

1-meter Resolution Land Use and Change for the Chesapeake Bay Watershed

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Land Cover vs Land Use/Land Cover (LULC)



LandCover	
Blue	Water
Teal	Emergent Wetlands
Dark Green	Tree Canopy
Light Green	Scrub/Shrub
Yellow-Green	Low Vegetation
Orange	Barren
Red	Impervious Structures
Grey	Other Impervious
Black	Impervious Roads
Dark Olive	Tree Canopy over Impervious Structures
Light Olive	Tree Canopy over Other Impervious
Yellow	Tree Canopy over Impervious Roads
Purple	Aberdeen Proving Ground

GenLandUse	
Blue	Water
Black	Impervious Roads
Red	Impervious Structures
Dark Grey	Impervious, Other
Light Grey	Tree Canopy over Impervious
Yellow	Turf Grass
Light Yellow	Pervious Developed, Other
Dark Olive	Tree Canopy over Turf Grass
Dark Green	Forest
Light Green	Tree Canopy, Other
Brown	Harvested Forest
Light Green	Natural Succession
Orange	Cropland
Light Orange	Pasture/Hay
Purple	Extractive
Teal	Wetlands, Tidal Non-forested
Green	Wetlands, Riverine Non-forested
Light Green	Wetlands, Terrene Non-forested

- Land Cover describes the physical features of the ground (low vegetation, water, etc.)
 - What is seen from above using satellite imagery
 - 12 Land Cover (LC) classes mapped by the University of Vermont's Spatial Analysis Lab
- Land Use describes how people use and manage the land (agriculture, timber harvest, etc.)
 - What is seen from the ground
 - 54 LULC classes mapped by Chesapeake Conservancy Conservation Innovation Center (CIC)
- Land Use/Land Cover is Land Use with Land Cover classes preserved
 - Land Cover – Herbaceous
 - Land Use – Cropland
 - Land Use/Land Cover – Cropland Herbaceous

CBP Land Use/Cover Classification (62 planned for 2021/22, 54 classes mapped for 2017/18)

1. Water (11)

1.1 Estuarine / Marine

1.2 Lentic (fresh)

1.2.1. Lakes and reservoirs

1.2.2 Riverine ponds

1.2.3 Terrene ponds

1.3 Lotic (fresh)

1.3.1 Channels

1.3.1.1 Open Channel

1.3.1.2 Tree Canopy over Channel

1.3.1.3 Culverted

1.3.2. Ditches

1.3.2.1 Open Ditch

1.3.2.2 Tree Canopy over Ditch

1.3.2.3 Culverted

2. Developed (12)

2.1 Impervious

2.1.1 Roads

2.1.2 Structures

2.1.3 Other Impervious

2.1.4 Tree Canopy (TC) over Impervious

2.1.4.1 TC over Roads

2.1.4.2 TC over Structures

2.1.4.3 TC over Other Impervious

2.2 Pervious

2.2.1 Turf Grass

2.2.2 Transitional- barren

2.2.3 Suspended Succession

2.2.3.1 Barren

2.2.3.2 Herbaceous

2.2.3.3 Scrub-shrub

2.2.4 Tree Canopy over Turf Grass

3. Forested (7)

3.1 Forest (≥ 1 acre, 240-ft width)

3.2 Other Tree Canopy

3.3 Harvested Forest (≤ 3 years)

3.3.1 Barren

3.3.2 Herbaceous

3.4 Natural Succession (> 3 years)

3.4.1 Barren

3.4.2 Herbaceous

3.4.3 Scrub-shrub

4. Production (17)

4.1 Agriculture

4.1.1 Cropland

4.1.1.1 Barren

4.1.1.2 Herbaceous

4.1.2 Pasture/Hay

4.1.2.1 Barren

4.1.2.2 Herbaceous

4.1.2.3 Scrub-shrub

4.1.3 Orchard/vineyard

4.1.3.1 Barren

4.1.3.2 Herbaceous

4.1.3.3 Scrub-shrub

4.1.4 Animal Operations

4.1.4.1 Impervious

4.1.4.2 Barren

4.1.4.3 Herbaceous

4.2 Solar fields

4.2.1 Impervious

4.2.2 Pervious

4.2.2.1 Barren

4.2.2.2 Herbaceous

4.2.2.3 Scrub-shrub

4.3 Extractive (active mines)

4.3.1 Barren

4.3.2 Impervious

5. Wetlands and Water Margins (16)

5.1 Tidal

5.1.1 Barren

5.1.2 Herbaceous

5.1.3 Scrub-shrub

5.1.4 Other Tree Canopy

5.1.5 Forest

5.2 Riverine (Non-tidal)

5.2.1. Barren

5.2.2 Herbaceous

5.2.3 Scrub-shrub

5.2.4 Other Tree Canopy

5.2.5 Forest

5.3 Terrene/Isolated (Non-tidal)

5.3.1 Barren

5.3.2 Herbaceous

5.3.3 Scrub-shrub

5.3.4 Other Tree Canopy

5.3.5 Forest

5.4 Bare shore

Note: Yellow and blue classes mapped for 2017/18. Grey classes will be added to all years with the production of the 2021/22 LULC.

