



Upper & Middle James Riparian Consortium Meeting Summary

September 13, 2022

Meeting Overview

The third general meeting of the Upper & Middle James Riparian Consortium (Consortium) of 2022 was held on Tuesday, September 13, 2022 as an in-person meeting at the Catawba Sustainability Center in Catawba, Virginia. The purpose of the meeting was to discuss buffer maintenance and research, learn more about Catawba's riparian research on tree shelter and buffer methods, learn about Traditional Ecological Knowledge of stewarding riparian forest buffers, and share Bay-wide perspectives and Buffer Roundtable highlights. Participants were also given an overview of potential research themes before the meeting to discuss priority topics during the meeting.

Amber Ellis with the James River Association (JRA) gave a brief overview of the Consortium at the beginning. Adam Taylor of Virginia Tech's Catawba Sustainability Center then gave an overview of research on the property and led participants to the field research sites at the Center. Katie Trozzo and John Munsell, also of Virginia Tech, shared their research on vented versus unvented tree shelters, their approach to establishing riparian buffers on the property, and what they've been observing over time. Lucas Swampdog Tyree of the Monacan Nation and NDPonics shared traditional approaches that take an ecological approach to riparian forest buffer establishment.

The group then shifted inside, and David Wise of the Stroud Water Research Center discussed current and upcoming buffer research at Stroud. Lowrie and Rodney of Conservation Services, Inc. then shared successes and failures they've seen in buffer establishment and their recent questions around mowing regime impacts on voles and invasives, as well as bird nets on vented tubes, and oak stake alternatives. To conclude the meeting, Amber shared ideas about a symposium, a manual, and research approach and desire to incorporate research and in-field experiences to inform buffer establishment. Amber shared the top themes of information that Consortium partners have indicated interest in understanding more about in terms of buffer establishment, and that a future research graduate student could dive into greater depth.

Finally, some participants stayed for a hike around the Catawba Farm. Presentations are linked in each section of the summary below, and [meeting participants](#) with affiliations are listed at the end of this summary.

Welcome and introductions

Participants first gathered for lunch and introductions in the picnic shelter outside of the Catawba Sustainability Center. Amber shared an overview of the Consortium and gave an overview of the day. The goal of the Consortium is to “grow partnerships to create healthy streamside ecosystems for clean water in the James River today and tomorrow.” Geographically, the Consortium’s work focuses on the Middle and Upper James watershed regions, with some buffer trainings working beyond these geographic boundaries.

The Consortium’s mission states that “The Upper and Middle James Riparian Consortium is a network of private, non-profit, and public partners. We share expertise and resources to increase implementation, as well as awareness of riparian buffers and their value to landowners, with a priority focus on riparian forest buffers, across the Upper and Middle James watersheds.” The Consortium’s values that are integrated in meetings and priorities are collaboration, holistic, stewardship, and taking initiative. Amber shared that the partners involved in the Consortium include a mix of Soil and Water Conservation Districts, nonprofits, state agencies, private businesses, universities, as well as many partners who are involved in Action Teams and the Steering Committee. Action is taken through the Planning Team, Steering Committee, and Action Teams (which include the Knowledge Network Team, Implementation Team, and Targeting & Outreach Team).



Shelter + Buffer Methods Research at Catawba ([link to preliminary findings](#))

The group then made their way across the fields from the Community Center to the farm and downhill through the field to the southeast to vantage point in the field at the adjacent Catawba Sustainability Center. Adam first gave an overview of the property before they headed down to the buffer planting. Then, Katie Trozzo and John Munsell offered an overview of multi-story and species planting techniques and the preliminary findings of the tree tube trial and response trends (a link to their preliminary findings may be found above).



They tested vented and unvented tubes with primarily white oak and persimmon trees and analyzed their success. The most significant difference was that the white oaks grew substantially taller in the vented tubes. The other differences seemed to show that different tree species may react differently to vented or unvented tubes. For instance, the persimmons had slightly more diameter growth in the unvented tubes. Participants shared additional perspectives in the field.



Traditional Ecological Knowledge of Stewarding Riparian Forest Buffers ([handout here](#))

The participants then continued to a more mature riparian area where Looka Tyree of the Monacan Nation and NDPonics, shared Traditional approaches that take an ecological approach to riparian forest buffer establishment and highlighted characteristics of a mature riparian forest versus a young one in establishment. Discussion points included:

- Looka asked the group to consider how the land was managed before European colonization, and invited the group to think about how far into the future they consider land planning and if current management approaches are truly sustainable.
- Looka addressed the idea of managing land to remove barriers to access for peoples' health. Creating access to an edible forest and landscape is a good thing. This might include non-native species.
- Looka posed the idea that leaving the land alone is a better long term management strategy, so it can enter a 300-500 year cycle without disturbance.
- Current management practices require maintenance, so what happens after maintenance?
- Looka's goal is to build an endowment to support the preservation of land so he won't need to depend on grants to sustain his projects.



