

**Horsepen Creek, Little Roanoke Creek, and unnamed tributary to Spencer Creek TMDL
First Public Meeting Summary
Charlotte County Administrative Office, Board Room 250 LeGrande Ave., Suite A
Charlotte Court House, VA 23923
1:00 PM on 15 January 2025**

Aerin Doughty kicked off the initial public meeting for the Horsepen Creek, Little Roanoke Creek and unnamed tributary to Spencer Creek TMDL Study at 1:04 PM. She introduced herself as the TMDL Coordinator for the Blue Ridge Region of Virginia's Department of Environmental Quality. Additionally, Aerin noted that she is under the process of changing her last name which may change throughout the course of this TMDL Study. Aerin made physical copies of the slideshow presentation, maps, and other supporting documents available for those in attendance. All attendees signed the attendance sheet at the door. This sheet outlined the attendees' names, affiliation or if they are a land owner, and email addresses. In total there were 9 stakeholders present for this meeting.

Following the introduction, Aerin laid out the meeting objectives and introduced the TMDL study. She outlined all three of the watersheds with benthic impairments. This means that macroinvertebrates and the aquatic life are not doing as well as we would like to see which indicates the water quality is not where we want it to be. The purpose of this TMDL is to look at why it is the way it is, how we can make it better, and what the community can do to help. Aerin also mentioned that the agenda for the meeting had been posted in town hall.

Aerin outlined Virginia's Water Quality Process and how it can address the pollutants of concern within the community. In continuation of providing background information, Aerin tied in the Clean Water Act and the Virginia Water Quality Standards to explain the standards used when evaluating impaired stream segments. DEQ implements monitoring at different stages to look at the data and evaluate the water quality. To understand the process better, Aerin explained why Benthic Macroinvertebrates were used as an indicator for water quality. They are helpful due to being visible and quantifiable.

The Virginia Stream Condition Index (VSCI) was discussed to explain the set standards to which the scores collected during the monitoring process are compared to. This aquatic life score is what determines benthic impairments. In a displayed map, Aerin showed the impaired stream segments and provided context for the markings on the maps which displayed monitoring stations for where the data was collected. Aerin mentioned that there is some contention on the name for Little Roanoke Creek and that this may change throughout the TMDL Study to just Roanoke Creek.

Attendee: On many deeds, it's [the unnamed tributary in this study] called Hatchet's Branch.

Aerin thanks the attendee and addresses that she will look into that more. She then moves on to bar graphs outlining the biomonitoring data for Horsepen Creek, Little Roanoke Creek and unnamed tributary to Spencer Creek. For Horsepen Creek, Aerin pointed out that it seemed to improve from 2009 to 2021 but then data reflected a sharp decline in water quality. She made note of the emails mentioning Hurricane Michael that had passed through the area and explained the impacts of it in relation to the data collected.

Attendee 1: There were two hurricanes. Michael in October and Lawrence in September.

Attendee 2: The hurricanes resulted in two fatalities.

Aerin: There is a data gap in that Horsepen Creek and Little Roanoke Creek were not sampled that fall likely due to the Hurricanes, but looking at the data following the hurricanes, there was not a really big impact on the aquatic life.

Aerin moved on to the bar graph displaying data for Little Roanoke Creek and mentioned it ranged from 2012 through 2023.

Attendee: There was major disturbance on the dam so a lot of sediment was caught in the lake and there was an ASA complaint on it. Not in the past two years, but it could have been another one that we are not aware of. There has been a lot of land clearing.

Aerin: There are a few different stations all within a mile of each other but spread out in the stream to help evaluate the data.

Aerin then discussed the data for the unnamed tributary to Spencer Creek and points out that it never received a passing score.

Aerin defined the acronym TMDL and explained how it outlined a plan on how to move forward. A model is created to see how much will be needed to reduce the pollutants to meet the standards and meet aquatic life. Aerin made a comparison to a "Pollution Diet." Within the "Pollution Diet" there are two source types that are taken into account- Point Sources and Non-point Sources. Aerin explained these two sources and how each are managed.