CBP Land Use/Cover General Classification (used for visualization)

1. Impervious, Roads

- 2.1 Impervious
 - 2.1.1 Roads

2. Impervious, Structures

- 2.1 Impervious
 - 2.1.2 Structures

3. Impervious, Other

- 2.1 Impervious
 - 2.1.3 Other Impervious
- 4.2 Solar fields
 - 4.2.1 Impervious

4. Tree Canopy Over Impervious

- 2.1 Impervious
 - 2.1.4 Tree Canopy over Impervious

5. Turf Grass

- 2.2 Pervious, Developed
 - 2.2.1 Turf Grass

6. Tree Canopy over Turf Grass

- 2.2 Pervious, Developed
 - 2.2.4 Tree Canopy over Turf Grass

7. Pervious Developed, Other

- 2.2 Pervious, Developed
 - 2.2.2 Transitional- barren
 - 2.2.3 Suspended Succession

- 4.2 Solar fields
 - 4.2.2 Pervious

8. Forest (all)

- 3.1 Forest (non-wetland)
 - 5.1 Tidal
 - 5.1.5 Forest (≥ 1 acre, 240-ft width)
- 5.2 Riverine (Non-tidal)
 - 5.2.5 Forest (≥ 1 acre, 240-ft width)
- 5.3 Terrene/Isolated (Non-tidal)
 - 5.3.5 Forest (≥ 1 acre, 240-ft width)

9. Tree Canopy, Other

- 3.2 Other Tree Canopy
 - 5.1 Tidal
 - 5.1.4 Other Tree Canopy
- 5.2 Riverine (Non-tidal)
 - 5.2.4 Other Tree Canopy
- 5.3 Terrene/Isolated (Non-tidal)
 - 5.3.4 Other Tree Canopy

10. Harvested Forest

- 3.3 Harvested Forest (≤ 3 years)

11. Natural Succession

- 3.4 Natural Succession (> 3 years)
- 5.4 Bare shore, Water Margins

12. Wetlands, Tidal non-forested

- 5.1 Tidal Wetlands
 - 5.1.1 Barren
 - 5.1.2 Herbaceous
 - 5.1.3 Scrub-shrub

13. Wetlands, Riverine Non-forested

- 5.2 Riverine Wetlands (Non-tidal)
 - 5.1.1 Barren
 - 5.1.2 Herbaceous
 - 5.1.3 Scrub-shrub

14. Wetlands, Terrene Non-forested

- 5.3 Terrene/Isolated Wetlands (Non-tidal)
 - 5.1.1 Barren
 - 5.1.2 Herbaceous
 - 5.1.3 Scrub-shrub