Bay-Wide Gleanings and Buffer Roundtable Highlights

The group then shifted inside, where David Wise of Stroud Water Research Center shared key takeaways from the July Bay-wide Buffer Roundtable, and discussed current and upcoming buffer research at Stroud. Below are key points, and the presentation can be found at this [link](#).

- The Roundtables were convenings of small groups to talk about what they're working on and struggling with from Virginia, Maryland, Pennsylvania, and New York.
- Insights from First Roundtable
 - CREP is still in use, but other options are increasing.
 - There are a lot of new staff being hired and that need training.
 - Most plant around 200-400/ac, expecting 50% alive in year 10.
 - Stroud plants 150-200 but has ~90% alive after four years.
 - All use tree shelters – mix of 4' and 5'.
 - Utility of mowing is highly site specific. Considerations: voles, invasives, natural regen, idea that not mowing may reduce deer browse.
 - Concern for availability of enough seedlings (thus seeds) is real. Multi-year contracts could help supply.
 - No one uses large container seedlings. Stroud does a bit in flood-prone areas – allows skipping shelters/stakes.
 - Stakes: many use untreated white oak, but many use pressure treated. There is some use of fiberglass: light, compact, easy to install, durable to floods, but removal over multiple years is a drawback.
- Earlier Research Findings by Stroud Center
 - Dave introduced the Center-Hole Net Method where the net added on top of the tree tube is stretched to leave an opening so the trees don't get as damaged as they grow.
 - Stroud has been doing tests of alternatives to herbicide for protecting trees from voles. They found that survival at 4 years (all sheltered), 16% survived without herbicide compared to 90% with herbicide treatments of Glyphosate 2x/year for 4 years.
 - In 2018 they began second generation trials of gravel mulch.
 - 36" herbicide spot
 - 20x2" 2A-modified gravel
 - 12x2" 2A-modified gravel
 - The 20" gravel mulch out competed the herbicide after four years.
 - They began using 15" diameter gravel circles since that is also two shovels full.
 - The gravel is much more affordable over the long term

- The downsides of gravel are that floods can remove or bury stone and access for delivery trucks can be an issue.
- Stroud has also been testing using pre-emergence herbicide INSIDE tubes to deter invasives.
 - They conducted tests of Snapshot TM INSIDE tree tubes. The intent is to prevent germination of seeds. It would be applied before seed germination, and is an easy task via custom shaker.
 - After testing, they recommend two applications per year to prevent weeds through August. It appears safe for the trees.
- Stroud tested four tree tube options with no significant differences.
- Stroud conducted trials of different mowing frequencies since mowing is a major cost, helps manage competition and voles, lacks guidance of science, and stone mulch could reduce the need to mow.
 - They found that a tapered mowing regimen of 3x a year to 1x a year was the most effective.
- David also shared some of Stroud's upcoming research based on these findings. See the presentation for additional details.
- One participant asked if replanting is an issue with stone mulch?
 - David responded that since survivability is so high, they aren't replanting.

Perspectives From the Field

Lowrie Tucker and Rodney Nice of Conservation Services, Inc. shared successes and failures they've seen in buffer establishment and their recent questions around mowing regime impact on voles and invasives, bird nets on vented tubes, and oak stake alternatives.

Rodney Nice shared some lessons he has learned in the field.

- A site in Augusta County at a landfill was straight planted with oak species in poor soil. They didn't have great success. They asked for Conservation Services to get involved. They did standard practices, and took the time to invest in maintenance which will help create success. Trying to get to canopy closure is the goal. They replanted the site with tubes, did invasives management, replanted as needed, and used herbicides. Now the site is a beautiful buffer with some mortality and some native vegetation like wingstem and tall thistle. They worked to find an herbicide to reduce the height of these competitive natives. Expertise to work problems can help a lot to create flexible solutions.
- He has seen change over the last few years with DOF standards changing to less trees per acre with more maintenance. Before, they would give the landowner the option for random planting or in rows. Now that maintenance is a bigger issue, they plant in rows.
- They've had some success in pre-seeding sites, but he hasn't seen much of it lately in Virginia.

- Not having a contractor involved in ordering the supplies and seedlings can be a mistake for coordination and results in issues. The contractor is more likely to stand behind their work.
- When he gets a species list, he gets them ordered, and there has been a shift towards primary succession species that will do better in buffers.
- They are starting to explore the limits on how specific they can make an order with nurseries. The demand is coming, and it is good to make sure production ramps up.
- Rodney noted interest in how blackberry fits in. A site that was planted, had a patch of blackberries emerge and over topped the trees. Eventually the trees popped through the blackberries and overshadowed the berries. Perhaps they created a protected environment for the trees to grow.

