CHESAPEAKE BAY PROGRAM

LAND USE & FORESTRY WORKGROUP JOINT MEETING

Meeting Minutes
December 1, 2023
10:00 AM – 3:00 PM
Meeting Materials

Summary of Actions and Decisions

Decision: The LUWG and FWG approved the following methodology for an updated riparian forest buffer indicator *(blue = additions based on feedback from the FWG/LUWG):*

- Add land use data to Chesapeake Progress to show % of riparian area forested by state and total watershed (for 2013/14 and 2017/18).
- Use the 1:24k network but with caveats in the narrative - additional analyses will be done to determine actual bufferable area from this data based on other characteristics (such as drainage area or others).
- Use 100 ft buffer for stream for official indicator (but have data available for 35 and 300 ft).
- Forest = areas with tree canopy over 15 feet and an unmanaged understory (Forest + Other Tree Canopy classes). Additional data on the side that includes TC over turf classes.

Minutes

10:00 Welcome, Roll Call, Review of Meeting Minutes, Action Item Update – KC Filippino, HRPDC (LUWG Chair), Anne Hairston Strang, MDFS, and Kesha Braunskill, USFS (FWG Co-Chairs) (15 min).

Announcements:

- Please put your name and affiliation in the chat box for attendance purposes. Thank you!
- The LULC use-case survey is still open! Please submit responses and share if you know of any organizations using the high-resolution land use/land cover data: https://forms.gle/thXowuVCRDcYgZaa6
- Call for nominations for LUWG co-chair and at-large members by **COB Thursday, January 18.** Contact Jackie Pickford (pickford.jacqueline@epa.gov) with nominations and/or questions.

Part 1: Updates on LULC and Indicators

10:15 Updates to LU Rules for the 2024 Edition of the Land Use/Land Cover Data – Sarah McDonald, USGS / Steven Guinn, Chesapeake Conservancy (20 min).

Sarah and Steven reviewed the updates made to the land use rules since receiving feedback from various CBP workgroups.

Discussion

KC Filippino: What states are you currently working on?
Steven Guinn: All states, but we are looking at seasonality changes that have become a challenge. UVM has doubled its QA team to help observe the changes to ensure accuracy.
Peter Claggett: Observations are a challenge through NAIP imagery. State data collection happens at a state by state level, not through one swath of the coast. This data is free and there are lots of quirky bits.
Rob Schnabel: Lots of MS4s are doing stream restoration projects. Can we estimate tree loss from these projects?
Steven Guinn: Yes, I think we will be able to track a trend.
Orsolya Lazar (in chat): I agree, MS4 work is an issue and often counter intuitive. Thank you for bringing it up!
Peter Claggett: We have one metric of fragmentation baked into our classification. When forests are chopped up we can count it as fragmentation. We are trying to be more true to the forest definition of succession.
Anne Hairston-Strang: The succession is important. Most stands on the east coast are 80-100. We do not have a lot of age variability.
Steven Guinn: Edge effect is important.
Samuel Canfield (in chat): Resolve Hydro about a high resolution remote sensing database/tool/satellites (Planet SuperDove). Has that information been provided to the LUWG/FWG?
Anne Hairston-Strang: The annual change in forest loss to salt intrusion/sea level rise is 67,000 acres in MD.
Rob Schnabel: It would be nice to document the ghost forest issue so we can see trends of where forest goes to wetlands, not being clear cut, so we can see where that is occurring.
Steven Guinn: I see that as more of mapping wetland changes.
Peter Claggett: We have a Bay Program funded project that looks at DelMarVA monthly time series spectral indices with sentinel and landsat imagery to find signals of marsh disintegration and migration. It's wall to wall coverage though. We want them to look at saltwater intrusion and changes to forest as well. If you have access to that data, it would be helpful to pass that along to them for the project. One of the goals is to expand this to the entire Bay watershed in upcoming years.
Kesha Braunskill: DNREC could probably help with that if you want to reach out to them.
Rob Schnabel (in chat): With salt water intrusion there would not be a transition to different tree species but standing dead trees. With the mapping document dead standing trees as this creeps upland?
Samuel Canfield (in chat): We heard a presentation in the WTWG from Thomas Howard, Resolve Hydro about a high resolution remote sensing database/tool/satellites (Planet SuperDove). Has that information been provided to the LUWG/FWG?
Jackie Pickford (in chat): @Samuel Canfield, WVDEP we are talking with Thomas to potentially set up a presentation to the CBP in the future.
Tom Howard (in chat): @Jackie Pickford @Samuel Canfield, WVDEP, I am happy to provide some more information. Satellite imagery could address some of the issues previously discussed (e.g., collecting data for the entire Bay within the same time of year)