15. Extractive

- 4.3 Extractive (active mines)
 - 4.3.1 Barren
 - 4.3.2 Impervious

16. Cropland

- 4.1 Agriculture
 - 4.1.1 Cropland
 - 4.1.3 Orchard/vineyard

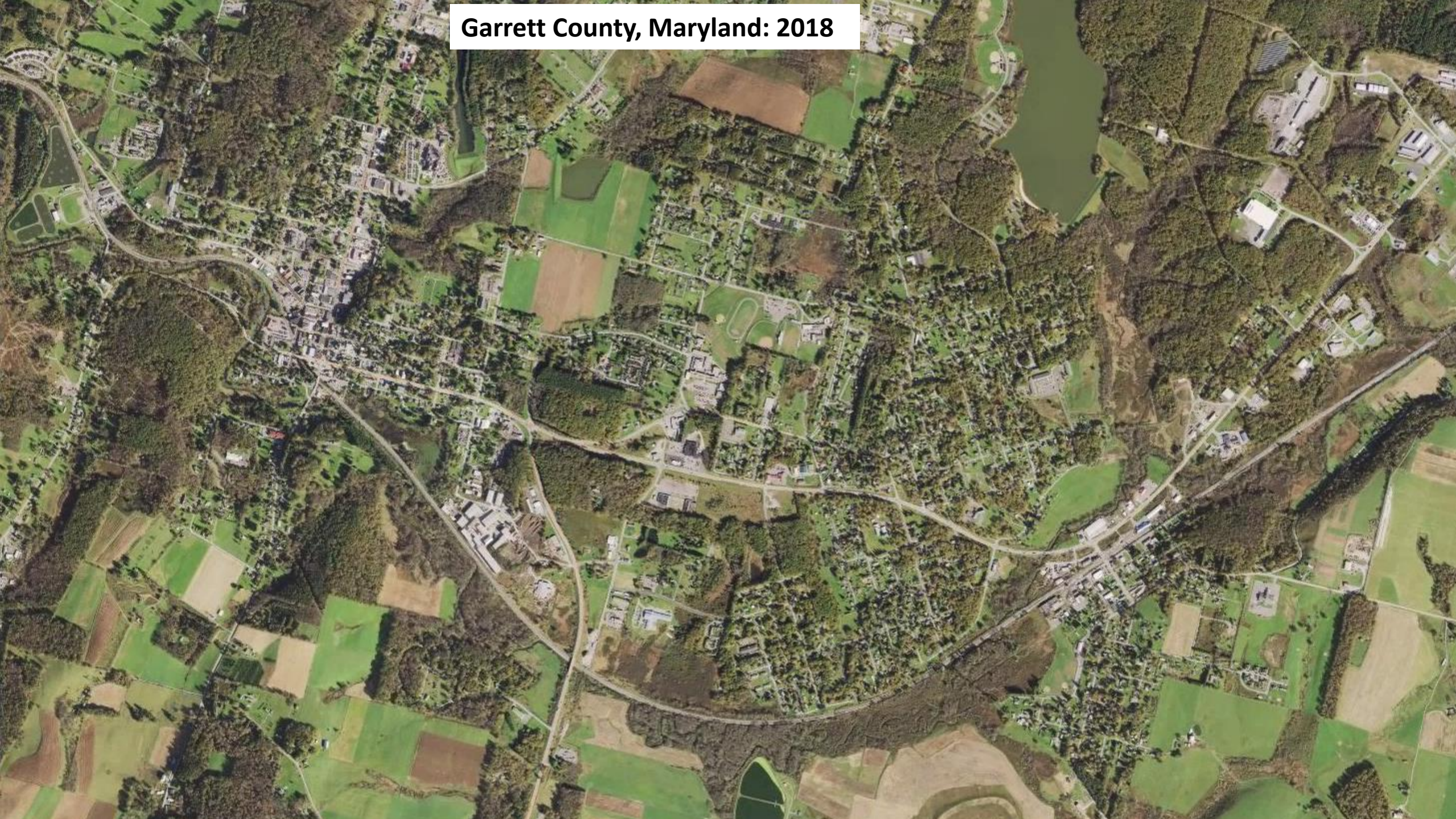
17. Pasture/Hay

- 4.1 Agriculture
 - 4.1.2 Pasture/Hay

18. Water

- 1.1 Estuarine/ Marine
- 1.2 Lentic
- 1.3 Lotic

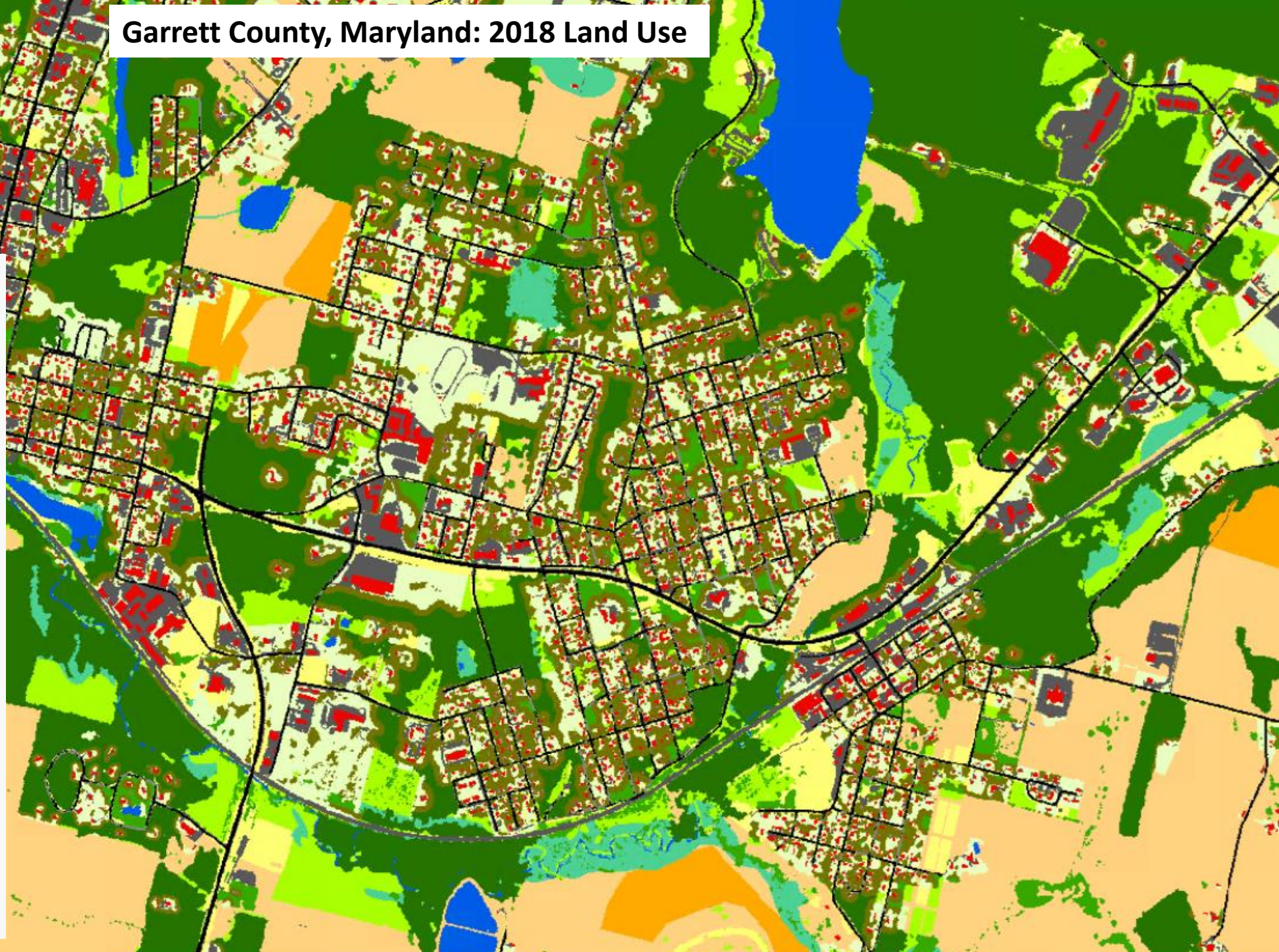
Garrett County, Maryland: 2018



Garrett County, Maryland: 2018 Land Use

GenLandUse

- Water