Lowrie Tucker then shared some more insights from his work.

- Looka and Dave mentioned the relationship between success of trees, mowing, and invasive species management. Heavy invasive management started five years ago. Some contractors put in low quality work and created problems, and now maintenance agreements are required to create accountability. They are looking into how to plant for the long term.
- Conservation Services is looking at if they need bird mesh on ventilated tubes. They've not observed much difference in the first three years for tubes, but problem plants come up in year seven. Tree shelters haven't changed much. He thinks that over another five years, things will enter the market with innovation in place of traditional tubes.
- They should leave tubes on as long as possible, but remove when needed. Tubex is a good option for that since they are made to split eventually.
- Someone needs to make a better stake! They are the weakness in the system.
- The green ash borer has largely wiped out ashes, but they don't hit the tree till it's 4 inches thick, but will start to reproduce before then – these could be used for stakes. The field could start planting ashes to preserve the species.
- Questions
 - One participant asked about their stone mulch experience.
 - Lowrie responded that determining access and maneuverability has a huge impact on project cost. Stone mulch depends on the site accessibility.
 - Another participant appreciated the interesting ideas on best practices. Where does most of the up-to-date info live?
 - Lowrie has a dream of a manual that is a living document and is regularly updated with practical wisdom and experience to aggregate and formalize their body of knowledge as a living body of knowledge, which the Consortium and Virginia Tech are working on helping to develop.

Top Research Themes for the Consortium ([Link to top Themes](#))

Amber shared how the Consortium is working to develop a manual that has been identified as a priority of the larger Consortium. The desire is to incorporate research and in-field experiences to inform buffer establishment. She shared top themes of information that Consortium partners

have indicated interest in understanding more about in terms of buffer establishment. The top research themes are (linked above with additional details):

1. Tree Shelters and Protection
2. Understory Management
3. Impact of Invasive Species
4. Species Selection

John Munsell of Virginia Tech shared the idea of a graduate student to look at a group of similar projects and address multiple issue topics. The Consortium is partnering with Virginia Tech to work with a graduate research student to further research priority topic areas to develop a manual in the future.

Christine and Amber invited participants to rank the above themes. The results for the top priority were the following:

1. **Species Selection -11 votes**
2. Understory Management - 5 votes
3. Impact of Invasive Species - 3 votes
4. Tree Shelters and Protection - 0 votes

Several participants noted that understory management and species selection seem related, as well as the impact of invasive species and tree shelters/protection. The voting was just an initial “gut check” and a survey for additional feedback will be sent out to the Consortium, as well as future discussions that help refine the focus.

Closing and Upcoming Buffer Summit

After the meeting, several participants stayed for a hike around Catawba. To stay up-to-date on events, please visit the website at www.jamesriverconsortium.org and sign up for the Consortium’s monthly newsletter there! We hope to see you at the Buffer Summit on October 20th from 9:00 am - 5:00 pm at Wildrock in Crozet, Virginia. Please share the Buffer Summit [flyer](#) widely with your networks and landowners and [RSVP at this link!](#)

Thank you to everyone for a wonderful meeting!

Meeting Participants

1. Jordan Bennett, JRA
2. Sarah Coffey, Chesapeake Bay Foundation
3. Seth Coffman, Trout Unlimited
4. Genevieve Goss, Valley Conservation Council

5. Amber Ellis, James River Association
6. Shereen Hughes, Chesapeake Bay Landscape Professionals and Wetlands Watch
7. Gabriel Irigaray, Roanoke Valley-Alleghany Regional Commission
8. Casey Johnson, James River Association
9. Martha Morris, Virginia Outdoors Foundation
10. John Munsell, Virginia Tech
11. Rodney Nice, Conservation Services
12. Isabella O'Brien, TJPDC
13. Anne Marie Roberts, James River Association
14. Bob Siegfried
15. Bill Sweeney, Virginia Department of Forestry
16. Adam Taylor, Catawba Sustainability Center
17. Katie Trozzo, Virginia Tech Center for Food Systems and Community Transformation
18. Lowrie Tucker, Conservation Services, Inc.
19. Looka Tyree, NDPonics
20. Caitlin Verdu, Virginia Department of Forestry
21. Sammy Vest, Trout Unlimited
22. David Wise, Stroud Water Research Center
23. Christine Gyovai, Dialogue + Design
24. Emily Carlson, Dialogue + Design
25. Patti Nylander, Virginia Department of Forestry