Tom Howard (in chat): Will imagery collected in prior years be reclassified using the new classification schema you are presenting?
Sarah McDonald: Yes, we have adopted the approach of mapping wall-to-wall the most recent date with the most updated data. UVM produces updated land cover change which we retroactively apply the same models over time where change occurred in the time series.
Olivia Devereux: We map all the way back to 1985 - is there still dependence on LCD?
Peter Claggett: Yes, still a dependence on LCD before then. Sarah is working on a fix to that.

10:35 Local Review of the 2024 Edition of Chesapeake Bay Land Use Land Cover Data – Steven Guinn, Chesapeake Conservancy (25 min).

Steven gave an overview of the local review process for the 2024 edition of the land use/land cover data, including the timeline, a short demo of the review application, and expectations for review. There was time for discussion following the presentation.

Discussion
Sarah McDonald: Local review will start in the late second quarter, instead of early second quarter. Likely in March or April 2024. There will not be a rolling release, everyone will get it all at once.
KC Filippino: Can the Conservancy coordinate with state reps and the at-large members to make sure it's getting to the right people?
Sarah McDonald: Will do. We are opening this up to the FWG for review as well. We will send it to Sophie to distribute to the FWG.
Deb Sward: Is there an "add data" widget to this version of the application? We have ancillary data we uploaded last time for a GIS analysis.
Steven Guinn: Right now, we don't have one but I will look into it.
Rob Schnabel: Regarding agricultural land uses - along the Appalachian Trail they are clearing land for wineries. Is it possible to include that in the classification?
Steven Guinn: We map those already. This isn't the 63 class land use, this is rolled up. But originally we separate cropland into orchards and vineyards, but it's not shown in the aggregated classes shown on the viewer.
Peter Claggett: That class does have some accuracy issues but noting that will improve in the next iteration of the data. We'll have higher resolution which will allow us to capture these gaps between rows.
Steven Guinn: Mapping with AI and having the final resolution to discern these patterns make it easier to discern between crops. I agree that gaps in Forest are good.
Anne Hairston-Strang: But they can show up as forest loss if you're not careful about it.
Steven Guinn: Right. Right now they are mapped as natural succession.
Peter Claggett: Similar to the Conservancy's work right now mapping solar panels - once it is mapped with AI we can better classify the land in-between.

11:00 Discussion and Approval of Riparian Forest Buffer Indicator and Methods – Sarah McDonald, USGS, & Katie Brownson, USFS (45 min).

Sarah and Katie reviewed proposed updates to the riparian forest buffer indicator and asked the FWG/LUWG for approval of the methodology. They also discussed other relevant visualizations and analyses needed to inform decision-making.

