CHESAPEAKE BAY PROGRAM LAND USE WORKGROUP

Meeting Minutes

Aug 4th, 2021

1:00 PM – 3:00 PM

Meeting Materials: link

Summary of Actions and Decisions

Decision: The LUWG approved the July 14 Meeting Minutes.

Action: Sarah McDonald, USGS, will provide the state wide pivot tables for areas within the Chesapeake Bay Watershed (excluding the portions that are not in the watershed) by COB Friday, August 5th.

Action: Rachel Soobitsky will distribute the most recent land use methodology document to the LUWG.

Decision: The LUWG endorses the use of the high-res land use change data (2013-2017) as the "best available data'' to inform CAST-21. ***Note:*** *There were reservations raised by the group related to how timber harvests are handled in CAST and about how the urban growth projections for 2025 will not include other land use transitions observed in the high-resolution data like timber harvests. (See below for more information). The LUWG leadership will brief the WQGIT of these concerns and the limitations of our consensus recommendation.*

Action: Peter Claggett will describe differences in the land use change summary tables distributed on July 30th and those in his presentation to address concerns raised by MDP and MDE. He will distribute a revised table consistent with his latest presentation.

Action: The LUWG is asked to provide feedback on the prioritized list for Version 2 Land Cover data. Please reach out to Rachel Soobitsky (rsoobitsky@chesapeakeconservancy.org) with any additional comments **by COB Wednesday, August 11.**

Action: Peter Claggett will provide the revised land use change data through 2025 to Olivia Devereux **by COB Tuesday August 17th**, which will be fully processed through CAST to show comparisons and then presented to the August 23rd Water Quality GIT meeting.

Welcome, Roll Call, Review of Meeting Minutes, Action Item Update – KC Filippino, Hampton Roads Planning District Commission

Announcements:

- **Decision:** The LUWG approved the July 14 Meeting Minutes.

Update on Land Use Change Data for CAST-21 – Sarah McDonald, USGS

Sarah gave an update on the land use change data for CAST-21 and reviewed the recent systematic fixes to the data. The main implications of the update were a decrease in cropland and pasture acres (added to cropland/pasture loss, removed from cropland/pasture gain), and an increase in mixed open acres (removed from mixed open, added to mixed open gain). The new county-wide pivot tables are posted on the calendar page. Members asked for updated pivot tables state-wide for all 13 categories of land use change. Olivia Devereux noted that she

needs the data through 2025 prior to the August 23rd WQGIT meeting in order to present to the GIT.

Action: Sarah McDonald, USGS, will provide the state wide pivot tables for counties within the Chesapeake Bay Watershed (excluding the portion of the counties that are not in the watershed) by COB Friday, August 5th.

Action: Peter Claggett will provide the revised land use change data through 2025 to Olivia Devereux **by COB Tuesday August 17th**, which will be fully processed through CAST to show comparisons and then presented to the August Water Quality GIT meeting.

Comparison of Mapped vs Modeled Land Use Change Data – Peter Claggett, USGS (20 min).

Peter presented a comparison of mapped vs modeled land use change data for the Chesapeake Bay Watershed illustrated by differences between the CBLCM estimates of land use change and CAST versions 19 and 21 at the county scale. There was a request from jurisdictions to see the methodology for land use decision rules that were overgeneralized. West VA raised the issue of overclassification of turf to tree canopy over turf due to the effects of shadows in the imagery. Virginia raised questions about how little of the harvested forest data returned to natural from mixed open.

Discussion

James Martin: How do the 13/14 land cover data factor into the change product?

- Peter Claggett: For a more thorough explanation, I would have to defer to UVM. The decision rules used for the 13/14 classification were not the same decision rules used for 17/18 classification, though we tried to be as consistent as possible.
- James Martin: If the issues were with the VA developed land cover data, I'd love to see some detailed communication as to what issues were identified and were problematic so that we can include that caveat with our data when we use it for other purposes.

James Martin: On the land use decision rules that were overgeneralized - are those decision rules documented so that we can go back and see what those overgeneralized rules were?

- Peter Claggett: Yes, Rachel has documented that really well. It's also documented in the code. When I say they are overgeneralized, I just mean that it could be a potential source of error.
- Lisa Beatty: I agree. It would be good to be able to go back to our partners and tell them what some of the associated errors are with that.
- Rachel Soobitsky: There is a tracked changes document that included that information as well. I'll send it to Jackie to post on the calendar page.

Dave Montali: In West VA I noticed low veg to turf, saying forest is decreasing and tree canopy over turf is increasing.