All of the data has been pulled together into a 100 page draft document which evaluates the data and evidence. Aerin reminded everyone that this is up on the DEQ website and is open to public comment for the next 30 days.

Aerin then moved on to explain the Benthic Stressor Analysis (BSA) where she outlined the goals and the process used to create it. She outlined the CADDIS approach and how it is a formal process created by EPA. Aerin discussed potential causes and available data. The available data includes 54 benthic samples, 95 water quality samples and datasets ranging from 2007-2002. To evaluate the data, four different stressor categories were analyzed: Physical, Water Chemistry, Nutrient, and Dissolved Metals. Aerin explained the eight lines of evidence evaluated to determine likelihood of the potential cause of impairment for this specific study.

The most probable stressor for Horsepen Creek was phosphorus with the possible stressors being sediment, dissolved oxygen and physical habitat. The most probable stressors for Little Roanoke Creek were sediment and dissolved oxygen with the possible stressor being phosphorus. The most probable stressor for the unnamed tributary to Spencer Creek was sediment with the possible stressors being physical habitat and phosphorus. Overall, Aerin indicated that Little Roanoke had excellent habitat scores but there is a lot of sediment moving through despite being the best of all three impaired streams.

To provide more context to the likely stressors and probable stressors, Aerin walked through the supporting lines of evidence for phosphorus, sediment, dissolved oxygen and physical habitat. For Phosphorus, Aerin pointed out that a lot of data will be biased, reflected very few rain events because monitoring is less likely to be occurring during heavy rain events for safety reasons. All supporting lines of evidence were compared to Reedy Creek. Reedy Creek was the reference stream chosen due to proximity, a similar layer of geology, and similar land uses in the watershed.

After concluding the explanation of the Benthic Analysis TMDL Study, Aerin informed the public of the 30-day public comment period which kicked off with the public meeting for comments on the coming TMDL study. This led to the clarification of the TMDL meeting process. Aerin discussed the next steps and the option of a Community Engagement Meetings or the formation of a TMDL Advisory Group (TAG). Aerin then went through the models and reductions that will be discussed in the next meetings which will provide a better understanding of the TMDL equation of the pollution load. Aerin provided more information on where to find meeting materials and how to reach out for public comments. The 30-day public comment period ends February 14, 2025. Aerin then opened the floor to any questions.

Attendee: Thank you Aerin for all the work put into this. I have a question for Attendee 2. This has been done for a number of streams. Do you do the work for this?

Attendee 2: We were able to get Cub Creek delisted. For those seeing the process, this is mostly done through DEQ.

Attendee: For educational purposes we can see the process on DEQ.

*Attendee: To share some information, 20 years ago X asked to help identify potential stops for wildlife trail and told me to go after Roanoke Creek. *Explains information and how remarkably intact it is.* Theres nothing like it. He had known about it because he had been at the fish hatchery and hunted with people. *Stated interest to start talking to land owners about land conservation easement.* X told me it was a threat if you don't protect it, it can get away from you. Because of him, he helped get conservation easements starting in 2003.*

I called ducks unlimited. The moment I talked to him he knew drakes branch because of it's named homage to waterfowl and it's great habitat resources. This helped me realize the general significance. We identified the one on double bridges road and mossing fort road and Staunton River Battlefield State Park. X suggested to hold a meeting to bring in ducks unlimited and conservations partners helping landowners. We had a two-day meeting presented and out of those meetings got interest in a number of conservation easements in Charlotte County. Two families have put 1500 acres under conservation easements above them and on the Little Roanoke there is a property of 600 acres under easement. Both properties owned by descendants of families that have been there since Virginia was a colony.

Another property approximately 380 acres that has a long boundary on spencer creek, wanted her easement to address biodiversity [this property was] protected under easement prohibiting commercial timber harvesting. Her easement also details to not subdivide and to imposed a 300 ft riparian buffer on the unnamed tributary to Spencer Creek. To her surprise [this property] was put under conservation easement.