- Impervious Roads
- Impervious Structures
- Impervious, Other
- Tree Canopy over Impervious
- Turf Grass
- Pervious Developed, Other
- Tree Canopy over Turf Grass
- Forest
- Tree Canopy, Other
- Harvested Forest
- Natural Succession
- Cropland
- Pasture/Hay
- Extractive
- Wetlands, Tidal Non-forested
- Wetlands, Riverine Non-forested
- Wetlands, Terrene Non-forested



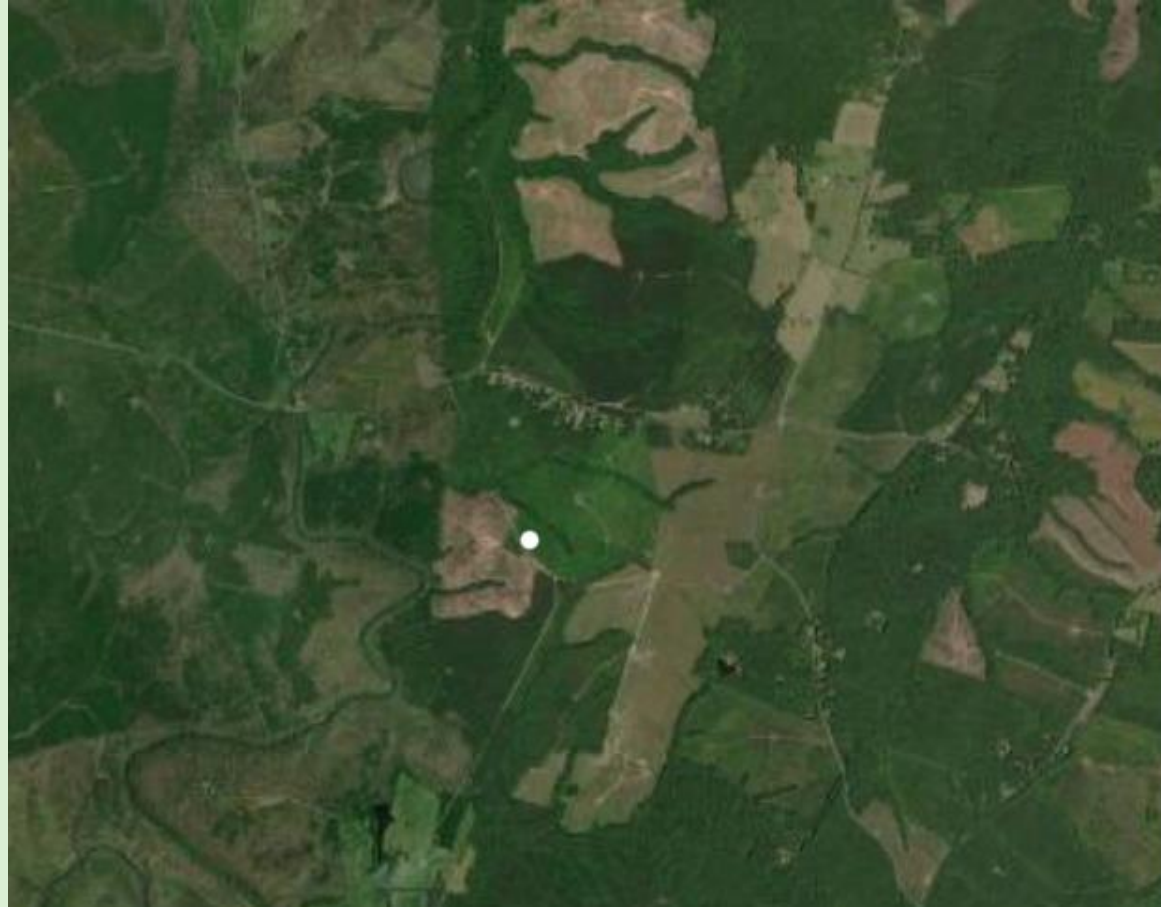
What is Land Use/Land Cover (LULC) Change?

