West Virginia



1. Looking southwest (downstream) at the 42-43 Site in the North Fork Hughes River in Ritchie County, West Virginia.



2. Looking at the dominant substrate types observed at the 42-43 Site in the North Fork Hughes River in Ritchie County, West Virginia.

Mussel Survey Summary Data Sheet

4/29/2016

Section A

1. Collector Name: Matthew Johnson

2. Permit ID:

2016.106

1b. Surveyor(s) (Last Name, First, MI)

Tc. Company: EnviroScience Inc.

Johnson, M.

Mathias, P.

Abramczyk, D.

3. Stream Name: North Fork Hughes River

4. Site Name: 44-45

5. Date: MM/DD/YYYY 9/27/2016

6. Project: **North Fork Hughes River Monitoring**

Section B: Survey Method

Waterscope

SCUBA/SSA

Snorkel

! Other

Section C: Survey Time

& Area

Total Effort (min) **191**

Total Area (m²)	4,025
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Section D: Surveys Conducted

! Transects

! Cells

! Quantitative with excavation

Qualitative

[illegible]

NOTES

103