I also had a visit from the mid-Atlantic director. The conservation fund would like to continue efforts so they drove around to target properties the director thinks would be good candidates. If they called ducks unlimited they could help manage land to provide max crop yield. X is starting to work with the Soil and Water Conservation District.

I also wanted to share that we have also done a lot of visuals and had interesting things come up between described and forest, a solar project developing. When they got approval to go forward the SCC issued final order stating that Dominion had to comply with uncontested recommendations in DWR and DEQ report. The report included recommendations from

department of wildlife resources which were not contested by Dominion for 300 ft buffers on Roanoke Creek, 200 ft buffers for perennial streams, and 100 ft buffers for intermittent streams.

Final plans from solar project are not consistent with ruling and has been brought to the attention of DEQ and SCC. The fact that DEQ has made recommendations attest to how important it is for wildlife. Will share what has happened and will continue to talk to X for guidance. I want to get landowners from Hatchets Branch and get a group going.

Thank you Aerin, thanks again.

Aerin: Thank you. I know there are solar projects that we will take into consideration during our planning. Its good knowing upfront that it is something that could change the landscape over time.

Attendee: What about friends in forestry? This unnamed stream was very clean based on experience before. In the headwaters, we're totally forested. Recently both sides have been clear cut on land owned for 130 years and co-owned by maybe 50 people? Past two years it has been clear cut. The other thing is, X land used to have 400 acres with the stream in the middle, one of the people who bought the land is interested in a conservation easement. I worked and developed it to see if they could get another property owners to join in on it. I have a group of people interested and upstream folks who might be interested if approached but eager to see how to pull people together.

Aerin: If there are more people at a place or better ways to get more interest, I'm happy to find a better way to do outreach. The clean-up plan is better if the people who live there are there help contribute their input. The more involvement, the better the plans turn out.

Attendee: Timber cut, curve on X road has built 3 different ponds in the property.

Attendee 2: A lot of ponds were built in areas we don't have data for.

DOF: A lot of ponds built are army corps permitted. It depends if it's an upland pond or other factors. We're nearly at 100% on BMPs for water quality on timbered land. If there is sediment leaving the job it would shock me because, if we get notification of a cut, we're on site within 20 days and again a minimum 45 days after that. They have to report on all of them so if there's a water quality problem, then by law they step in to write a recommendation to fix it. If not fixed during certain time then they upgrade to something more serious.

Aerin: This unnamed tributary has been impaired since at least 2012. A lot of the sediment in the stream could be historic. There also could be current sources, like those coming from moving a lot of land for development. In this area of Virginia, it takes a bit of time for sediment to move through the system. So, historic forestry and agricultural practices could still be contributing to water quality in this area. You can improve upon historic sediment and nutrient

contributions by reestablishing forested buffers or reconnecting the creeks to their floodplains. That all said, there may not be a specific unitary source contributing right now causing these problems

Attendee: how do we get this fixed?

Aerin: Describes paper referencing a study done in Georgia [similar land use to piedmont], with evidence showing that with no conservation practices, it could take 1000 years to naturally move historic sediment that has been built up. But, reestablishing coverage and flood plains and implementing BMPs reduce that timeline really quickly. We can begin to see improvements in a couple of decades. Land use changes, even things as simple as cutting new trails or ponds, can put 400 years of sediment suddenly on the move. Addressing it as it happens and putting BMPs on the ground will help capture that sediment. Delisting does take a while but a stream in this county has been delisted. In our data base, all the nutrient data that we have across the state since the 70s is available and can be compared with today's numbers. Statewide we are seeing drastic improvements. Doing TMDLs in little watersheds like this is important because targeted efforts on smaller watersheds adds up to improving our larger watersheds as a whole. Maybe 5 years from now, better land management practices and more awareness will help to reduce big plumes of sediment coming along and burying habitat. I wouldn't assume that there is a single source the tis deliberately doing this. These impairments are likely from an accumulation of sediment and nutrients overtime. Throughout the years, you're losing tons and tons of soil from the landscape.

