CHESAPEAKE BAY PROGRAM LAND USE WORKGROUP

Conference Call Meeting Minutes

March 31st, 2021

1:00 PM – 3:00 PM

Meeting Materials: link

Summary of Actions & Decisions

Decision: The LUWG approved of the February Meeting Minutes.

Action: The LUWG is asked to conduct a review of the 14 prototype counties land use data set and be prepared to discuss any issues found and make a recommendation on land use methodology for the final data set for the next meeting on **Wednesday, May 5th, 2021**. Instructions for the review process are posted here.

- **Web Viewer**: https://tinyurl.com/DraftLandUse20172018
  - Username: LU_Reviewer
  - Password: LU_Reviewer2021
- Peter Claggett, USGS, and Rachel Soobitsky, Chesapeake Conservancy, will distribute the necessary information to the Workgroups for review as well.

Action: Rachel Soobitsky, Chesapeake Conservancy, will reach out to UVM to determine:

a) To what extent local comments from the 14 counties are being incorporated into Version 1 (if any) or if they are just doing their own QAQC with their own team for Version 1.
b) If any counties are scheduled for LC review in June.
c) If the "TBD" grey counties and their data will be ready in time to be incorporated into CC land use script.

Action: Peter Claggett, USGS, will provide an update on the characterization of Land Use change for the 14 counties as soon as the analysis is acquired. Jackie Pickford, CRC, will then send out a doodle poll to schedule a short interim meeting for updates, questions, and concerns, if necessary.

Action: Rachel Soobitsky, Chesapeake Conservancy, and Peter Claggett, USGS, will work together to publish the land cover change product on the Web Viewer.

Meeting Minutes

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

Decision: The LUWG approved of the February Meeting Minutes.

Update on Hyper-res Hydrography Production Schedule – David Saavedra, Chesapeake Conservancy

David provided an update and clarification on the production and review status of the high-resolution hydrography data and described the expected final products.

Update on High-resolution Land Cover and Land Use Production and Review – Jacob Czawlytko and Rachel Soobitsky, Chesapeake Conservancy

Jacob and Rachel shared that the 14 prototype counties for Land Use are complete and ready to be reviewed. Rachel provided an update on the Land Cover production schedule, the systematic errors that have been found and fixed, and the differentiation between data sets that will be included for CAST-21 versus what will be available for final download by December, 2021. Jacob and Rachel shared and discussed the counties that have been completed for high-resolution Land Use. Rachel discussed how the data are classified in the online viewer and how the viewer functions.

Important Clarifications: At the end of May, the Version 2 Land Cover 2013/14 (V2LC-13) and Version 1 Land Cover 2017/18 (V1LC-17) datasets will be complete. UVM has been doing an ongoing QAQC review process for these Land Cover datasets, both of which will be converted to Land Use and used determine the change in Land Use from 2013/14 to 2017/18 (V1 Δ LU13-17). The change in Land Use from 2013/14 to 2017/18 (V1 Δ LU13-17) is what will be incorporated into CAST21 and provided at the end of June. The localities will not be able to provide feedback on V1LU-17 before June, aside from the 14 prototype counties*. Input from the localities will instead be incorporated into Version 3 Land Cover and Land Use 2013/14 and Version 2 Land Cover and Land Use 2017/18, as well as the change product (V2 Δ LU13-17), all of which will be published in December 2021. Again, this will not be incorporated into CAST21. The product that will be incorporated into CAST21 is the Land Use Change product from 2013-2017, which will have been reviewed by UVM, the CBP workgroups, and 14 prototype counties by June.

Action: The LUWG is asked to conduct a review of the 14 prototype counties land use data set and be prepared to discuss any issues found and make a recommendation on land use methodology for the final data set for the next meeting on **Wednesday, May 5th, 2021**. Instructions for the review process are posted here.

- **Web Viewer**: https://tinyurl.com/DraftLandUse20172018
  - Username: LU_Reviewer
  - Password: LU_Reviewer2021

Action: Rachel Soobitsky, Chesapeake Conservancy, will reach out to UVM to determine the following:

a) To what extent local comments for the 14 counties are being incorporated into Version 1 (if any) or if they are just doing their own QAQC with their own team for Version 1.

a. **Update:** Their QAQC team performs 3 rounds of review for the June 2021 (V1) deliverable: 1) Review and edits of the roads, buildings, tree canopy, other impervious, and barren classes; 2) Review and incorporation of stakeholder comments; and 3) Review and editing of other obvious errors including water. Steps 2 and 3 are performed simultaneously. For most counties, Step 2 varies based on the number and complexity of issues identified. If a locality has only identified a few easily fixed errors, then all stakeholder comments are addressed for Version 1. If the comments are numerous and fine-scaled, only errors that will affect the land use modeling are addressed. We identified these errors with Peter and they are present in Rachel's presentations where we identified the V1 errors being fixed. For the counties that fall mostly or fully outside of the watershed, the workflow is limited to Step 3 for V1.

b) If any counties are scheduled for LC review in June.
   a. **Update:** UVM has since updated their schedule, and the plan is to have all counties' draft (and V1) data completed by May, so we have time to incorporate it into our LU scripts for the end of June deadline.

c) If the "TBD" grey counties and their data will be ready in time to be incorporated into CC land use script.
   a. Update: The current plan is for UVM to perform only a cursory review of the counties outside of the watershed prior to submitting them as June 2021 deliverables. UVM will review them more thoroughly during the subsequent phase of the project.