- Land Cover Change represents transitions between the 12 mapped Land Cover classes (Tree Canopy to Low Vegetation, Low Vegetation to Structures, etc.)
 - The University of Vermont's Spatial Analysis Lab mapped 80 land cover transitions across the watershed
- Land Use/Land Cover (LULC) Change represents transitions between the 54 mapped LULC classes (Forest to Harvested Forest, Cropland to Structures, etc.)
 - The U.S. Geological Survey mapped 974 LULC transitions across the watershed

Buckingham, Virginia

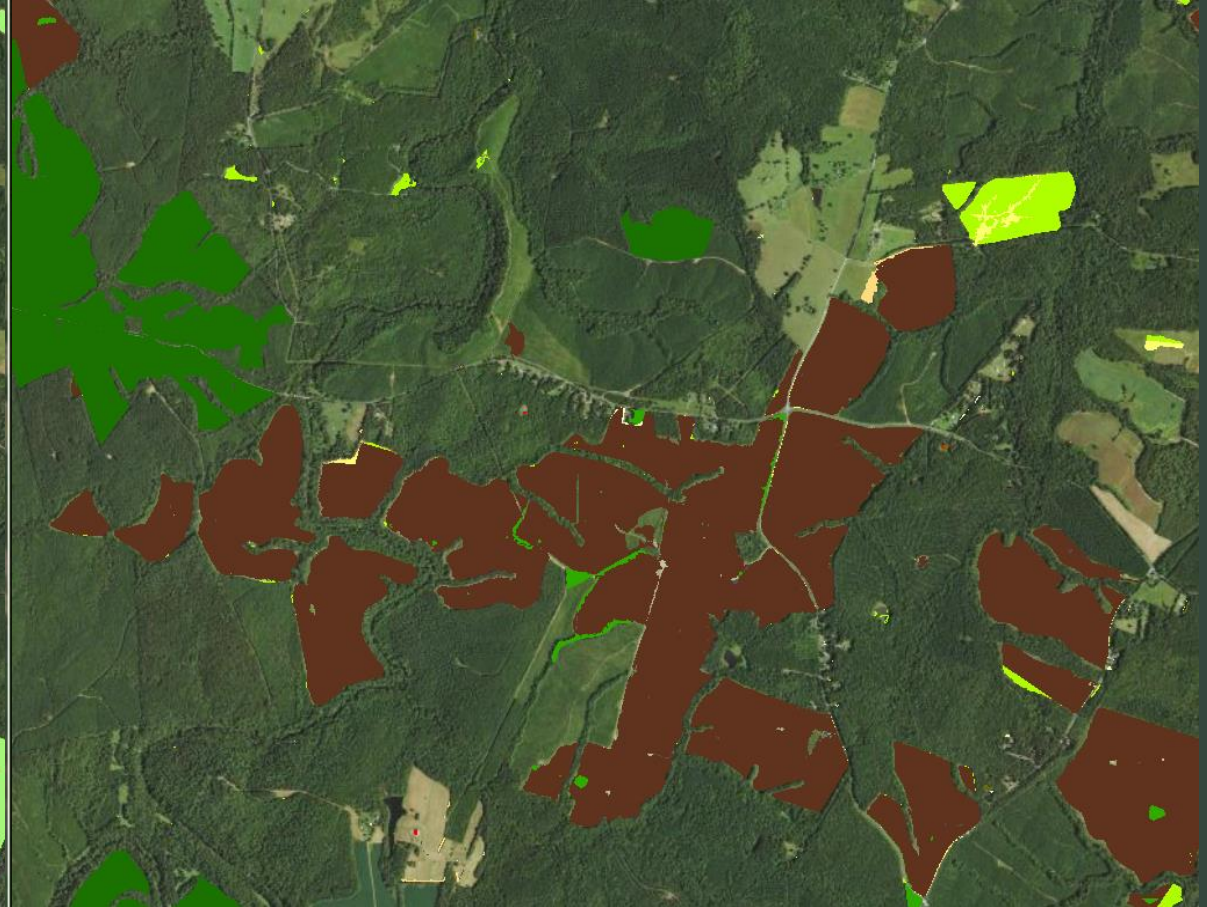
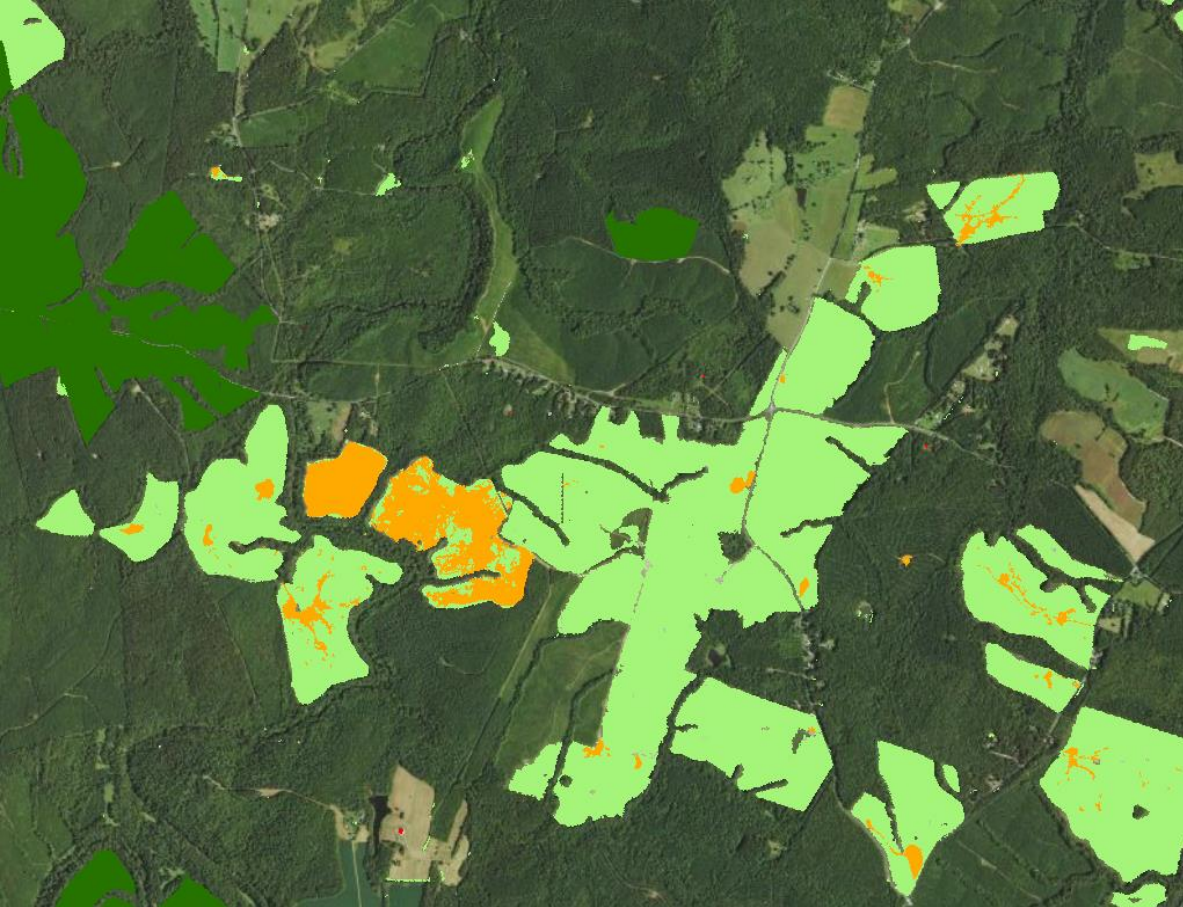
2014 NAIP