DOF: I'm in the woods every day and one thing I've noticed over 15 years is an increase in streambank erosion in every stream I walk. This follows increased heavy rain events. I believe that average rainfall is worst indicator because the averages may not have changed but the amount of rain we get in single events has really gone up. When I see sections of streambank collapse, and sediment piling up just staying behind fallen trees until the next big rain, it seems to be getting worse. How does the modelling take this change into account? I think a lot of folks can be doing BMPs and doing their best but this still happens from these storm events. How will we ensure that we're not trying to reach an unreachable goal?

Aerin: So we have received some guidance to be shifting towards making modelling assumptions based on more extreme rainfall events, rather than historic averages. The models already account for soil type, how likely it is to erode. Theres been talk to use the lowest and highest rainfall years on record to find what those extremes are and model streams based on those. If there is 4 years of drought and then suddenly extremely heavy rain, you're right in that it could take whole sections of streambanks down. That will be factored in during the modelling.

Karen: Streambank restoration is big part of improving water quality. The model does factor in natural streambank erosion and part of model is calculating daily precipitation. We are starting

to move into different rainfall events, so we use the most recent data rather than historic data. Daily input will model those large rainfall events and the streambank erosion of those.

DOF: We see that as one of our biggest problems. We have to go back on jobs after 1 year to make sure they are still holding up and will still see things that are catastrophic and realize large influx of water from a single extreme event occurred despite BMPs.

Aerin: Something to remember also is that we often demonize sediment, but sediment does naturally occur. Streambanks do naturally give way. There are streams on other side of state that have issues with trout populations because dams have held back all of the fine sediment that naturally is transported down streams. Without that sediment, the trout have nowhere to spawn. So natural events like an old tree dies and releases a bunch of sediment from a new fallen bank is not what's impairing streams but rather a collection of poor land practices overtime with large sediment deposition from everyone contributing more than they should.

DOF: We have seen a lot of catastrophic ponds

Attendee: what do you mean catastrophic?

DOF: Meaning ponds giving way. The Army Corps didn't issue a permit because landowners have mindset they will build and won't get caught. But when done improperly, it is continually washing sediment downstream while working on the pond. In an unnamed county, they built it incorrectly because no permit and whole time operating machinery was like turning on a blender to the stream.

Attendee: Did they own property?

DOF: Some of it, but it is the majority of people below them that suffered consequences. Damage was already done and will take a lot of time.

Aerin: One person or action can cause tons of sediment to go down the stream. Reconnecting the floodplains and creating buffers can create sinks for that sediment. If you have those places, you can help correct the actions of those from upstream. So this person here may be able to make up for the poor choices of this person there. It can help to be proactive whenever we do these things. The property that really needs it can use it but also the other areas downstream can also use BMPs to help buffer and mitigate sediment from upstream.

Attendee: Something important for me from this meeting is learning how important insects are. I was just swatting and not appreciating their efforts.

Aerin: Yeah, they live there all the time so if you want to ask how water quality is they will tell you.

Attendee: When X was going up and down the creek we talked about the Roanoke Creek project that started in 1950s that led to the dam. As part of that project a lot of channelization occurred in those streams. X said someone wrote dissertation to look at what had happened in Charlotte County due to channelization. Channelization got rid of riparian buffers that would've helped it seems.

Forester watershed specialist: Yeah, changing the shape of streams doesn't last long. Those streambanks that are 6 ft high disconnect the stream from the floodplains. The idea of the restoration work is, while very expensive, it's helpful because it reconnects streams to the rest of the landscape so that whenever waters do come up, it can take sediment and nutrients to the floodplain instead of further down river.

Attendee: One of the homeowners specifically told everyone no channelization on his property in the channelization project.

Attendee: Thank you so much.

Aerin: Any other questions out there?

Aerin: Thank you all for coming. These streams don't look like some of the other impaired streams around Virginia. These are good looking streams that will need more of a soft push or nudge to help get these to be better rather than a hard shove. I genuinely believe we can recover these streams relatively quickly.

This concluded the meeting.