Discussion

Anne Hairston Strang: [re: slide 10] Sorted sediment is a good indication of a stream.
Judy Okay: The FACET data or pink lines might be the current or previously classified "waters of the US", and they don't run only during high precipitation periods so they support a different kind of life. They are ephemeral gullies.
Anne Hairston Strang: As we have changed practices, our infiltration rates have improved, so that may be a factor in why there are clear geomorphic features of streams here but they aren't actually carrying the water due to infiltration.
Scott Heidel (in chat): Ephemeral streams are direct inputs of siltation from ag lands to the system that need to be buffered. Mapping them is critical and appreciated. Thank you.
Rob Schnabel (in chat): Headwater streams, including intermittent, are critical to include in the mapping for buffering and groundwater recharge. Otherwise we will lose significant miles of streams and infiltration potential. with Climate change even more critical.
Judy Okay: How do you handle the karst topography areas?
Peter Claggett: The hyper resolution stream data will correct some of these. The density is the same as the NHD product but the horizontal alignment is corrected. The hyper resolution data picks up all gullies and swales and more. We have a project on this now and will discuss it more in depth in about a year. After we have a more accurate stream network, how do we attribute it with information that's needed to determine if it should be a part of our "bufferable" network? Need to figure out how the data will be used from a management perspective.
Mark Symborski (in chat): Stream characteristics relevant to stream classification cannot be discerned from aerial photographs, but require field data.
Peter Claggett (in chat): True. The pilot project we have initiated will involve a significant field campaign for the pilot areas.
Anne Hairston Strang: I think it's very helpful to map these, but let's be careful about calling them buffers or ephemeral features. They are areas of concentrated water on the landscape. It's going to be a prime zone of opportunity for a lot of the BMPs but the cost of treating them may not be the same as buffering a stream with water in it.
Peter Claggett: Right, I think we're on the same page.
Steven Guinn: Maybe we can call them concentrated overland flow.
KC Filippino (in chat): If you add more stream networks, does that mean they should be buffered, will the goal have to increase? Will this inadvertently show lack of progress to your goals?
Sarah McDonald: The more dense the network is, we see that a lot of the features we're missing are headwater streams in forest areas that we haven't touched.
Katie Brownson: Yes, we are capturing more forested riparian areas than we were before.
Olivia Devereux (in chat): Does Facet include drainage ditches? There is a lot of controversy about encouraging buffers on drainage ditches/tax ditches. This is from a WQ perspective.
Peter Claggett (in chat): Only those that are in the 24K NHD.
Judy Okay: I have a suggestion for the FWG to discuss the topic of eastern forestry near tidal waters. Perhaps we can discuss how to set goals in coastal areas at a future meeting.
Katie Brownson: Yes, we can do that. On a separate note, with the hyper resolution data we will be able to better define the bufferable universe. I think the 1:24K network is better for telling

the story of what is bufferable, but I want to confirm that everyone is okay with this approach for now.
Anne Hairston Strang: These are opportunity zones for a suite of BMPs and you have to match it to the land use.
Sarah McDonald: If we don't have some of the attributes moving forward, do you recommend waiting until we have them in 5-ish years or continuing with this method in the meantime?
Susan Minnemeyer: There are 1:24k streams that have 1:100k underneath them - you could potentially flag them differently and maybe make the ones that overlap a different category or something. But I agree 1:24K is a huge improvement for spatial accuracy.
Anne Hairson Strang: That's fine with me but we need to be careful about calling them streams.
Peter Claggett: I would argue for something like using drainage area to segment the 24K pink network or something. The 100K data is not good. There is a huge section in Virginia that has the stream density mapped differently than everywhere else, and it is a blatantly obvious mistake. The more we avoid using the 100k for anything, the more we can avoid that problem. We can align the 100k to the actual streams with FACET just like we did with 24K but doing it more based on drainage area, stream order, soil attributes would be a much more robust approach that we may even be able to translate over the hyper res once we start messing with that.
Katie Brownson: To be clear, we do not plan to put out maps saying this is where we think you should buffer. We just want state level statistics about how much forest cover we have in riparian areas.
Orsolya Lazar (in chat): Are the blue lines always straighter than the pink?
Rob Schnabel: Sounds like we're leaning towards 24K, which is great. Even if we don't do buffers along the pink areas, making sure we have grass waterways or something will be important. So this map will still be helpful even if it doesn't become a forest buffer.
Katie Brownson: I think we can build that into the narrative we create for this indicator - that some of these areas won't be suitable for forest buffers and that we'll do additional analyses to determine where those areas may be.
Sarah McDonald (in chat): We can align the blue lines to the landscape using the same methods as were used for the pink.
Dave Montali: I think you should go with the most common and not higher resolution than the pink, but you may want to adjust your goals somehow. They may be too fine to expect forested buffers on all these lines.
Anne Hairston Strang: When you're in the field, you'll be better able to note where parts of these lines need buffers and some places do not.
Deb Sward: Is there preliminary data available?
Sarah McDonald: We are trying to get approval on the method first before providing preliminary data.
Katie Brownson: To recap - there is some concern about the 1:24k network, but we don't have a specific alternative at this moment. Would you be okay with using this if we caveat in the narrative that this isn't a perfect fit and additional analyses will need to be performed to determine what is actually bufferable?
Anne Hairston Strang: Yes, having some additional analyses will be needed.
Frank Rodgers: Perhaps we can call it a flow path instead of a "stream".
Dave Montali: This might be a different issue, but if you're not counting tree canopy over turf toward your buffer goal, there may be a scenario where someone intends to apply a forested buffer but can't get credited for it.
Sarah McDonald: The reporting is separate from the land use data, though, right?
Anne Hairston Strang: Yes, it is, but people look for consistency.