2018 NAIP



Land Cover Change

Land Use Change



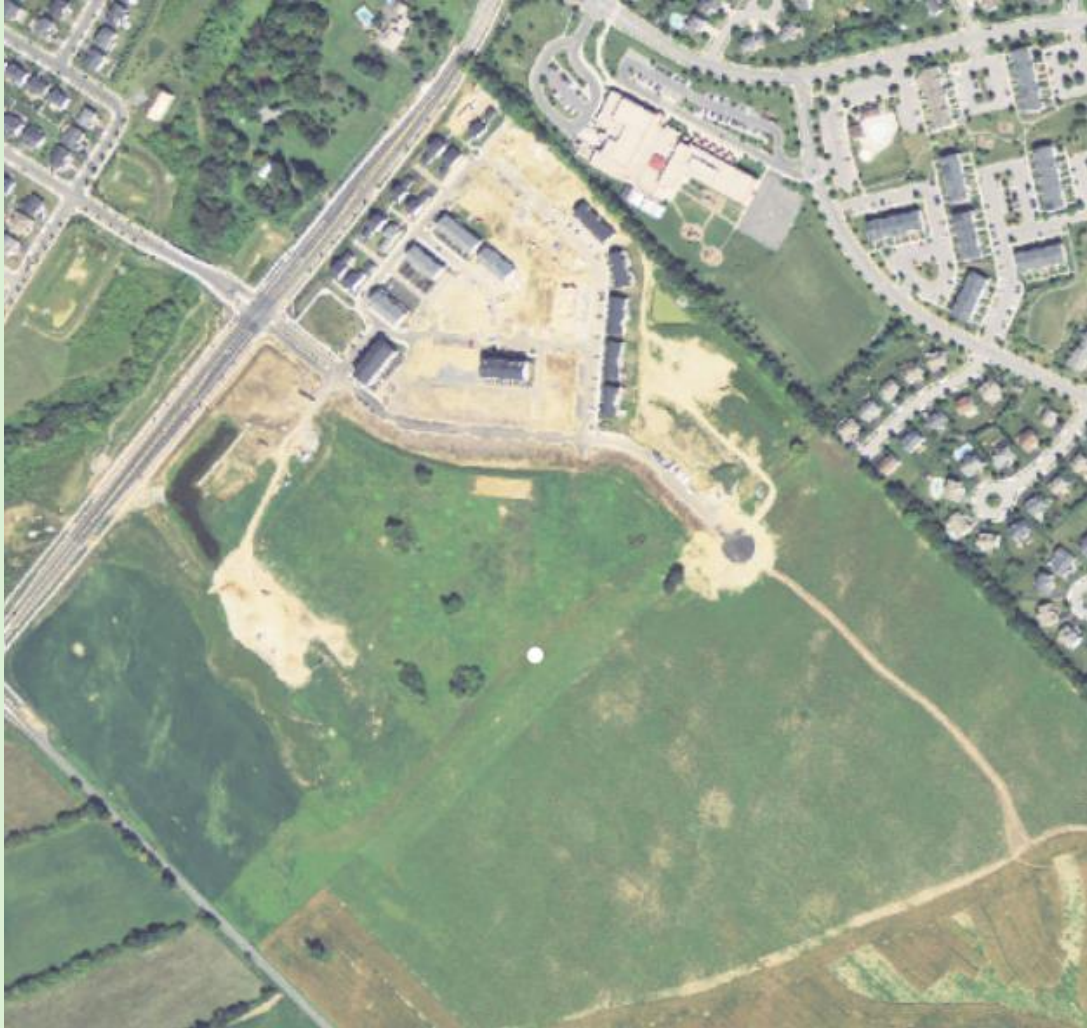
Tree Canopy to Barren (orange) and
Low Vegetation (light green)

Forest to Harvested Forest

Land Cover Change vs Land Use/Land Cover Change

- The key driver to LULC Change is Land Cover Change
 - All mapped Land Cover Transitions are converted to LULC Transitions
- Tax parcels and Land Cover Change are used to signal areas of Land Use change that did not have a change in land cover
 - Low Vegetation in a parcel that became developed in the observed period
 - Tree Canopy that became fragmented, no longer meeting Forest requirements

2013 NAIP



2018 NAIP



Land Cover Change

Land Use Change



Land Cover Change

Land Use Change



Land Cover no change (low vegetation)

Cropland to Turf Grass

Major LULC Transitions in the CBW

- Timber Harvesting
 - ~257,000 Acres of Forest transitioning to Harvested Forest and Natural Succession
 - ~3,000 Acres of Other Tree Canopy transitioning to Harvested Forest and Natural Succession
 - Likely that most of this will become forested again over the next decade
 - ~80,000 acres of Harvested Forest and Natural Succession to Forest and Other Tree Canopy
 - Takes longer for satellite imagery to detect forest growth (~10 years) than forest clearing (immediate)
- Development
 - ~130,000 Acres of new development
 - ~50,000 Acres of new impervious
 - ~67,000 Acres of new Turf Grass and Tree Canopy over Turf Grass
 - ~12,000 Acres of other new pervious development (solar fields, utility right of ways, construction)
 - ~**93,000** Acres of Forest and Other Tree Canopy transitioned to development (including Tree Canopy over Impervious and Turf Grass)
 - ~**40,000** Acres of Agriculture transitioned to development

Major LULC Transitions in the CBW (Cont.)

- Agriculture
 - Net reduction of Agriculture by ~36,500 Acres
 - ~36,000 Acres of Agriculture transitioned to Forest and Other Tree Canopy
 - ~41,000 Acres of Agriculture transitioned to Development
- Forest
 - Net reduction of Forest by ~304,000 Acres
 - ~**83,000** Acres of Forest transitioned to Development
 - ~13,500 Acres of Forest to Impervious
 - ~41,000 Acres of Forest to Turf and Tree Canopy over Turf
 - ~257,000 Acres of Forest transitioned to Harvested Forest and Natural Succession
 - ~**43,000** Acres of Forest transitioned to Agriculture

Nuances of Change Transitions

- The “end state” for some transitions requires mapping a future date of LULC to accurately interpret them
- Forest to Agriculture is mapped when there is a Forest clearing next to an agricultural field
 - Forest Harvest?
 - Agriculture expansion?
 - Cleared for development?
- Forest to Harvested Forest and Natural Succession
 - Forest to Natural Succession is most likely harvesting
- Agriculture Herbaceous to Agriculture Barren
 - Cleared for construction?

