Upper & Middle James Riparian Consortium

Online Meeting Summary

Thursday, November 12th 2020

Executive Summary

The fourth meeting of the Upper and Middle James Riparian Consortium (Consortium) of 2020 was held on November 12th as a virtual meeting. The Consortium meeting primarily focused on the launch of the Riparian Buffer Training and included presentations by both Amber Ellis with the James River Association (JRA), Shereen Hughes with the Chesapeake Bay Landscape Professionals (CBLP) and David Wise with the Stroud Water Research Center on applied ecology for forested buffer restoration. This was followed by an overview by Ed Zimmer with the Virginia Department of Forestry (VDOF) around seedling supply and planning, after which meeting participants broke out into small groups to respond to key questions. This was followed by an evaluation and brief discussion of next steps for the Consortium in 2021.

The last Consortium meeting summary from September 22, 2020 can be found at this link. For more information on the Consortium, please see www.jamesriverconsortium.org. Presentation slides for this meeting can be found here. Finally, a list of attendees may be found at the end of the summary.

Welcome and Agenda Review

At the beginning of the meeting, Christine Gyovai with Dialogue + Design Associates welcomed everyone to the meeting, and encouraged participants to take a look at the Consortium's website as well as the new interactive landowner and practitioner tools. Christine then invited participants to introduce themselves by sharing their name and affiliation. This was followed by a brief agenda review, during which Christine shared that the BMP tour of Braford Farm that had originally been scheduled for later in the day had to be canceled due to flooding. This event will be rescheduled in the spring.

Overview of the Consortium

Amber Ellis shared a brief overview presentation on the Consortium. Amber encouraged meeting participants to go to www.jamesriverconsortium.org for additional background information and to watch a short introductory video there. Amber shared that the Consortium is focused on the Middle and Upper James River, basically the fresh water portions of the James River Watershed, and works on riparian buffers in particular as a practice. The Consortium received three years of funding to support the collaborative from the National Fish and Wildlife Foundation (NFWF), and funding from the

Virginia Environmental Endowment (VEE) supports the James River Buffer Program which is focused on implementation.

Amber shared that the Consortium is now in its second year, with the first year's activities focused on developing a structure and connecting partner groups working in the watershed. The second year was focused on building capacity and developing Action Teams to begin implementing targeted projects. In the year ahead, the Consortium will further refine its strategy as it continues to make progress implementing buffer projects, testing strategies, and readjusting its structure to better meet its partners' collaboration needs. Amber shared the Consortium's vision statement: "***Growing partnerships to create healthy streamside ecosystems for clean water in the James River today and tomorrow.***" In this way, the Consortium prioritizes a holistic approach to buffers and riparian health.

In between general Consortium meetings, four Action Teams focused on Outreach & Targeting, Implementation, Research and Knowledge Network meet to advance actions on a number of topics. If participants are interested in joining any of these action teams, they can reach out directly to the action team leads listed on the website.

Riparian Buffer Training Launch

Shereen Hughes with the Chesapeake Bay Landscape Professionals (CBLP) then provided an update on their new certificate program focused on riparian buffers. More information about the program and associated trainings is available here. Shereen shared that CBLP received a NFWF grant in 2014 to develop two certifications programs focused on sustainable landscaping and green infrastructure. Through this, CBLP has been able to build a network of professionals who are all consistently trained. This a Chesapeake Bay-wide certification program and was developed as a consortium, with partners including Wetlands Watch, Virginia Natural Resources, Habitat Partners, the Chesapeake Conservation Landscaping Council, and the University of Maryland Sea Grant Extension. They have now trained over 600 professionals who are now certified as level-one CBLPs. Based on this program's success, CBLP has received requests more recently for specific, targeted trainings, including requests made by both Amber on behalf of the Consortium and other partner organizations in Pennsylvania to develop a training program focused on riparian buffers.

CBLP has since developed the CBLP Buffers Certificate, which just launched and now has registration open. For more information and to register please see this link. The certificate will involve a series of trainings, including video webinars and in-person workshops, focused specifically on riparian buffers that will be delivered to partners in both Pennsylvania and Virginia. Videos are being developed by Jenny McGarvey with the Alliance for the Chesapeake Bay and Ryan Davis to support additional webinars and field site visits. The first of the series of trainings is a Buffer Basics course that provides a general overview of buffers' utility and value. This will be followed by a site visit and assessment in Amherst County, Virginia. After this, course participants will be involved in a Buffer Planning workshop and then participate in a Buffer Installation workshop. FInally, participants will participate in

maintenance training and develop a management plan. Shereen shared that with a separate grant, CBLP has also developed an urban buffer workshop. Currently, there are 20 slots for Consortium members to participate in the entire certificate program for free. However, Consortium members must complete the scholarship form before registering. Also, both the Buffer Basics webinar and the Urban Buffer webinar will be available to participants not interested in the full program. Finally, Shereen shared that CBLP is now offering its next Winter Session for Level One of the sustainable landscaping and green infrastructure program and there is a discount available for this. For additional information, please email shereen.hughes@wetlandswatch.org or katie@cblpro.org, or you can also visit their website at www.cblpro.org.