Katie Brownson: We can include tree canopy over turf or not. Neither is a perfect fit right now. But I think when we move to the next iteration of the land use, then not including tree canopy over turf will be more accurate.
Sarah McDonald: Would it be helpful to keep tree canopy over turf as a separate set of data? For contextual information?
Anne Hairston Strang: Yes, that'd be helpful.
KC Filippino (in chat): That's a good point Dave, there could be a disconnect then between what's being reported and what's being tracked on Chesapeake Progress.
Rob Schnabel (in chat): Is it a stream in 2018 versus 2023? With drought years, like this year, your site visit may make streams go away but next wet year you have created a problem. From a conservation and hydrology standpoint, having mapping that shows those pink lines are important.
Sarah McDonald (in chat): the stream layer is consistent over time. The change is the change in tree canopy from the land use.
Mark Symborski (in chat): The second bullet is fine as long as it is understood that not all of the 1:24K network will be suitable for buffer restoration.
Dave Montali: I believe the goal was 900 miles of buffer. When you had the original goal, was there a width associated with it? If it's 100 feet, there's a disconnect between what we're trying to do on the water quality side because there's a minimum buffer of 35 ft.
Judy Okay: The average buffer was 100 ft which is why we chose that. In some places it's 35 ft and in some places it's 300 ft.
Katie Brownson: Yes, so anything within 35 and 300 ft counts towards the goal.
Olivia Devereux (in chat): One of the things for this group to be aware of is the modeled loading rate for TC over turf and TC over roads. Those can be improved upon in the next version of the model. Topic for the future…
Anne Hairston Strang: I suggest that we don't use the word 'mature' - we should say tree canopy over 15 feet instead.
KC Filippino (in chat): Will the 1:24k be temporary and then there will be another analysis when the hyper-res is available?
Peter Claggett (in chat): Yes- but that process may take 2-4 years.
Sarah McDonald (in chat): Yes, KC, but it will take some years. Once the hyper-res data is ready next summer, additional work needs to be done to assess stream permanence.
Olivia Devereux (in chat): The 35 foot was really about the fact that the streams are not linear, and fences are. So where a stream bends toward a straight fence, it may get as narrow as 35 feet, but generally is further away.

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Part 2: Review of Updated CBP Data & Tools

11:45 Protected Lands Data – John Wolf, USGS- CBPO, and Aurelia Garcia, NPS (25 min).

John and Aurelia provided an overview of the 2022 update to the Protected Lands dataset.

Discussion

Rob Schnabel: In a particular county in MD, we've seen some forest losses in agriculture within lands that have permanent easements. Are we able to get data on forest loss through the protected lands data? It could help states from a policy aspect. Would be interesting to see land use changes within the protected lands.
John Wolf: We are interested in capturing the land use change within protected areas. We talked about using the LULC change data and carving out the protected areas, so that's planned for right now. The data is within a limited timeframe, but it's a start.
KC Filippino: Have you been working at all with the Federal Facilities Workgroup (FFWG)?
John Wolf: We presented to the Management Board, but not the FFWG. We could reach out to them if they want to hear about this directly.
Sophie Waterman: I can bring this up to the FFWG leadership.
KC Filippino: Peter, is this data being used for the LU change model forecasts?
Peter Claggett: Yes, we use this and all federal lands augmented with DoD lands. We're simulating non-federal residential commercial growth, so we exclude protected lands and federal lands for residential commercial growth. But we use that data augmented with all DoD lands.
Susan Minnemyer: Is this data publicly available yet? Also wanted to echo robs comment about land use change within protected lands because it's important. The MD forest study showed us that some of these areas generate forest, not just protect forest loss.
Aurelia Gracia (in chat): https://www.chesapeakeprogress.com/conserved-lands/protected-lands
Rob Schnabel (in chat): Thank you John! Having forest loss on lands in Agriculture Preservation will be super helpful. State continues to fund more protected lands and it may need to place more stringent requirements on land use changes, especially when there is a waiting list for Ag Preservation funds.
Peter Claggett (in chat): Where are you seeing forest -> ag transitions in Maryland?
Rob Schnabel (in chat): MD's biggest county, Frederick County
Peter Claggett (in chat): Interesting. Is this something that has happened recently- post 2018 or has it been happening continuously over the 2010's?
Rob Schnabel (in chat): Continuously and I have seen a bunch the last 2 years as well.
Aurelia Gracia (in chat): Data is public and there is a press release out from the Bay Program: https://www.chesapeakeprogress.com/conserved-lands/protected-lands
Norm Goulet (in chat): For the protected lands data, I don't see a link to download the GIS data, is that available?

