



State of Chesapeake Forests 2.0 - Plantable Areas Analysis

8 October 2025
Forestry Workgroup Meeting



Chesapeake
Conservancy



Conservation
Innovation Center

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Presentation Outline

- Intro & Methods Overview
- Examples of plantable area outputs
- Data usage caveats / known issues
- Online data viewer
- Discussion: public rollout & communications strategy



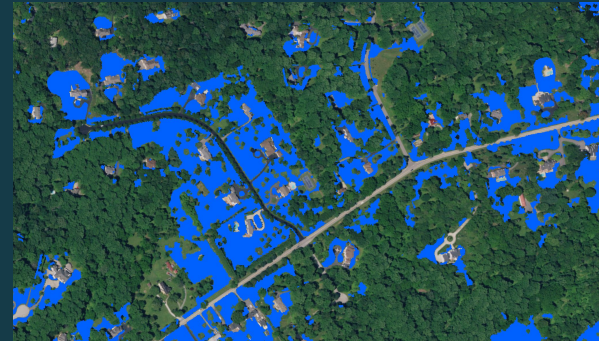
Plantable Area Analysis - Methods



- Objective: Identify potential opportunities for tree planting in the Chesapeake Watershed
 - Opportunities identified using LULC data
 - LULC classes divided into multiple tiers of "plantability": Tier 1 (primary plantable areas) & Tier 2 (secondary plantable areas)
- Exclusion areas:
 - Prime agricultural lands classified as agricultural land use
 - Airports
 - Sensitive non-treed habitats (data availability limited)
 - Cemeteries
 - Sports fields



MFTS Plantable Area Analysis (1m)



USFS Tier 1 Plantable Areas (1 m)

Chesapeake Bay Land Use/Cover Classification (2024 edition, 56 classes)

Water

10 Tidal Waters

Lentic

11 Lakes & Reservoirs

12 Riverine Ponds

13 Terrene Ponds

Lotic

14 Streams and Rivers

Developed

Impervious

20 Roads

21 Structures

22 Other Impervious (Parking lots, driveways)

23 TC over Roads

24 TC over Structures

25 TC over Other Impervious

31 Extractive Impervious

32 Solar Field Panel Arrays (impervious)

Pervious

26 Tree Canopy over Turf Grass

27 Turf Grass

28 Bare Developed

30 Extractive Barren

33 Solar Field Barren

34 Solar Field Herbaceous

35 Solar Field Shrubland

36 Suspended Succession Barren**

37 Suspended Succession Herbaceous**

38 Suspended Succession Shrubland

Natural

Forest

40 Forest

54 Riverine Wetlands Forest

64 Terrene Wetlands Forest

74 Tidal Wetlands Forest

Forested Other (formerly Tree Canopy)

41 Forested Other

53 Riverine Wetlands Forested Other

63 Terrene Wetlands Forested Other

73 Tidal Wetlands Forested Other

Natural Succession

15 Bare Shore

42 Natural Succession Barren

43 Natural Succession Herbaceous

44 Natural Succession Shrubland

Harvested Forest

45 Harvested Forest Barren

46 Harvested Forest Herbaceous

55 Riverine Wetlands Harvested Forest

65 Terrene Wetlands Harvested Forest

75 Tidal Wetlands Harvested Forest

Riverine Wetlands

50 Riverine Wetlands Barren

51 Riverine Wetlands Herbaceous

52 Riverine Wetlands Shrubland

Terrene Wetlands

60 Terrene Wetlands Barren

61 Terrene Wetlands Herbaceous

62 Terrene Wetlands Shrubland

Tidal Wetlands

70 Tidal Wetlands Barren

71 Tidal Wetlands Herbaceous

72 Tidal Wetlands Shrubland

Agriculture

Cropland

80 Cropland Barren*

81 Cropland Herbaceous*

82 Orchards and Vineyards Barren

83 Orchards and Vineyards Herbaceous

84 Orchards and Vineyards Shrubland

Pasture and Hay

85 Pasture and Hay Barren*

86 Pasture and Hay Herbaceous*

Tier 1: lowest hanging fruit

Tier 2: additional due diligence required to evaluate as a viable planting opportunity

*Exclude prime agricultural lands from agriculture plantable areas

**Only include minelands from suspended succession classes

Caveat: Any project sites should be field-checked before implementation



Plantable Areas

- All methods informed by U.S. Forest Service and Forestry Workgroup
- Identify Tier 1 and Tier 2 Plantable Areas
- Tier 1 Plantable Areas are areas of:
 - Turf grass
 - Natural succession barren and natural succession herbaceous
 - Excluding cemeteries, sports fields, golf courses, airports, special exclusion datasets and/or Ecological Significant Areas
- Tier 2 Plantable Areas are areas of:
 - Suspended succession barren and suspended succession herbaceous on minelands
 - Cropland barren, cropland herbaceous, pasture and hay barren, pasture and hay herbaceous that excludes prime agricultural lands
 - Riverine wetlands barren, riverine wetlands herbaceous, terrene wetlands barren, terrene wetlands herbaceous

