Joint Land Use and Forestry Workgroup Meeting Minutes
December 2, 2020
9am-12pm

This meeting will be recorded for internal use to assure the accuracy of meeting notes

---

Summary of Actions & Decisions:

- **ACTION:** If you would like to be included in the data review process discussed by Rachel Soobitsky, please reach out to her with your contact information at rsoobitsky@chesapeakeconservancy.org.
- **DECISION (pending additional comments):** The Forestry Workgroup accept the proposal to map a single forest class after accounting for "Tree Canopy over Impervious Surfaces" and "Tree Canopy over Turf Grass". The LUWG will entertain additional comments on this decision through the end of December. The three options presented at the meeting were: 1) a single "Forest" or "Tree Canopy" class; 2) "Contiguous Forest" and "Fragmented Forest"; or 3) "Interior Forest" and "Edge Forest". Please review the pros and cons listed in Jacob's presentation posted on the meeting website described below in these meeting minutes.
- **ACTION:** The Forestry Workgroup, Habitat GIT, and LUWG will work together over the coming year to further explore the development of forest fragmentation metrics to inform various CBP outcomes and management needs.
- **ACTION:** The Chesapeake Conservancy and USGS will draft a whitepaper describing the proposed "Tree Canopy over Turf Grass", "Forest", "Timber Harvest", and "Natural Succession" classification rules for review by the Forestry and Land Use Workgroups.
- **ACTION:** If you want to change the way timber harvest is rolled up in the 13 classification reach out to Peter Claggett (pclagget@chesapeakebay.net) and KC Filipino (kfilippino@hrpdcva.gov) by the end of December. Roll-up decisions will be the focus of the January LUWG meeting. The current proposed classification can be found here.
- **DECISION (pending additional comments):** The Land Use and Forestry Workgroups decided to not put a cap on duration (years) of natural succession and they agreed that clearings mapped as timber harvests should be classed as natural succession after three years if tree canopy are not yet discernable in the NAIP and LiDAR imagery. Mapped clearings for timber harvest and natural succession will roll up to mixed open in the Phase 6 model and will only be classed as forest when the land is mapped as tree canopy.

Welcome and Introductions

Rebecca Hanmer, KC Filippino

- Peter Claggett emphasized the purpose of the meeting is to discuss how to remap and reclassify tree canopy related land uses and to show the difference

in mapping classifications for 2013 vs. 2017 (short presentation). The previous 16 classes used in 2013 are being remapped to 61 classes.

2017 Land Cover Updates and Tree Canopy Communication Products

Rachel Soobitsky, Chesapeake Conservancy

- **Summary:** Rachel Soobitsky reviewed the land cover production schedule for each locality. To incorporate all of the review comments and edits from localities the Chesapeake Conservancy is creating two versions of the land cover and land use data. The initial version will be used internally for CAST-21 in the summer of 2021 and the final, public version, will be released in December 2021. The Chesapeake Conservancy is also working with the USFS and the CBPO to create a Tree Canopy Communication Product capturing tree canopy change metrics for each locality in the Bay.

ACTION: If you would like to be included in the data review process discussed by Rachel Soobitsky, please reach out to her with your contact information at rsoobitsky@chesapeakeconservancy.org.

Mapping Wooded Land Uses - Jacob Czawlytko

- Trees over Turf Grass – Jacob Czawlytko
  - Formerly wooded landscapes
  - Formerly agricultural landscapes

Decision Requested: Does this mapping approach for Trees over Turf Grass make sense? What parcel size thresholds and buffer width thresholds (of impervious surfaces) should be used to map Trees over Turf Grass.

ACTION: A whitepaper will be created to summarize all of the issues raised, topics to consider, and the decision requested in greater detail in addition to what topics need further research before making the decision.

Summary:

- Tree Canopy within 30 feet of structures is classed as “tree canopy over turf grass” as are tree canopy patches <= 1 acre and adjacent to turf grass. This classification excludes small patches of tree canopy adjacent to agricultural fields.
- The thirty-foot buffer was chosen because lands surrounding a structure are likely to be managed (mowed, compacted, etc.) and impacted by the structure (shade, run-off, etc). The original assumption for doing this in 2016 was that when people build a structure in woods, there is still land that would be compacted and altered in order to build the structure. How much land is compacted has not been ground-truthed yet.

- Concerns were raised about underestimating forests and over-estimating tree canopy over turf grass. However, the new methods will include more forest than those used originally with the 2013/2014 imagery.
- It would be helpful to have water quality or hydrologic examples of areas that function like forest and areas that do not to account for the difference in loading rate between the various land uses. This is the biggest outstanding issue with the forest class because it has water quality ramifications. Following the flow-path so that when it does get to forest patches in urban areas that it can function as a forest but there are some urban forests that are hydrologically important and there is a ton of potential to further improve the function as we think about how we plant trees and it would be great to have the incentive in the land use to have people get credit for it if we do.