Applied Ecology for Forested Buffer Restoration Presentation

Amber Ellis introduced David Wise with the Stroud Water Research Center who spoke about applied ecology for forested buffer restoration. David's presentation slides are available at this link. David shared that Stroud is a research lab and includes a team of 4-5 individuals who work on watershed restoration. Highlights from his presentation included:

- Ecological context matters and shapes our own individual perceptions of and prescriptions for the landscape. David noted that his ecological context is small streams, pasture, and a high invasive load in southeast Pennsylvania.
- The classic model of how succession occurs is largely based on small streams with limited floodplains and buffers that occur in upland contexts.
- David asked call participants to reflect collectively on the following questions:
    - "How well is natural succession still happening in the face of herbivores without adequate predator populations, new invasives on the scenes, and diseases that are at odds with our priorities?"
    - How reliant can we be on natural regeneration?
- David posed, "Are regeneration species and numbers adequate to provide a seed source?"
    - David shared research that came out of a Master's thesis by Bradburn at Virginia Tech in 2010 that examined 60-some CREP sites across Virginia. This research indicated that on the Piedmont and Coastal Plain, there was a sufficient density of regeneration species (3,000 stems per hectare). However, in the Ridge and Valley CREP sites, Bradburn found that the top three species regenerating are invasive species and the top nine species are beset with disease and other issues. They are also present only at a density of 380 stems per hectare, indicating the species present may not be sufficient.
- In the southeast Pennsylvania context, Stroud's approach has been using sheltered seedlings as part of active afforestation. Eight years later, they do not have a forest but the trees are surviving and are not being overtaken by invasives.
- David shared some additional thoughts and points of reflection with call participants:
    - Do volunteers turn into forests?
    - Do landowners have the patience needed and tolerance for a "messy" look?

    - Does society have the time?
    - Maybe combine plantings and natural regeneration?
        - David noted that there are some contexts in which natural regeneration may be sufficient on its own, but we may not want to rely on this alone for the reasons highlighted above.
- Allelopathy is the warfare of one plant against another for advantage, with the classic example being black walnut, which does chemical warfare on other species underground.
    - Tall fescue is another lesser known species that is also allelopathic. David noted that there have been studies conducted in orchards where the peach seedlings grew best with herbicides applied up to 12 feet in diameter, indicating the degree of toxicity of the surrounding fescue.
    - There are mixed opinions on reed canary grass and the degree to which it is allelopathic. Regardless of how toxic it is, it is highly competitive and grows aggressively and will continue to have impacts as we manage restoration sites.
    - "The Green Death" acknowledges that impact of dense grasses which are highly competitive, create prime vole habitat, and can suppress natural regeneration. However, grasses can also help to suppress competing invasive species as well.
- Meadow voles are a frequent user of buffer plantings and can be an issue, as well as white-footed mice which sometimes nest inside tree tubes.
- Deer will eat more than 2,500 pounds of browse per year or two pick-up truck beds of twigs. This is an issue if those twigs are your buffer plantings.
- Shade can also be a challenge and if you are planting buffers in a shaded area you will need to be very careful with species selection.
- Soils are fundamental for so many uses, but in the buffer context soil moisture is an important driver in the success or failure of plantings. If the species used in a planting are not appropriate for soggy soils you are likely to see outright mortality as well as an increased presence of reed canary grass, voles, frost heaving of tubes and stakes, and windthrow.

David highlighted the *Chesapeake Bay Riparian Handbook: A Guide for Establishing and Maintaining Riparian Buffer Forests* as an excellent resource. This is available to download at this link and includes incredibly useful information for practitioners including soil moisture preferences for every tree species commonly found in the Chesapeake Bay Watershed. Based on this resource, David emphasized several key ingredients of a good buffer, which are inspired by mimicking healthy natural riparian ecosystems:

- Riparian pioneer species, including smooth alder, sycamore, red maple, and black willow, are fast growing species that will get the area under canopy and outcompete invasives. They will tolerate difficult microclimates, root exposure, and produce quite a bit of seed. However, they are not very tolerant to shade and so other species will have to be planted shortly after them because they will not reproduce in the shade.

- True understory species, including witch hazel, hornbeam, serviceberry, American holly, black haw viburnum, flowering dogwood, spicebush, alternate leaf dogwood, etc., are often neglected but are extremely productive for pollinators and for providing fruit for birds and wildlife. In terms of ecological function, they help to create forest conditions and support the recruitment of forest species. This includes soil formation, raindrop interception, moderation of temperature, and retention of humidity.
- Regenerators/climax/late succession species, including oaks, hickory, maple, beech, hemlock, white pine, black gum, sassafras, black/sweet birch, etc., will persist in the absence of disturbance and can follow after pioneer species that will not regenerate in the shade.
- Robust edge light soakers, including American plum, redbud, pussy willow, elderberry, chokecherry, sumacs, arrowwood, alders, gray dogwood, native crabapple, Washington hawthorne, etc., soak up the available light and compete with invasive species. Similarly to understory species, they are disproportionately valuable to birds, wildlife, and pollinators.
    - David shared that these species can be useful to "step a buffer down" if there is productive land or fields adjacent to the buffer. You do not want a sycamore, for example, casting shade on nearby crops.
- Herbaceous layer- If you are working on pasture sites, you have a de facto base layer. If you are building a buffer from scratch on farmland, you may get to select your species. Ideally, this will also include burns, etc. in the future.