Plantable Areas

- LULC
- Parcels (when available- used for foursquare data, OMF data, and runways data. Available for 179 of the 205 counties)
- Foursquare Data (used to identify sports fields, golf courses and cemeteries)
- Overture Map Foundation data (used to identify sports fields, golf courses and cemeteries)
- Runways (FAA dataset used in EPA Objective 1)
- Ecologically Significant Areas (MD DNR dataset)
- Special Exclusion datasets (provided from 4 counties which included sports fields, cemeteries and other features)
- Mines dataset (Created for EPA Objective 1)
- Not prime farmland soils (SSURGO)
- Used above datasets when available to create a series of masks that were combined to create Tier 1 and Tier 2 Plantable Areas



Tier 1 Plantable Areas

Anne Arundel
County



Tier 1 Plantable Areas

Anne Arundel
County



Tier 1 Plantable Areas

Anne Arundel
County



Tier 1 Plantable Areas

Anne Arundel
County



Tier 1 Plantable Areas

Anne Arundel
County



Tier 1 Plantable Areas

Anne Arundel
County





Tier 2 Plantable Areas

Baltimore
County

USFS Plantable Areas

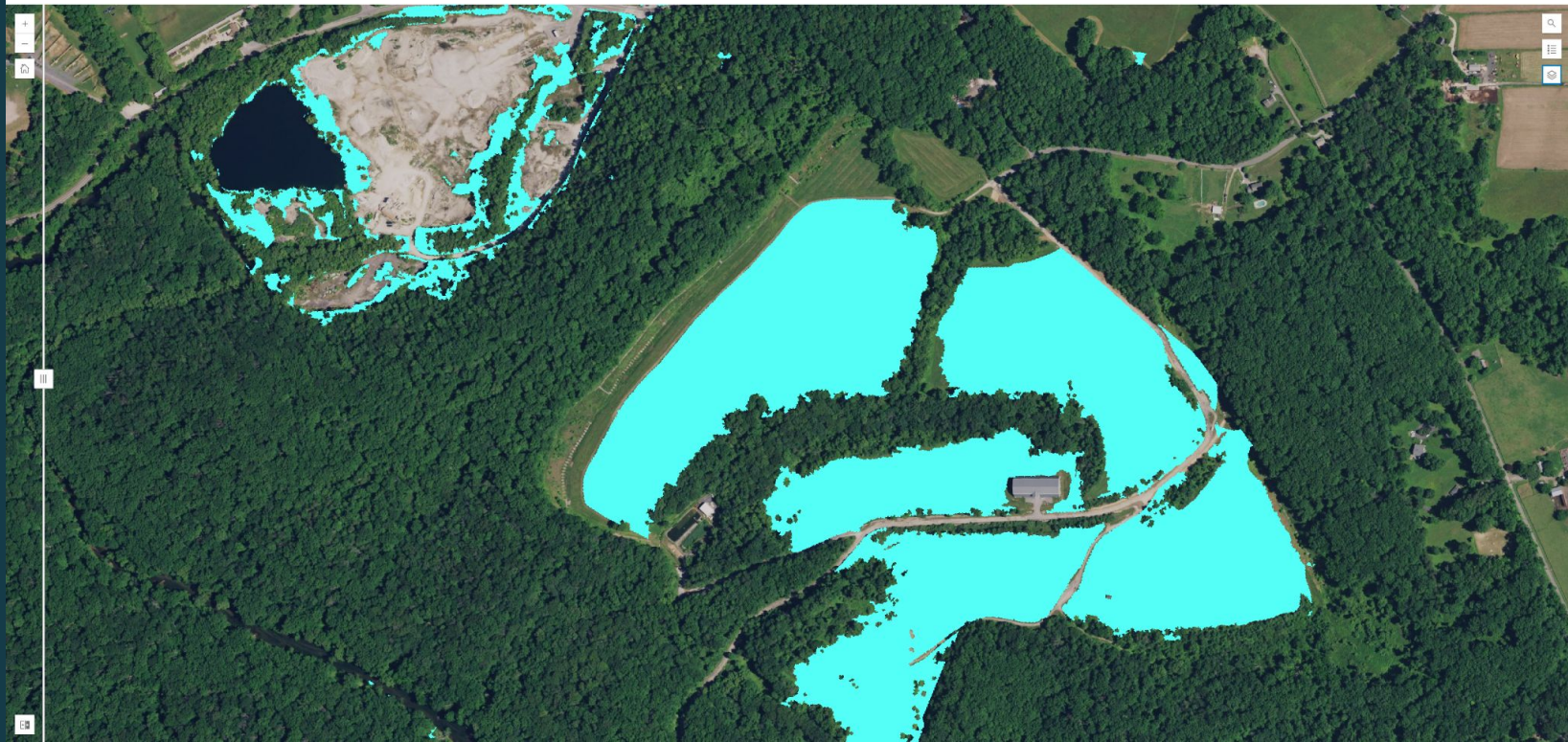