- Peter Claggett: We tried to limit that conversion but there were some other issues with shadows in the 13/14 imagery that were not present in 17/18 imagery. Let's have a follow up with Sarah where you can show us the issue.
- Sarah McDonald: In 2017 if an area is developed and there's tree canopy within 10/20 meters of that development or turf, it will be tree canopy over turf. But if an area was not developed in 13/14 then we will not call those trees tree canopy over turf because that land or low veg is not

developed yet. So from the imagery it's tree canopy the whole time, but land use changes from forest to tree canopy over turf. This is caused by our land use decision rules.

James Martin: Mixed open to natural successional growth where harvested areas have returned to forest, it's concerning that we're seeing only 5000 acres of that returning. I would have expected it to be a larger percentage of harvested area returning to natural from mixed open.

- Rachel Soobitsky: That's something we've noticed in the data already. It's less likely for the Lidar to pick up tree canopy growth in this short of a time period.
- Peter Claggett: I ran a regression against VA's reported timber harvest data and the amount of forest we have transitioning to mixed open derived from all the county pivot tables and the R squared value is .8, which is a pretty good correspondence with the magnitude of what we're mapping of what's being cleared. We're just not seeing it come back to forest. Part of that is not having Lidar data the same date as the imagery; part of it may be that it's growing back slower.

Action: Rachel Soobitsky will distribute the most recent land use methodology document to the LUWG.

Group Discussion – All (45 min).

There was a discussion about the harvested forest data. Peter clarified that the natural category he showed in his comparison of C21, C19, and CBLCM includes true forest, wetlands and harvested forest. Olivia confirmed that states have until August 31st to provide their timber harvest data. Peter stated that the Forestry WG is forming a forestry mapping task force that will look at forest harvesting data in more detail for CAST23. There was a brief discussion about what that may look like, and there was a concern raised about double counting, but ultimately the decision of how to handle the timber harvest data will be made at the WQGIT level. There were also concerns raised about the accuracy of the urban growth model predictions. ***The following concerns were raised about the endorsement of the high-res land use change data as the "best available data" to inform CAST21:***

1. ***The disconnect between using the land use change data for CAST21 versus making 2025 projections using the CBLCM.***
2. ***Double counting of the harvested forest data***

Discussion

James Martin: Why would we continue to use the land change model to predict the future? This change seems more representative.

- Peter Claggett: We're not going to use the land change model for the period 13 to 17, we will use only the high-resolution data to represent that time period. From 2017 onward, we will use the land change model as we've done before. As I mentioned earlier, there is a reasonable correlation between what we forecasted and what we've mapped from 13 to 17. The land change model is designed to forecast long term trends, not just four years (from 13 to 17). For CAST23 when we get the next four years of change, it will be much more accurate. The land change model still provides reasonable estimates watershed wide, it's more accurate than ignoring completely the possibility of growth, and it's probably more accurate than just taking the rates of change that we've observed and saying that it's going to continue.
- James Martin: What about all those changes in natural and agriculture?

- Peter Claggett: I'll present this later today but we'll work on the other data like timber harvest and agriculture to integrate it with our urban growth model. The decision today is only focused on the high resolution data. It's not about the land use change model. Let's table the modeling issue for CAST23 because if we were to add that to the decision point, I wouldn't be able to prepare the information for you all on that before September 1st.
- Norm Goulet (in chat): The 2025 forecast issue is a much larger discussion that will need to be had here and at the WQGIT. There are major ramifications to many prior decisions that this will impact

Deb Sward: One point of clarification - one of the summary tables (C21 v C19 v CBLCM) on the calendar page is showing different data than in the presentation. There seems to be an issue with the natural column numbers.

- Peter Claggett: The tables in my presentation and in the circulated email are the 197 counties in CAST. This is different from the watershed portion and the full 206 counties. So there may be discrepancies for those portions of MD that are outside the watershed. It could also be a result of tidal waters, which are not included in CAST. I'll follow up via email with the updated MD data and explanation.

Lisa Beatty: PA agrees to the decision item but has reservations about the use of the urban growth model predictions and how timber harvest is being handled. We are requesting that the forecasting approach be explained to the states. We would also like to be part of the FWG task team to help solve the issue of timber harvest.

- Arianna Johns: VA has the same reservations and the double counting of the timber harvest.

Action:

Peter Claggett will describe differences in the land use change summary tables distributed on July 30th and those in his presentation to address concerns raised by MDP and MDE. He will distribute a revised table consistent with his latest presentation.

Decision: The LUWG endorses the use of the high-res land use change data (2013-2017) as the "best available data" to inform CAST-21. ***Note:*** *There were reservations raised by the group related to how timber harvests are handled in CAST and about how the urban growth projections for 2025 will not include other land use transitions observed in the high-resolution data like timber harvests. (see below for more information). The LUWG leadership will brief the WQGIT of these concerns and the limitations of our consensus recommendation.*

Priorities for Version 2 of the Land Use and Land Use Change Data – Rachel Soobitsky, Chesapeake Conservancy (15 min).