For more information or to follow-up directly with David, contact him at: dwise@stroudcenter.org.

Questions and Discussion

- Amber asked via chat, "At what point do we incorporate those understory species? Is there something to come back and do in those strange teenage years of a buffer if we aren't seeing them come in naturally?"
    - David shared that in his context, where they are doing 80+ acres a year, they don't have the option of going back in to do additional TLC in later years so he doesn't have as much experience with this. Most of the understory species that he shared in the presentation do well in full sunlight. He is not sure if pawpaws would be possible.
    - David recommends talking to people who are lifelong practitioners for their lived experience.
    - Most of the understory species mentioned by David should do well in full sunlight conditions with five-foot tubes.
- Jill asked, "What about deer?"
    - This is a very real issue and a major barrier to natural regeneration. Stroud's approach in high density deer areas is five-foot shelters. They split the tubes as the trees grow but leave them on.

- Luke asked via chat, "Is there benefit to conducting a complete herbicide spray instead of a spot spray to eliminate competing grasses such as fescue, or a benefit to planting annual nurse crops or native grasses?"
    - David said that Stroud has done that very, very seldom and it depends on your local context and seed source availability. David was part of a project where they used a small seeded direct planting approach to put 100,000 to 200,000 of desired species in with no-till planters in several states. The only place they had luck was on former cropland.
- Keith asked, "What about a 1-2 year prep. Spray and kill old grass stand, then use 1-2 years of seasonal cover crops prior to tree planting?"
    - David said that this isn't a bad idea, but he has limited experience to offer on this topic not often working with previous croplands.
    - Amber shared via chat that this could be a good test plot for the Consortium!
    - Keith added, "this would give multiple herbicide applications following each seasonal cover crop."
- Bob also noted that Art Grover at Penn State has done work on pre-planting site prep. Shereen noted that he will be one of the trainers for the Buffer certification program.

Christine shared that if participants have found this information helpful, they should also check out the last Consortium meeting summary from September 22, 2020 which focused on stone mulch techniques and can be found at this link or https://jamesriverconsortium.org. All meeting participants were also invited to join the Research Action Team or any of the others to get more involved with understanding and exploring best practices and solutions to shared riparian challenges.

Seedling Supply and Planning

Ed Zimmer, with the Virginia Department of Forestry (DOF), gave an overview on DOF's existing nursery stock and seedling supply, as well as some of the obstacles that the department faces to growing more seedlings and how partners can alleviate these challenges. Key highlights from Ed's comments included:

- The DOF has been approached by a few groups with large-scale carbon sequestration projects. The requests are substantial, i.e. 9 million seedlings a year for the next 15 years.
- Currently, the Augusta nursery, where hardwood seedlings are grown, can produce 1 million seedlings per year. They are pursuing resources and equipment from the state to be able to scale production up to around 4 million seedlings per year in the next few years.
- DOF is currently trying to understand what demands exist, beyond these requests for carbon sequestration projects, such as the Chesapeake Bay WIP which outlines planting up to 40 million trees in the next few years, the Trillion Trees Initiative, etc. and is exploring partnerships with other nurseries such as the Maryland State Nursery.
- Ed noted that one of the carbon sequestration groups did a survey and estimates that in the southeast U.S. there are only around 20 million seedlings available each year from growers.

- In addition to the August nursery, DOF has a loblolly pine nursery at Garland Gray, and is considering reopening the New Kent Nursery as another hardwood nursery that could also grow key riparian species for buffers. However, this would require commitments from groups.
- Ed requested that call participants share where they source their seedlings so that DOF can explore potential partnerships and to also identify any species that are difficult to access as DOF plans which species it grows in the future.
- Ed noted that call participants that currently source their seedlings or work with DOF contractors can also help with upscaling production by sharing their species needs as early as possible.
- Species considerations are also relevant: Oak and walnut are more difficult to germinate and can only be grown at 140,000-200,000 per acre while birch and other light-seeded species can be grown at 1 million per acre. How much DOF can produce depends on the species wanted.

During Ed's presentation, the following comments and questions were shared via chat:

- Lowrie shared, "If I wanted to talk to experts about companion grass planting, ARRI would be the first people I call. They have been producing research for some time: https://arri.osmre.gov/."
- Amber shared, "Through our James River Buffer Program, JRA is estimating about 25,000 trees/year at least through 2024."