Land Use and Land Use Change Review – Peter Claggett, U.S. Geological Survey

Peter provided updates on high-res land use and land use change and discussed what will be incorporated into the Phase 6 model. He will be conducting a preliminary analysis on the 14 counties comparing the Ag Census, CAST, CLUs, and High-res Land Use, which will then be presented to the LUWG at a later date.

Action: Peter Claggett, USGS, will provide an update on the characterization of Land Use change for the 14 counties as soon as the analysis is acquired. Jackie Pickford, CRC, will then send out a doodle poll to schedule a short interim meeting for updates, questions, and concerns, if necessary.

Action: Rachel Soobitsky and Peter Claggett will work together to publish the land cover change product on the Web Viewer.

Wrap-up/Upcoming Meeting Schedule – KC Filippino, Hampton Roads Planning District Commission

Meeting Adjourned

Next conference call: May 5th, 2021 - Land Use Workgroup Meeting.

Participants

Jackie Pickford, CRC
KC Filippino, HRPDC
Peter Claggett, USGS
Karl Berger, MWCOG
Cassandra Davis, NY
Alana Hartman, WV DEP
Mindy Neil, WV DEP
Lori Brown, DE
Miriam Pomilio, DE
Shannon Mckendrick, MDE
Mark Symborski, MCPD
Norm Goulet, NVRC
Allie Wagner, NVRC
Mark Dubin, UMD
Rachel Soobitsky, CC
Patrick McCabe, CC
Jacob Czawlytko, CC
David Saavedra, CC
Olivia Devereux, Devereux Consulting
Ruth Cassilly, UMD
Rick Turcoutte, USFS
Lee Epstein, CBF
James Martin, VA DEQ
Sarah McDonald, USGS
Nicole Christ, MDD
Ariana
Ted Tesler, PA DEP
Lisa Beatty, PA DEP
Travis Stoe, PA DEP
Dave Montali, TetraTech
Sally Claggett, USFS

Meeting Chat

From Ted T to Everyone: 01:06 PM
Ted Tesler - PADEP
From Lisa Beatty to Everyone: 01:06 PM
Lisa Beatty from PA DEP
From Travis Stoe PADEP to Everyone: 01:06 PM
Travis Stoe PADEP
From Lisa Beatty to Everyone: 01:11 PM
Are the presentations going to be posted on the meeting page? I do not see them to prep for this meeting.
From Alana Hartman, WVDEP to Everyone: 01:12 PM
regarding #4, could you explain what does "forest" have to do with this process?
From Me to Everyone: 01:13 PM
Yes they will be posted to the Calendar page
From Rachel Soobitsky (she/her) to Everyone: 01:14 PM
Alana, the Random Forest classification is a type of Machine Learning algorithm, nothing to do with actual forests, although the name is misleading!
From Alana Hartman, WVDEP to Everyone: 01:14 PM
thanks Rachel!
From James Martin to Everyone: 01:18 PM
How is ditch to stream transition determined? looked like the ditch should have been extended in the example.
From dave montali to Everyone: 01:21 PM
same question as James - is it a "ditch" or a wet weather stream and how to find the transition point?
From Rachel Soobitsky (she/her) to Everyone: 01:22 PM
I believe David is covering those questions now!
From James Martin to Everyone: 01:28 PM
Could you differentiate the LIDAR Aquired from the LIDAR incomplete
From Olivia Devereux to Everyone: 01:31 PM
Are we awaiting the LiDar before we can move forward with having the land use?
From Jacob Czawlytko to Everyone: 01:32 PM
Olivia, we're moving forward with the land use and expect to integrate the results of Objective 2 into the version 2 land use where available.
From Mark Dubin to Everyone: 01:36 PM
The agricultural "ditch" being portrayed appears to me as an abandoned stream channel within the flood plain versus as an intentional drainage ditch. Can we determine a process for identifying managed agricultural ditches versus historic abandoned stream channels which remain in flood plains?
From sally claggett, usfs to Everyone: 01:39 PM
so roughly whats the smallest gully/rill that could be mapped?
From Rachel Soobitsky (she/her) to Everyone: 01:40 PM
we may need to hold off on some questions till later or folks can email David (dsaavedra@chesapeakeconservancy.org), Jacob and I have a lot to present as well
From sally claggett, usfs to Everyone: 01:40 PM