Rachel discussed priority tasks for finalizing version 2 of the land cover, land use, and change products due February 2022. The LUWG was asked to review the list for missing elements and comment on the priorities.

1. *Incorporation of Planimetric Datasets*
2. *Seamline Corrections*
3. *Water Errors*
4. *Impervious Errors*

Discussion

Norm Goulet (in chat): The most obvious water issue in the developed areas that I found was the inability to recognize very eutrophic (green) bmp ponds as water. Overclassification to turf canopy over turf due to shadow effects is also a concern that I have.

Action: The LUWG is asked to provide feedback on the prioritized list for Version 2 Land Cover data. Please reach out to Rachel Soobitsky (rsoobitsky@chesapeakeconservancy.org) with any additional comments **by COB Wednesday, August 11.**

Updating 2025 Forecasts of Urban Growth for CAST-21 – Peter Claggett, USGS (15 min).

Peter presented data updates to inform the 2025 urban growth forecasts for CAST-21. KC Filippino asked about the revised CAST21 units (updated with the new MS4s). Peter explained the spatial units at which they need to summarize the high-res data for CAST and that they put the new MS4 data into the old 2013 data to get the change product over time. He also clarified that, currently, the high-resolution data will not inform 2025. Pennsylvania was encouraged to update their population projections once the 2020 census data is available. Peter and his team plan to develop a timeline of when states will need to provide data to inform 2021/2022 land use change, wall-to-wall land use, and the forecast.

3:00 Adjourn

NEXT MEETING: Wednesday, September 1st from 1:00 - 3:00 PM.

Meeting Chat

From Rachel Soobitsky to Everyone: 01:20 PM
and the good news is you can verify this by looking at it on the webviewer
From Me to Everyone: 01:32 PM
For anyone who did not get the email from July 30th, let me know and I can forward it to you.
From Mindy Neil to Everyone: 01:33 PM
WV has a new email system. I found Peter's message in SPAM.
From Me to Everyone: 01:39 PM
The data is now posted on the calendar page:
https://www.chesapeakebay.net/what/event/land_use_workgroup_conference_call_august_2021
From Rachel Soobitsky to Everyone: 01:43 PM
http://cicapps.org/obj1lu/ - here is the link for the updated LU change, remember you have to refresh your cache to see the updated data!
From Rachel Soobitsky to Everyone: 01:48 PM
Also important to note that 2014 VA LC had different classes and different definitions for classes so we had to do some work to get the 2014 LC to match our baywide data, and then go from there to create change/2018 LC
From Norm Goulet to Everyone: 01:59 PM
makes it even harder to say that can capture changes or verify using imagery.. small trees vs scrub/scrub all look the same
From Alana Hartman, WVDEP to Everyone: 02:33 PM
thanks for the clarification on the email/call for data!
From Rachel Soobitsky to Everyone: 02:45 PM

Deb- you guys used the most recent county pivot tables that I put up on July 30th, right?
From Shannon McKenrick - MDE to Everyone: 02:46 PM
Yes, this was from the google drive (I made the table Deb is discussing!)
From Me to Everyone: 02:55 PM
Link to Peter's presentation at the forestry WG meeting:
https://www.chesapeakebay.net/channel_files/42224/fwg_080421.pdf
From Norm Goulet to Everyone: 03:07 PM
The 2025 forecast issue is a much larger discussion that will need to be had here and at the WQGIT.
There are major ramifications to many prior decisions that this will impact
The most obvious water issue in the developed areas that I found was the inability to recognize very eutrophic (green) bmp ponds as water
overclass of turf to tree canopy over turf due to shadow effects is a concern that I have
From Ted T to Everyone: 03:27 PM
Noted
From Lisa Beatty, PA DEP to Everyone: 03:28 PM
Yes - please include all your data requests in a timeline format.

Participants
Jackie Pickford, CRC
KC Fillipino, HRPDC
Karl Berger, MWCOG
Peter Claggett, USGS
Cassie Davis, NYSDEC
Mindy Neil, WV DEP
Deborah Sward, MDP
Arianna Johns, VA DEQ
Young Tsuei, DOEE
Ted Tesler, PA DEP
Lisa Beatty, PA DEP
Sarah McDonald, USGS/CBP
Shannon McKenrick, MDE
Sally Claggett, USFS
Suzanne Travena, EPA
Dave Montali, Tetra Tech, WV
Lee Epstein, CBF
Clare Sevcik, DE DNREC
Rachel Soobitsky, Chesapeake Conservancy
Jacob Czawyltko, Chesapeake Conservancy
Travis Stoe, PA DEP
Jeff Sweeny, EPA
James Martin, VA DEQ
4107673000
Allie Wagner, NVRC
Norm Goulet, NVRC
Clint Gill, DE

Alana Hartman, WVDEP