Small Group Discussions

After this framing, Christine provided an orientation to Zoom's breakout groups and shared a link to the notetaking document to capture key takeaways from the small group conversations -- the notes are shared below in Appendix A. Participants then joined small groups for 15-minutes discussions around the following questions:

- *Where are you sourcing materials from?*
- *Has seedling availability been an issue for you?*
- *What types of trees/shrubs do you want to see that aren't easily available?*

Detailed notes from each small group discussion can be found in Appendix A of this summary.

Highlights from Small Group Breakout Sessions and Large Group Discussion

As call participants rejoined the main Zoom room for a large group discussion, Christine shared a link to an evaluation of the November 12th Consortium Meeting. After this, two of the small groups reported some key highlights from its discussion. Notes shared in the large group discussion included:

- **Group 2**
    - Group participants discussed the difficulty with seedling availability particularly since spring is when most plantings are done. Since individuals cannot request seedlings from DOF nurseries until October 1, it is difficult for planning and certain species are often sold out immediately.
    - Even though the DOF nurseries are state nurseries, they receive no general fund revenues which is a challenge. The nurseries' budget completely depends on the funds they raise from the trees that they sell. This makes it difficult for the nurseries to take risks with new species or speculate around demand.
    - Call participants discussed other potential funding sources that could boost DOF nursery production.
    - Some participants suggested that the Consortium could consider supporting DOF nurseries, particularly their expansion of hardwood species production.

- **Group 5**
    - Group participants discussed developing a questionnaire that could go out to DOF employees as well as other groups asking what they need and currently do not have.
    - The questionnaire could also be sent to the Virginia Nursery and Landscape Association (VNLA) and their members who often do contract growing. They often have the space and interest in growing native plants if they know what the needs are.
    - More broadly, VNLA would be a good partner for expanding and developing relationships with professional growers.

Due to time constraints, the other groups did not report out key highlights from their discussions. Other groups' notes will be captured in the google doc and will be shared with Ed Zimmer at DOF and other Consortium members for future planning and coordination, which are included in Appendix A below. (Note that the conversation continued after the Consortium meeting ended; the summary from this discussion will be shared with the Planning Team).

Comments and questions shared via chat during the large group discussion included:

- Jenny asked, "What can we do to help increase the state nursery's capacity? Seed collection programs? Small-scale nursery efforts (e.g., Donegal Chapter of TU in PA)?"
- Amber commented, "Overall availability hasn't been an issue, but species availability has been. Landowners specifically ask about persimmon, wildlife food trees, alder, flower dogwood, pawpaws."
- Emily added, "Finding stock (esp for Flowering Dogwood and pitch Pine) is increasingly difficult. From PDC perspective: (separate ideas from questions) they would like to find ways to collaborate in urban areas and keep learning from each other."
- Amber shared, "Opportunity to incorporate growing trees on DOC properties and support workforce development."

    - Lauren added, “I had the same thought about State Farm, Amber!”
- Martha noted, “See great chart of plant/seed sources from Repp on page 14 of google doc!” [note: this is also included in this meeting summary under Appendix A.]
- Amber commented, “Suggested roundtable with public and private sector growers to brainstorm and address the issue.”
- Ed responded, “For the most part, VNLA members are not interested in growing the one-year seedlings we need for these projects. They buy these seedlings (which they call "liners") and grow them into a one-gallon or bigger plant that they can sell for a profit.”
- Amber suggested, “Encouraging local nurseries could support more local ecotype growing.”
- “Is there a role for Consortium to act as a buffer between DOF supply and local user needs?” David asked. “Bravo Ed for being self-supporting!”
- Anne Marie added, “Thank you. The seedling supply discussion was very informative and we need to keep this going so we have seedlings for our future projects!”

Next Steps and Upcoming Events

Christine encouraged new participants to look up the Consortium and explore its activities in more detail and sign up to join the email list at: www.jamesriverconsortium.org. Meeting participants were invited to stay after the formal Consortium meeting ended to continue to share ideas and discuss takeaways from the small group discussions.

Meeting Participants

- Michelle Audie, Environmental Protection Agency (EPA)- Region 3
- Kim Biasiolli, Albemarle County
- Kristen Saacke Blunk, Headwaters LLC
- Andrea Bowles, Rivanna Water and Sewer Authority
- Keith Burgess, Monacan SWCD
- Jenn Clarke, City of Richmond Stormwater Utility
- Nissa Dean, Alliance for the Chesapeake Bay
- Amber Ellis, James River Association
- Lisa Fraley-McNeal, Center for Watershed Protection
- Repp Glaettli, Albemarle County
- Genevieve Goss, Valley Conservation Council
- Serena Gruia, Albemarle County
- Briana Haymore, Conservation Services Inc.
- Laura Herrman, Chesterfield County
- Dave Hirschman, Hirschman Water & Environment
- Shereen Hughes, Chesapeake Bay Landscape Professional Program and Wetlands Watch
- Gabriel Irigaray, Roanoke Valley-Alleghany Regional Commission
- Matt Kowalski, Chesapeake Bay Foundation
- Dominique Lavorata, Thomas Jefferson PDC
- Rex Linville, Piedmont Environmental Council
- Luke Longanecker, Thomas Jefferson SWCD
- Jenny McGarvey, Alliance for the Chesapeake Bay
- Tim Miller, Mountain Castles SWCD