12:10 LUNCH (1 hr)

1:10 Chesapeake Healthy Watersheds Assessment (CHWA) 2.0 – Peter Claggett, USGS-CBPO (25 min).

Peter gave an overview of the Chesapeake Healthy Watersheds Assessment updates. CHWA 2.0 was developed with support from a 2021 GIT funding project. to view the tool click the link below.

- Link to CWHA 2.0: https://gis.chesapeakebay.net/chwa/?page=Overall

Discussion

KC Filippino: How much value are we putting in this when the data is just not equitable across the watershed?
Peter Claggett: It has just been released so we have yet to put any value into the tool. You are corrected that It is biased to parts of the watershed that have the most data.
Sarah McDonald: The model filtered some of the points. So, all the points you're seeing were not used to train the model. Some of these points go back to 1992. We're using landscape data from 2013 14 to 2017 18, So we filtered these points based on the confidence and the ability to associate them with our modeling scale, we restricted them to be taken or recorded from 2018 or more recently. So we did some things to make it less focused on MD and other places with lots of CHESSI BIBI data.
Steven Guinn: Have you looked at how this model compares to the EPA River and Streams assessment? They also have biological indexes.
Peter Claggett: No we have not
Mark Symborski: Is this a multiple regression model?
Sarah McDonald: This is a random forest model, not a regression model.
Mark Symborski: Would the degree of multicollinearity that you would get with highly correlated variables like these be a problem for a decision tree model?
Sarah Mcdonald: random forests are relatively robust in how they work. For every decision tree that they build, they build it for a subset of the predictor variables and a subset of the data on which it's training. It does that numerous times. Every single tree is based on a subset of the data and a subset of your predictors. The model's relative is not too effective by collinearity or things of that nature. Which is one of the benefits of random forest models
Mark Symborski: did you take once the model was developed? Did you take it apply it to watersheds in various places that have actual BIBI scores and see how well it how well it corresponded to those values?
Sarah McDonald: Yes it is documented in the report
Anne Hairston-Strang: Going through it with the Maryland Healthy Watershed Assessment, there is a real value in showing new people what matters when it comes to bay health. They show what matters on the landscape.
KC Filippino: Which year for the high res LU data?
Sarah McDonald: We incorporate both 2017/18 and recent change data from 2013/14-2017/18.
Rob Schnabel: Are Data points in Maryland based on Maryland Biological stream survey?
Sarah Mcdonald: Yes, I believe so.
Samuel Canfield: Was there test data excluded to identify how well the Random Forest model predicted the test data? Or independent test data predicted upon?

Sarah McDonald: Each decision tree excludes randomized test data. The accuracy of predicting these areas are assessed using the "out-of-bag" score. This number is in the report.

1:35 Updates to Chesapeake Bay Watershed Data Dashboard – Ruth Cassilly, UMD, Kaylyn Gootman, EPA-CBPO, & Jackie Pickford, CRC (25 min).

Ruth and Jackie gave an overview of the Chesapeake Bay Watershed Data Dashboard, an online tool that provides accessibility and visualization of data and technical information that can help guide water quality and watershed planning efforts. They reviewed recently updated features of the Dashboard, such as the Land Policy and Conservation module and Riparian Forest Buffer module, and asked the group for feedback on how to improve the existing capabilities of the tool.