Mapping Forest Land Uses – Jacob Czawlytko

- Single-class "Forest" (default) – Jacob Czawlytko
- Contiguous vs Fragmented Forest – Jacob Czawlytko
- Interior vs Edge Forest – Peter Claggett

Decision Requested: Should we differentiate more than one type of forest in our land use dataset? If so, what and why? If not, additional analysis will still be done to understand and track forest fragmentation trends.

- **DECISION:** The Forestry Workgroup decided that there will be only one type of forest differentiated in the land use dataset for now.
- **ACTION:** The Forestry Workgroup and other workgroups will work together collaboratively to identify what could be done with the additional mapping forest land uses in the February timeframe.

Summary:

- Options for forest methods include single-class forest (default), contiguous vs. fragmented, and interior vs. edge. Single Class "Forest" is the simplest method and leaves decisions as to what is a "forest" up to the end user. Contiguous vs. fragmented is meant to isolate patches >= 1 acre from those < 1 acre after accounting for tree canopy over turf grass. Interior vs. edge shrinks the canopy by 200 feet to distinguish edge from interior forest. There are no implications to water quality loading associated with either method.

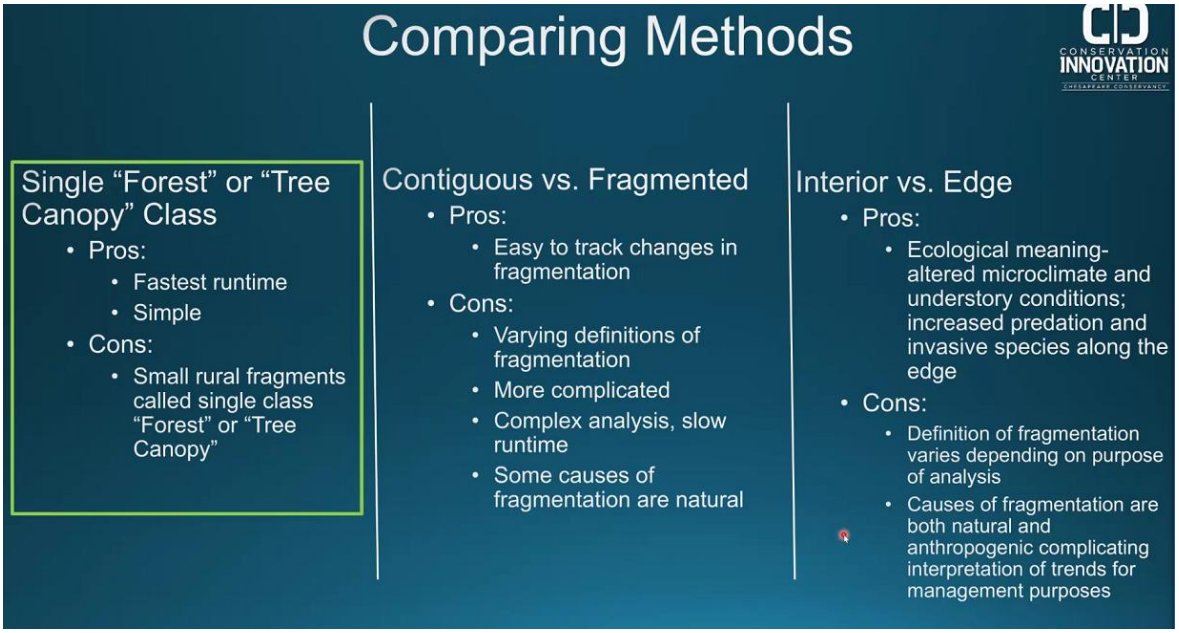

Figure 1. Pros and Cons for Mapping Forest Land Uses Methodology

- The Chesapeake Conservancy and members of the FWG and LUWG are leaning towards the simplest methodology (Single Forest or Tree Canopy Class) in efforts to produce something in a timely way to fill current data gaps. However, members are encouraged to mull over the decision. There is debate over the language that should be used for a single class- whether to call it "tree canopy" or "forest". Keeping the term "forest" would eliminate potential communication issues associated with calling all potential forest "tree canopy".

DECISION: Land Use Workgroup and Forestry Workgroup members and interested parties are requested to review the three classification methods of single "forest" or "tree canopy" class, contiguous vs. fragmented, and interior vs. edge. Please review the pros and cons listed in Jacob's presentation and found above in the meeting minutes.

Timber Harvest (recent clearings) – Sarah McDonald

Decision Requested: Does this mapping approach for recent clearings make sense? What is the minimum size parcel or area that is likely to be cleared? Should we use these data to replace reported percentages of forests assumed to be harvested for the 2013 and 2017 target years? These data could be better timber harvest data than what some states currently have, and their use in CAST could be helpful in discerning water quality issues.