Tier 2 Plantable Areas

Baltimore
County

USFS Plantable Areas



Plantable Areas Caveats/Known Issues

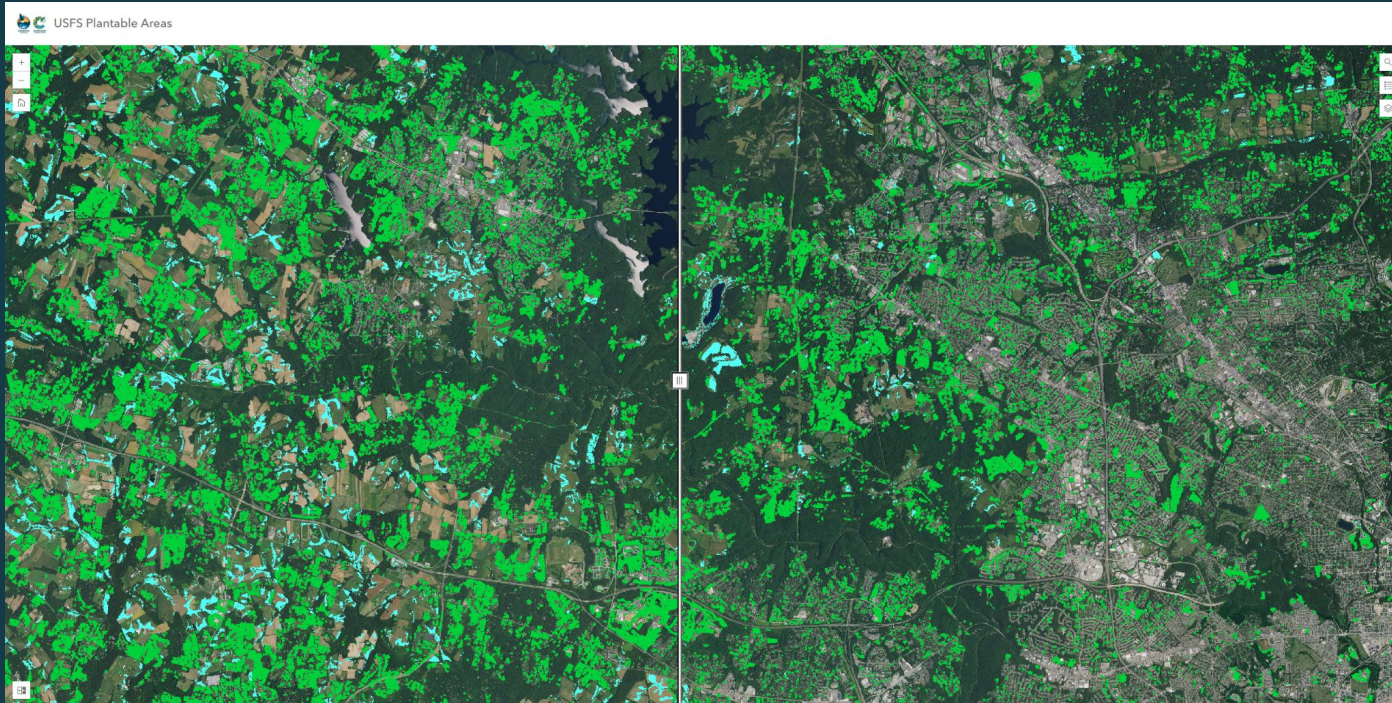


- Caveat: Any project sites should be field-checked before implementation
- 9 Meter Minimum Mapping Unit (pending)
- Natural Succession Forest Gaps (pending)
- LULC errors (low vegetation classes misclassified), LULC will eventually be included in the app for viewing
- Places without parcels cannot implement Foursquare, Overture Map Foundation and Runway methods (26 counties)
- Parcel boundary issues
- Data availability of Foursquare, Overture Map Foundation
- Limitations of publicly available exclusion datasets (welcome any datasets you have on hand!)
- Schools were kept due to partnership potential and frequent unused turf grass areas on properties but sports fields on those properties may appear in analysis

USFS Plantable Areas App



- <https://chescon.maps.arcgis.com/apps/instant/basic/index.html?appid=140350f44756491dbb3454d471d5ffe9>





Discussion

- Public rollout
- Communications strategy
 - Integration into updated State of Chesapeake Forests 2.0 storymap
- Suggested use cases