- Hunter Moore, Central Shenandoah Planning District Commission
- Patti Nylander, Virginia Department of Forestry (VDOF)
- Judy Okay, VDOF
- Jennifer Palmore, Department of Environmental Quality
- Taylor Parker, Virginia Department of Transportation
- Deya Ramsden, VDOF
- Anne Marie Roberts, James River Association
- Jay Ruffa, Crater Planning District Commission
- Stephen Schoenholtz, Virginia Water Resources Research Center at Virginia Tech
- Robert Schwartz, Maryland Forest Service
- Joey Shelton, James River Association
- Kelly Jones Snoddy, Peter Francisco SWCD
- Sandra Stuart, Natural Bridge SWCD
- Carl Thiel-Goin, DCR
- Lowrie Tucker, Conservation Services
- Jill Trischman-Marks, McIntire Botanical Garden
- Sammy Vest, Trout Unlimited
- Ryan Walsh, James River Association
- Josh White, Water & Land Solutions
- Laurel Williamson, Albemarle County
- David Wise, Stroud Water Research Center
- Alyssa Wittenborn, Rivanna Conservation Alliance
- Walker Wolff, VDOF
- Ed Zimmer, VDOF
- Emily Carlson, Dialogue + Design
- Christine Gyovai, Dialogue + Design

Appendix A. Notes from Small Group Discussions

Breakout Group 2

Participants: Ed Zimmer, Patti Nylander, Luke Longanecker, Sandra from Lexington SWCD

Discussion Notes:

Luke works for SWCD, 99% of materials come from Augusta Forestry Center. Spring planting is typically when the work gets done.
Cost per acre has really gone up (materials, labor, etc.)
Some different season planting due to lack of availability

Sandra - usually get trees from Augusta Forestry Center. Good educational group at Boxerwood Gardens. Students grew about 250 trees at Rockbridge County schools, trees were used for tree planting.

Patti typically sources trees from Augusta Forestry Center. Availability is an issue, sometimes trees sell out quickly, or poor germination may also lead to seedling shortages. Seedlings can't be ordered until October 1st, oftentimes site visits and planting plans have already been developed, then they need to be changed because of species being sold out or unavailable.

Heavy seeded species take a lot more work to get in the ground and grow and fewer seedlings are produced in the beds.
Light seeded species are a little easier to propagate but successful germination may vary more.

Orders can be taken in advance (need to go through a credit application and fill out some paperwork in order to do this) Typically orders can be taken starting Oct. 1st.

Nurseries receive no general fund revenues, like our State Forests, nurseries have to be self-supporting. Nurseries can't speculate what will sell well.
Are there funding sources that could help bolster nursery production? Maybe.....and VDOF is looking at some of those opportunities.
Luke and Sandra suggested the consortium consider showing support for the nursery and the expansion of their operation to grow more hardwood trees for buffer projects

Breakout Group 3

Participants: Bob Schwartz, Jenn Clarke, Judy Okay, Laurel Williamson

Discussion Notes:

Bob is in Maryland - Maryland Forest Service

- Forest Law/Tree Law (statewide law: Forest Conservation Act, counties have to figure out how to implement ordinances - replanting if above 40,000 SQ of trees removed (at a 1 to 4 ratio, usually). Can pay into fund for use in same county or same watershed.
    - Western Maryland and Eastern Shore are a little apprehensive/question it
    - Central and Fredrick County (just passed a 1:1 ordinance) are supportive
- Been around about 20 years

Sourcing materials:

- Bob in Maryland: some from state nursery (with fewer strings attached, but fewer species available) or contractor has to find the trees (and they'll draw from all over-- VA, Penn, private nurseries) where there's a larger variety of trees (as far as Michigan), drew from Musser Forsts
- Judy: DOF project but had trouble, Pinelands, Penn., State Nursery in Maryland; DOF had shortage of riparian species/seed. Lesson learned: need a broad spectrum of sources and be willing to have substitutes in your list of desired species (similar characteristics, similar in physiology). Need to have a good alternate list
    - In some other states, need to pick up (won't deliver) which drives your costs up
    - Had to go to potted stock and not bare root
    - Plan in November for next spring
    - "Everything native from the state" is a hard requirement to fulfill--a bit too strict
    - It's a lot harder than people think it is.
    - Experience matters abundantly

Why aren't there more people to source from?

- Hard work
- Needs to be a desire for native trees outside of restoration work
- Need a good market among local citizens and private homeowners
- Risky business - state nursery has flexibility; but it's weather dependent--flooding, freezes, disease; chemical applications; especially for bare root; potted stock is a little more common
- $2-$3 pitted stock - *Octoraro*?
- Bare roots and dormancy
- "Growing Native" though Potomac watershed--seeds collected by scouts; buying seeds, mast--so viable and then you have to buy seed elsewhere

Could state nurseries have locations throughout the state? Disperse risk and have seedlings in different zones.