- Link to Data Dashboard: https://gis.chesapeakebay.net/wip/dashboard/

Discussion

Anne Hairston-Strang: Do you have examples of jurisdiction types that are using targeting data? It would be helpful to have case studies for different landscape types put into local-level templates.
Ruth Cassily: Not something we are doing, but that is definitely something we could think about adding.
Rob Schnabel: would love to have buffer opportunities on county fact sheets to help riparian areas by county.
Judy Oaky: This is already out of date. We have planted trees within 5 years. We have to keep in mind the date on it already.
Oliva Devereux: We will add spatially explicit mapping over the next few years. From a CAST perspective, there is no domain for buffers due to the stream miles discrepancy. We will be able to help with more.
Rob Schnabel: We just need a small point on the current fact sheets. Just get the data out there.
Susan Minnameyer: Hosting ready data can be expensive, but asking ESRI to host it for free might be an option. They already host analysis-ready data in their living atlas. There is an argument that this would bring so many people to their site and benefit county-level folks working on buffers.
KC Filippino: How was vulnerable groundwater determined? Groundwater isn't modeled in the watershed model right?
Ruth Cassilly: Vulnerable groundwater data came from USGS- data
Scott Heidel: Is there a way to map existing BMPs reported to NEIEN on this app? It would help to identify areas of opportunity
Jackie Pickford: In the management practice module, we have reported BMP implementation mapped by county. I think right now its 2020 progress but Ruth would know when that will be updated
Helen Golimowski: @Scott Heidel, PA DEP The BMPs are reported at a variety of different scales, such as state, HUCs, county, as well as some lat/longs. We are working on maps with BMPs by category correlated with loads. See the presentation and maps linked in the last paragraph of Map Tools here.
https://cast.chesapeakebay.net/Documentation/MapToolSpatialData

Ruth Cassilly: The BMP implementation data in the Dashboard when its is released early in 2024 will be from 2021 Progress- but we will continue to work to make more recent Progress years available.

2:00 State of Forests (SOF) 2.0 Story Map – Katie Brownson, USFS-CBPO (25 min).

The SOF 2.0 story map uses the recently released 2017/18 land use land cover data to provide an updated understanding of the 2006 State of Chesapeake Forests Report and how these areas are changing. Katie presented the newly released story map and asked the group for input on additional analyses to include in future iterations of the tool. Link to SOF 2.0 story map:
https://storymaps.arcgis.com/stories/cb5b91c1c6fd43478f01cf8e8a7d6e9d

Discussion

Anne Hairston-Strang: Who do we want to be using this data, and what do we want them to interpret/apply to their projects? Jurisdictions have expertise with things like stormwater management. They can give us a better understanding of what projects they would implement and the FWG can educate about how certain forestry practices. How can we make it easier to implement trees as storm water management?
Katie Brownson: A StoryMap might not be the best format to share some of the more detailed information. Fact Sheets or PDFs might be better for jurisdictional outreach.
KC Filippino: an urban forest component would be a great addition to this. Storm-resilient trees are a big topic in VA. Urban Stormwater WG would be a good place to discuss some of the urban aspects.
Debb Sward: Would love to see a Bay-wide to local scale analysis to help support state's work.
Susan Minnameyer: Into and out of ag change data would be interesting. Be interested in seeing where the forest is coming from and going.
KC Filippino: What about urban forestry? Can that be incorporated more in depth? VA urban foresters are trying to provide outreach on storm resilient trees. And they're including Trees as a BMP for regulated construction in VA now too.

Part 3: Looking Ahead

2:25 Brainstorm: Beyond 2025 and Phase 7 Watershed Model Needs – All (30 min).
Members took the time to brainstorm potential LUWG/FWG Phase 7 needs. The group was asked to provide feedback on questions, such as:

- What are the most pressing questions for the FWG/LUWG to understanding tree cover that need to be answered?
- Are there new data/applications that would be helpful to have?
- How can the FWG and LUWG help inform policy decisions for land use planning beyond 2025?

Discussion

Peter Claggett: What type of forest information is feasible to obtain that is crucial for the forests for the next 5 to 10 years?

Anne Hairston-Strang: The forest health layer and tree species at a finer scale. Temporal data of tree species.
Chris Miller: Doing pine and hardwood mapping is something that we can do in DE, but beyond that, it's not that important.
Steven Guinn: Temporal data is more important than resolution when it comes to understanding species. We see lots of invasive species coming earlier than our natives.
Peter Claggett: in the current model, we have forest (other TC), TC over turf, TC over impervious, and harvest. Wetlands load like forests. We have a mixed open class which is a hodge podge of classes that do not have unique loading rates.
Susan Minnameyer: The solar question is huge. We do not know how it is loading and need to figure that out.
Oliva Devereux: Separating things in the model is different than doing it in terms of land use. It might not be helpful for the model.
Rob Schnabel: Water quantity aspects! County-by-county quantity is a big issue and will continue to grow.
Anne Hairston-Strang: That could be a BMP question.
Rob Schnabel: Soil organic matter and infiltration how does it impact base flow. USGS research on a smaller scale could be helpful.
KC Filippino: Big picture- The train is moving quickly. Emailing your thoughts to chairs as they are apart of small group. What is the TOP climate consideration for 2025?
Rob Schnabel: How about focusing on land use as it relates to water quantity? Land uses that encourage infiltration and retention. Public will care about flooding or wells/streams running dry. Plus key to shallow water habitats
KC Filippino: Would love to see land use planning policy development based on historical patterns and the land use change data. This is more of a B25 recommendation, not necessarily P7.
Michelle Katoski: Tuana Phillips masters work focused on infiltration capacity of urban forest patches, advised by folks at UMD and UMBC
https://www.sciencedirect.com/science/article/pii/S0301479719307558?casa_token=x3QxQwNTikIAAAAA:VSPmtGNbPyniaVmq7_7sCIy-DsV1qu1XP0vk6YC75KU7M4ctnxXR0BK6LU6Y_Qb2MbJWAaK2Ww