Summary:

- Sarah McDonald summarized her method for classifying patterns. Patterns are grouped into primary and secondary categories. The Timber Harvest class shows that there is some sort of historic forest rotation between grassy shrub-barren-and forest over 33 years. Succession Age is another derived product that tracks the number of consecutive years a pixel has grassy shrub or crop land cover. The last dataset of image segments from the University of Vermont shows the

vector image segments from the 1-meter landcover for 2017 that includes low vegetation, barren, scrub/shrub, and tree canopy.

- The analysis was done in MD and limited to where image segments were available. The group is asked to consider if there should be a minimum area threshold for timber harvest clearings. Understanding timber harvest can support the equation by allowing to distinguish between harvest vs. construction.

ACTION: The decision on the threshold for timber harvest clearings will be written out for further consideration in a white paper.

ACTION: If you would like to change the way timber harvest is rolled up in the 13 classification reach out to Peter Claggett (pclagget@chesapeakebay.net) and KC Filipino (kfilippino@hrpdcva.gov) by the end of December. The current proposed classification can be found here.

Natural Succession – Sarah McDonald (smcdonald@cheseakebay.net)

Decision Requested: Does this mapping approach for natural succession make sense?

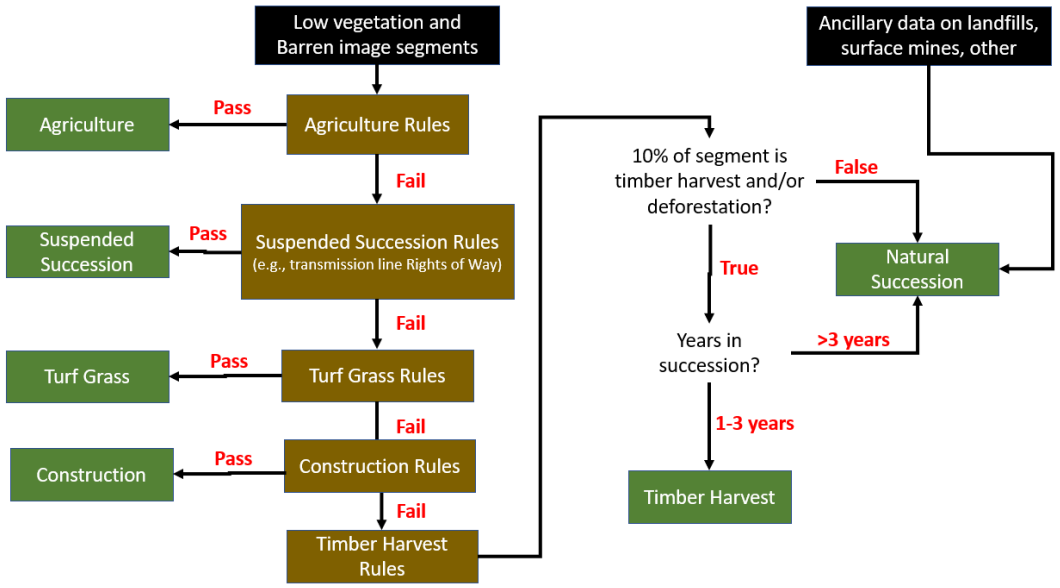

Figure 2. Sarah McDonald's Mapping Workplan for Natural Succession

Summary:

- Natural succession is in the end of the classification workflow that can be seen above. Mined areas can take decades to become a forest through natural succession but in a lot of cases there is not a lot of difference between natural succession and a planted forest. This could be a good option for people going forward if they can manage for other things. This is a very complicated decision. This is not about loss but instead mapping areas that might have a future gain. The point is to talk about the places that have the potential to regrow as forest and potentially map early successional forests.

DECISION (pending review): The Land Use and Forestry Workgroups decided to not put a cap on the natural succession, that greater than three years is an appropriate approach to consider mapping natural succession, and to keep the roll-up the way it is.

Verifying presence/absence of tree plantings

Iris Allen, MD-DNR; Jeff Sweeney, EPA

Summary:

- Recently, Iris has been looking at aerial imagery of riparian buffers with known planting date and other information to decipher when and how they appear. This information will inform when land conversion credits for tree and riparian buffer plantings should be "backed-out" of CAST. Jeff Sweeney reviewed the backout procedures within the CAST model that shows when saplings are planted, they receive full model benefits the year they are reported in order to estimate steady-state long-term changes.
- The Bay Program wants to better understand when trees that are newly-established will be picked-up in the high resolution imagery. Evidence points to the 10-year time-frame currently used by the Bay Program. Iris will look at a larger sample size to see if there is stronger evidence for a specified time-frame.

Inventorying riparian buffer restoration opportunities with high-resolution streams and land use

Peter Claggett, USGS; Matt Keefer, PA-DCNR

Summary:

- The new high-resolution stream and land use data will improve our understanding of BMP opportunities. There will be more stream miles in the high-res data compared to previous datasets but most will be representative of intermittent and ephemeral streams. If restoration plans are based on some percentage of bufferable stream miles, these new data will directly impact those statistics and plans. The FWG/LUWG are asked to begin considering these issues now so that we can better understand, communicate, and attribute the data.