does it have to be "connected"?
From David Saavedra to Everyone: 01:50 PM
Sally, theoretically we can map features as small as a single pixel (1x1 meter). Gullies are usually larger than that, there is no real minimum size for them - they get mapped as they appear in DEM. They do not have to be connected to any stream or other feature, in fact they are usually disconnected from what we've observed.
Also, I was making edits to my presentation right up to the last minute, I plan to share the PPT with Jackie immediately following this meeting so she can add it to the LUWG calendar page so it's accessible to all. Apologies!
From Mark.Symborski to Everyone: 01:58 PM
David, you mentioned that the straight blue stream segment that connects to the larger stream was considered to be a stream because if it was a ditch, then the stream it connects to would also need to be classified as a ditch. But ditches very often connect to streams. So I don't understand why if a ditch connects to a stream, the stream must also be considered to be a ditch.
From Alana Hartman, WVDEP to Everyone: 01:59 PM
The gray ones shown for WV are out of the watershed or virtually so.
From David Saavedra to Everyone: 02:01 PM
Mark, if a stream and ditch are connected then the actual GIS feature is 1 "object" therefore it can only have 1 class. In order to separate them we would have to manually split the GIS features into separate "objects" which we simply don't have the capacity to do at this scale.
From Mark.Symborski to Everyone: 02:04 PM
But the straight blue stream segment is, in turn, connected to the ditch feature upgrade of it. So since the ditch feature connects to the straight stream segment, why is the straight stream segment not also considered to be a ditch?
From Olivia Devereux to Everyone: 02:07 PM
I have the same question as Mark. Ditches are designed to drain to streams, so they necessarily are connected. I understand that you don't have a system to separate the objects, but classifying isolated channels as "ditches" and connected channels as streams is incorrect. As Mark Dubin said, an isolated channel is likely an old stream channel or an erosion gully.
From David Saavedra to Everyone: 02:13 PM
Yes, the distinction is nuanced and I don't think it can be resolved in this chat. Is there a ditch workgroup or other avenue to talk about this? Just understand we are limited by the remotely sensed data available to us, mechanics of the GIS environment (1 feature can only have 1 class), and our need for a generic approach that we can apply over the whole Bay watershed.
Feel free to follow up by email: dsaavedra@chesapeakeconservancy.org
From KC Filippino to Everyone: 02:17 PM
There isn't a ditch workgroup that I'm aware of, but I think this topic can be explored at a future LUWG meeting. But we should probably wait to get through the June deadlines first. Maybe we can have this discussion later in the summer.
From Olivia Devereux to Everyone: 02:17 PM
@KC: agreed.
From Jacob Czawlytko to Everyone: 02:17 PM

There's enough interest in ditches that there probably should be!
From Mark.Symborski to Everyone: 02:19 PM
Also, although ephemeral streams are "streams" in a hydrologic sense, they are typically not regulated at the local level as perennial and intermittent streams are because they do not support aquatic life. So the ephemeral-non ephemeral stream distinction is important. Although some ditches are being excluded in this procedure, I would expect that many streams that would be classified in the field as ephemeral are being included. As a result, I think the product of this exercise should bear the caveat that the blue stream network will contain ephemeral streams, and if anyone needs to know what streams in the network are ephemeral as opposed to perennial or intermittent, field data will likely be needed.
From David Saavedra to Everyone: 02:22 PM
Mark, agree 100%! It's a very important distinction. Like I said, we have developed a proof of concept for approximating flow permanence using StreamStats data, we just don't have the necessary StreamStats data available everywhere. We are hoping to work with StreamStats to get this data produced so we can develop this further and hopefully include as an attribute.
From Norm Goulet to Everyone: 02:37 PM
Is CAST-23 going to be Phase 7 WSM
From Olivia Devereux to Everyone: 02:38 PM
@Norm: no, that would likely be CAST-25, but a decision about CAST-25 has not yet been made. It is definitely not CAST-23.
From Lori Brown to Everyone: 02:45 PM
State for Sussex needs to be changed to DE
In the Mapped Changes summary table
From Karl Berger to Everyone: 02:57 PM
These counties In Peter’s slides are full counties, not CBWS portion only.
From James Martin to Everyone: 03:17 PM
Olivia - where is the documentation you referenced
From Olivia Devereux to Everyone: 03:19 PM
@James-Section 5 located here. https://cast.chesapeakebay.net/Documentation/ModelDocumentation
It is labeled DRAFT Land Use under the Phase 6 Dynamic WSM and CAST-17 documentation.
From James Martin to Everyone: 03:19 PM
that describes the process for incorporating the 2013-2017 change product
From Olivia Devereux to Everyone: 03:24 PM
The way we did it for CAST-17. We will write documentation for the way we do it for CAST-19.
The method for incorporating into CAST shouldn't change, just the methods associated with developing the mapped land use.
From Jacob Czawlytko to Everyone: 03:34 PM
Thanks everyone! Bye