Breakout Group 4

Participants: Nicole Shuman, David Wise, Sammy Vest, Jenny McGarvey

Discussion Notes:

Where are you sourcing materials from?

1. Department of Forestry

    a. Sometimes homeowners want species that are not widely available.
    b. Seeking trees through conservation partners (e.g., Conservation Services)
    c. PA/MD partners can seek out trees from private sector nurseries (Octoraro)
        i. Is there something like that in VA?
    d. 9 month lead time is difficult to achieve, especially when you are doing replantings versus establishment planting.
2. Pennsylvania state forestry group has a nursery, grows a riparian bundle
    a. The PA landscaping and nursery association argued not to give trees away for free, the state nursery backed off from sourcing trees for private plantings, the private sector has been more responsive and served them well.
        i. Don't find beech or hickories often in PA
        ii. Sourwood?
3. West Virginia
    a. Trees coming from the private sector primarily.
4. What can partners do to help with increasing the capacity of the state nursery?
    a. Donegal chapter of TU in PA- small scale nursery to support their buffer planting projects.
    b. Seed sourcing and collection?

Breakout Group 5

Participants: Deya Ramsden. Shereen Hughes, Laura Barry

Discussion Notes:

DOF - Augusta Nursery
Problems with timing and availability of trees, still working with landowners in spring and by the time she asks for stock, they are out of stock and need to alter choices

- Need to go back and look at notes to determine what was needed and missing.
- Suggest an internal questionnaire to look back at what was needed and missing for future stock planning.
- Most projects have focused on taller trees and fewer shrubs and understory trees, so not much trouble getting smaller trees and shrubs.

VNLA - Virginia Nursery and Landscape Association, has contract growers as members,
Mid Atlantic Growers (in Matthews, VA)
Questionnaire, once developed, could go to many growers

Breakout Group 6

Participants: Hunter Moore and Jay Ruffa. Later Briana Haymore joined (her breakout room was unable to share ideas and got moved to this group)

Discussion Notes:

- Jay recently had a project near Hopewell, used some cypress. Used big 10-15 trees. They did that thru JRA and DOF. Smaller area.
- Hunter: also with a PDC in the Upper James. Assisted two localities with tree planting project (Glasgow and Buena Vista) both funded with DOF and got stock with Waynesboro nursery. Glasgow's plans (she has them if want to share).
- How can the Consortium help PDCs? (shifted conversation to something more relevant for PDCs)
    - Hunter is in western VA so different. Jay is in the unique situation where most of PDC area isn't in the Bay. BMPs Buffer and BMP work is good for everyone, but the part of his PDC that is not Bay area is resistant. Jay is a member of Coastal zone team with DEQ (8 PDCs) and works on WIP reporting and coastal zone management.
    - Buffer work for them doesn't happen much. They are looking at developed areas and structures: rain gardens, living shorelines, etc.
    - Jay is In the Middle James. They are working to get community-level management processes. Trying to get rules in place BEFORE development goes in.
    - Hunter: her first meeting:) PDC in the Upper James.. Hard to keep stakeholders engaged. Wants Consortium to keep an eye out for collaboration whether marketing with stakeholder or outreach. Not working on many buffer projects. Working with Dave Hirchman on retention pond sites and implementation money.
    - Jay wants to figure out ways for more work more in urban areas.
- Briana Haymore (Conservation Services)
    - They plant trees and do material sales. Each year having harder and harder time finding seedlings, esp flowering dogwood and pitch pine. Each season gets harder to source specific species.
- Question: Is carbon sequestration work staying in Virginia and is stock going to the southeast. They are planting (Brianna) up and down the east coast, and usually get stock from within state.

Breakout Group 7

Participants: Amber Ellis, Anne Marie Roberts, Dave Hirschman, Matt Kowalski

Discussion Notes:

- *Where are you sourcing materials from?*
    - DOF
    - Trees and tubes from Conservation Services (who knows where they source from)
    - Mellow Marsh Farms
    - Slyva Nursery
    - Hummingbird Hill Native Plant Nursery

    - Hill House
    - Mid Atlantic Natives
    - The Natural Gardener in Cville - may grow for a contract.
    - CBLP has list - get with Shereen
    - Reedy Creek Environmental
    - For container stock - TreeLab in Richmond, Colesville Nursery

- *Has seedling availability been an issue for you?*
    - Not yet in terms of quantity, but issues with species availability
    - Sometimes species that landowner is interested in that aren't available, but overall have been able to get some type of tree
    - Meeting landowner objectives

- *What types of trees do you want to see that aren't easily available?*
    - Persimmon
    - Wildlife food trees
    - Paw paws
    - Hazel alder - good for stabilization
    - Flowering dogwood

Would be good to query nurseries to see how far in advance nurseries need to know. We need at least 2 years of growth before planting.

Carbon sequestration could overwhelm requests for buffers if what he is saying is correct.