Feedback Requested: The FWG & LUWG was asked to provide feedback on Beyond 2025 and Phase 7 watershed model needs.

2:55 Recap of Actions and Decisions – Jackie Pickford & Sophie Waterman, CRC (5 min)

Decision: The LUWG and FWG approved the following methodology for an updated riparian forest buffer indicator *(blue = additions based on feedback from the FWG/LUWG):*

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3:00 Adjourn

NEXT FWG MEETING: Wed, January 6th, 2024 from 9 – 11 AM.
NEXT LUWG MEETING: Wed, March 20th, 2024 from 1 – 3 PM.

Participants

Sarah McDonald, USGS-CBPO
Jackie Pickford, CRC/LUWG Staffer
Sophie Waterman, CRC/FWG Staffer
Peter Claggett, USGS-CBPO
Katie Brownson, USFS
Judy Okay, J&J Constulating
Frank Rodgers, Cacapon Institute WV
Deborah Sward, MDE
Susan Minnemyer, Nature Plus
Kesha Braunskill, USDA
Alana Crowly, MD DNR
Lorenzo Cinalli, USFS-CBPO
Chris Miller, DE DOF
Steven Guinn, Chesapeake Conservancy
Mark Symborski, Maryland-National Capital Park and Planning Commission
Scott Heidel, PA DEP
Dave Montali, Tetra Tech, WV, MWG
Rob Schnabel, Chesapeake Bay Foundation, Maryland
Arianna Johns VA DEQ
Mark Dubin, UME/CBPO
Nicole Christ MDE
Irina Beal, WeConservePA - Harrisburg, PA
Olivia Devereux, Devereux Consulting
Robbie Coville, PA DCNR Bureau of Forestry
Norm Goulet, NVRC-USWG
Samuel Canfield, WVDEP
Nancy Sonti, USFS Baltimore Field Station
Tom Howard, Resolve Hydro LLC
Anne Gilbert, MD DNR, Forestry
Holly Walker, DE DNREC
Jeff Sweeney, EPA
Andrew Franzyshen, Crater PDC
Lori Brown, DE DNREC
John Wolf, USGS
KC Filippino, HRPDC, LUWG Chair
Lydia Brinkley, Upper Susquehanna Coalition, NY
Tristan Puffenberger, Forestry Coordinator at Cacapon Institute
Steven Guinn Chesapeake Conservancy
Meghan Noe Fellows, Delaware Center for the Inland Bays
Taylor Hoffman, Delaware Center for the Inland Bays
Bay Hanson, USDA Forest Service
Orsi Lazar, PA DCNR UCF Community Tree Specialist
George Doumit, DE DNREC
Tyler Trostle, PA DEP
Elliott Kurtz, Chesapeake Conservancy
Erin Chapman, EPA CBPO
Joe Schell, DE DNREC
John Pierre, Dunn, NC
Mindy Neil, WVDEP

Acronym List

CBP: Chesapeake Bay Program
CBPO: Chesapeake Bay Program Office
CHWA: Chesapeake Healthy Watersheds Assessment
COB: Close of Business

CRC: Chesapeake Research Consortium
FWG: Forestry Workgroup
HRPDC: Hampton Roads Planning District Commission
LULC: Land Use / Land Cover
LUMM: Land Use Methods and Metrics Outcome
LUOE: Land Use Options Evaluation Outcome
LUWG: Land Use Workgroup
MDFS: Maryland Forest Service
NPS: National Park Service
SOF: State of Forests
PA DEP: Pennsylvania Department of Environmental Protection
UMD: University of Maryland
USGS: United States Geological Survey
USFS: United States Forest Service