Private sector - encouraging local nurseries that would encourage and grow from local genetics

Using places like State Farm or other DOC properties to grow and incorporate into workforce training

Could have roundtable with nurseries

Breakout Group 8

Participants: Gabriel Irigaray, Joey Shelton, Keith Burgess

Discussion Notes:

Joey Shelton -

Question 1: Sourcing Materials: Conservation services (private company), source some from DOF

Question 2: Seedling availability - sometimes an issue, especially w warm water, both with getting species order/wanted species, have to "scrape bottom of the barrel"

Question 3: Depends on landowner, some people want ornamental, not specifically

JRA uses contractors for projects, easier to have one source for all materials
Seedlings between 4-8 inches tall

Breakout Group 9

Participants: Repp Glaettli and Martha Morris

Discussion Notes:

Sourcing - live stakes from North Carolina, seedlings - Department of Forestry, seeds - Ernst, see below for comprehensive source list from Repp

Availability - DOF can sell out of some species

Types that aren't easily available - caterpillar friendly species like oaks, black cherry, birches
Important for availability of seedlings to work with the sequence of planting, be able to plant whips in appropriate season (often fall)

We also discussed alternative growing methods for some seedlings, e.g. many oaks are taprooted and hard to transplant, so could methods like air-pruning beds be used/scaled up sufficiently?

Seed Venders		City	State	Phone	Website
Ernst Conservation Seeds	Wholesale and Retail	Meadville	PA	(800) 873-3321	www.ernstseed.com
Green Resource	Custom Ripa	Colfax	NC	(800) 225-8061	www.green-resource.com
Landscape Supply	Wholesale and Retail	Charlottesvill e	VA	(434) 979-8873	https://www.landscapesupplyva.com/
Mellow Marsh Farm	MMF Riparia	Siler City	NC	(919) 742-1200	www.mellowmarshfarm.com
Prairie Moon Nursery		Winona	MN	(866) 417-8156	https://www.prairiemoon.com
Prairie Nursery	Wholesale and Retail	Westfield	WI	1-800-476-9453	www.prairienursery.com
Spence Restoration Nursery	Wholesale and Retail	Muncie	IN	(765) 286-7154	www.spencenursery.com
Wild Seed Project Shop	Retail		ME		https://shop.wildseedproject.net

Container and Plugs- Grass and Wildflower Venders		City	State	Phone	Website
Amanda's Garden	Wholesale	Dansville	NY	(585) 750-6288	http://www.amandasnativeplants.com/ourplants
American Native Plants	Wholesale	Perry Hall	MD	(410) 529-0552	www.americannativeplants.net
ArcheWild Native Nurseries	Wholesale	Quakertown	PA	(855) 752-6862	http://archewild.com/native-species-availability
Earth Sangha	Retail	Fairfax	VA		www.earthsangha.org
Edge of the Woods	Wholesale	Orefield	PA		www.edgeofthewoodsnursery.com
Enchanter's Garden	Wholesale	Hinton	WV		www.enchantersgarden.com
Heartwood Nursery	Wholesale	Stewartstow n	PA		www.heartwoodnurseryinc.com
Hill House Nursery	Retail	Castleton	VA	(540) 937-1798	hillhousenativeplants.com
Hoffman Nursery (grass)	Wholesale	Rougemont	NC	(800) 203-8590	http://hoffmannursery.com
Hummingbird Hill Native Plant Nursery	Retail	Crozet	VA	434-964-1034	http://www.hummingbirdhillnatives.com/
Mellow Marsh Farm	Wholesale	Siler City	NC	(919) 742-1200	www.mellowmarshfarm.com
Mid Atlantic Natives	Wholesale	New Freedom	PA	717-227-0924	http://shop.midatlanticnatives.com
Morningside Farm and Nursery	Retail	Boston	VA		www.morningsidefarmandnursery.com
Natural Garden	Retail	Harrisonburg	VA	(540) 432-5522	www.thenaturalgarden.net
New Moon Nursery	Wholesale				
Niche Gardens,	Wholesale	Chapel Hill	NC	(919) 967-0078	www.nichegardens.com
North Creek Nurseries	Wholesale	Oxford	PA	(610) 255-0100	www.northcreeknurseries.com
Octoraro Native Plant Nursery	Wholesale	Kirkwood	PA		www.octoraro.com
Overhill Gardens	Wholesale	Vonore	TN		www.overhillgardens.com
Pinelands Nursery & Supply	Wholesale	Columbus	NJ		www.pinelandsnursery.com
Redbud Native Plant Nursery	Wholesale	Glen Mills	PA		www.redbudnativeplantnursery.com
Sandy's Plants Inc	Both	Mechanicsvill e	VA	(804) 746-7092	www.sandysplants.com
Scott Bros. Nursery Co	Wholesale	McMinnville	TN		www.scottbrothersnursery.com
Sunlight Gardens	Wholesale	Andersonvill e	TN		www.sunlightgardens.com
Sunshine Farm & Gardens	Wholesale	Renick	WV		www.sunfarm.com
Sylva Native Nursery and Seed Compar	Wholesale	Glen Rock	PA		www.sylvanative.com
Toadshade Wildflower Farm	Wholesale	Frenchtown	NJ		www.toadshade.com
Wetland Plants Inc.	Wholesale	Edenton	NC	786-655-8381	www.wetlandplantsinc.com
Windbeam Way Nursery	Wholesale	Heaters	WV		aplectrumwv@yahoo.com
Yellow Springs Farm	Wholesale	Chester Springs	PA		www.yellowspringsfarm.com

Livestakes Venders (in NC)					
Carolina Wetland Services, Inc.		Charlotte	NC	(704) 527-1177	www.cws-inc.net
Coastal Plain Conservation Nursery		Edenton	NC	(252) 482-5707	www.coastalplainnursery.com
Deerwood Nursery		Zirconia	NC	(828) 606-3625	www.deerwoodnursery.com
Foggy Mountain Nursery		Creston	NC	(336) 384-LEAF	www.foggymtn.com
Lumber River Native Plants		Gibson	NC	(336) 601-8787	www.ncnativeplants.com
Mellow Marsh Farm		Siler City	NC	(919) 742-1200	www.mellowmarshfarm.com
Native Roots Nursery		Clinton	NC	(910) 385-8385	www.nativerootsnursery.com

Tree and Shrub Venders		City	State	Phone	Website
American Native Plants	Wholesale	Perry Hall	MD	(410) 529-0552	www.americannativeplants.com/availability/
Bremo Trees		Bremo Bluff	VA	(434) 842-8733	http://bremotrees.com/availability-of-plants/
Coldwater Pond Nursery	Wholesale	Phelps	NY	(315) 331-8068	www.coldwaterpond.com/
Edible Landscaping	Retail	Afton	VA	(434) 361-9134	ediblelandscaping.com
Farfields Farm		Afton	VA	(434) 326-2157	nursery@farfieldsfarm.com http://www.farfields
Hill House Nursery	Retail	Castleton	VA	(540) 937-1798	hillhousenativeplants.com
Hummingbird Hill Native Plant Nursery	Retail	Crozet	VA	(434) 964-1034	http://www.hummingbirdhillnatives.com/
Ivy Nursery	Retail	Ivy	VA	(434) 295-1183	www.ivynursery.com
Piedmont Nursery	Retail	Markum	VA	(540) 364-0398	www.piedmontnursery.com
Saunders Brothers	Wholesale	Piney River	VA	(434) 277-5455	www.saundersbrothers.com
Snow Mountain Nursery	Retail	Stanardsville	VA	(434) 985-6789	www.facebook.com/pages/Snow-Mountain-Nursery
Snows Garden Center	Retail	Charlottesvill e / Albemarle	VA	(434) 295-2159	www.snowknows.com
Southern States	Retail	Charlottesvill e / Hollymead	VA	(434) 296-6191	www.southernstates.com/storelocations/11685
Stadler Nurseries	Retail	Bristow	VA	(703) 257-2800	https://www.stadlergardencenters.com/gardening_and_plants/native_plants/
The Natural Gardener	Retail	Harrisonburg	VA	(540) 432-5522	https://www.thenaturalgarden.net/
The Wintergreen Nature Foundation - Trillium House	Both	Nellysford	VA	(434) 325-7451	http://www.twnf.org/trilliumhouse
Thomas Jefferson Center for Historic Plants - Monticello Gift Shop	Retail	Monticello / Albemarle	VA	(434) 984-9819	www.monticello.org/site/house-and-gardens/thomas-jefferson-center-historic-plants
Virginia Department of Forestry	Retail	Crimora	VA	(434) 977-6555	www.dof.virginia.gov/nursery
Watermark Woods	Retail	Hamilton	VA	(540) 441-7443	www.watermarkwoods.com
Waynesboro Nurseries	Retail	Waynesboro	VA	(540) 946-3800	waynesboronurseries.com
Waynesboro landscape and garden center	Retail	Waynesboro	VA		
White House Natives, LLC	Retail	Luray	VA	(703) 327-5161 Ext 30	whitehousenatives.com

Other Ideas after breakout groups

Is there a way that we could encourage the General Assembly to provide support for DOF to expand their nursery operations to meet riparian buffer demand?

Need to understand DOF's limiting factors to expansion. If land is issue, could we look at interested landowners leasing their land for growing trees?

Great opportunity to engage groups like Virginia Master Naturalists, Master Gardeners, and others to collect acorns, seeds, etc. Other groups like JRA, CBF, ACB and other local watershed groups could encourage and promote the program to their volunteers as well. It just needs to be organized (what types do they need to collect, where can they collect from, where to drop off) and include some training to ensure it's done correctly.

Private nurseries are also key. They just need to know what we want them to grow. How can we as a Consortium support private and DOF nurseries better? Is there a way we can at least collect expected need and desired species from Consortium members at certain times of the year that we send out to nurseries as a heads up?