18-Class Change Matrix for the CBW

2013/14-2017/18	ROAD	IMPS	IMPO	TCIS	TURF	TCTG	PDEV	FORE	TCOT	HARF	NATS	CROP	PAST	EXTR	TDLW	RIVW	TERW	WATR	Decrease
ROAD	0	14	338	696	74	66	206	138	75	1	17	11	14	4	0	2	0	2	1,657
IMPS	1	0	937	508	277	88	143	7	2	1	37	75	84	2	0	0	0	1	2,165
IMPO	516	3,173	0	1,587	4,334	305	1,288	166	60	102	785	652	1,331	1	21	25	5	35	14,386
TCIS	42	485	690	0	2,446	0	1,599	0	0	181	408	98	184	6	3	7	1	1	6,149
TURF	0	828	5,558	0	0	8,514	1,089	107	106	21	127	3	8	725	0	0	0	0	17,085
TCTG	13	930	4,143	11	11,096	0	783	0	0	93	422	246	539	9	0	0	0	2	18,286
PDEV	1,130	4,377	6,865	0	15,251	49	0	304	33	221	417	142	79	1,270	0	0	0	101	30,241
FORE	1,161	2,764	8,918	732	13,096	28,221	28,107	0	22,046	175,564	81,474	19,557	23,186	4,066	1,381	5,568	193	297	416,330
TCOT	123	952	2,339	0	2,068	2,032	2,341	0	0	788	2,278	3,075	4,566	386	108	250	27	42	21,375
HARF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NATS	63	149	477	0	3,481	371	826	76,425	4,389	4,295	0	546	356	501	0	0	0	1,090	92,968
CROP	500	3,018	8,369	0	4,031	165	2,514	11,299	3,088	1,367	2,069	0	126	1,182	0	0	0	780	38,509
PAST	307	2,253	9,607	0	6,562	185	3,857	13,163	8,984	1,631	4,035	123	0	1,232	0	0	0	402	52,340
EXTR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TDLW	2	4	91	0	1	0	0	1,746	162	8	0	0	0	0	0	0	0	73	2,087
RIVW	9	31	104	0	167	0	0	7,499	512	208	0	0	0	20	0	0	0	156	8,707
TERW	2	9	43	0	41	2	28	629	86	11	11	16	5	15	0	0	0	36	933
WATR	2	5	130	0	51	15	65	75	153	0	66	71	73	213	28	22	7	0	975
Increase	3,872	18,991	48,610	3,535	62,975	40,010	42,846	111,558	39,695	184,491	92,147	24,616	30,550	9,634	1,541	5,874	232	3,017	724,192
Totals																			
TotIncrease	3,872	18,991	48,610	3,535	62,975	40,010	42,846	111,558	39,695	184,491	92,147	24,616	30,550	9,634	1,541	5,874	232	3,017	
TotDecrease	1,657	2,165	14,386	6,149	17,085	18,286	30,241	416,330	21,375	0	92,968	38,509	52,340	0	2,087	8,707	933	975	
Net	2,215	16,827	34,224	(2,615)	45,890	21,723	12,605	(304,772)	18,319	184,491	(821)	(13,893)	(21,790)	9,634	(546)	(2,833)	(701)	2,042	

18-Class Change Matrix for the CBW

2013/14-2017/18	ROAD	IMPS	IMPO	TCIS	TURF	TCTG	PDEV	FORE	TCOT	HARF	NATS	CROP	PAST	EXTR	TDLW	RIVW	TERW	WATR	Decrease
ROAD	0	14	338	696	74	66	206	138	75	1	17	11	14	4	0	2	0	2	1,657
IMPS	1	0	937	508	277	88	143	7	2	1	37	75	84	2	0	0	0	1	2,165
IMPO	516	3,173	0	1,587	4,334	305	1,288	166	60	102	785	652	1,331	1	21	25	5	35	14,386
TCIS	42	485	690	0	2,446	0	1,599	0	0	181	408	98	184	6	3	7	1	1	6,149
TURF	0	828	5,558	0	0	8,514	1,089	107	106	21	127	3	8	725	0	0	0	0	17,085
TCTG	13	930	4,143	11	11,096	0	783	0	0	93	422	246	539	9	0	0	0	2	18,286
PDEV	1,130	4,377	6,865	0	15,251	49								1,270	0	0	0	101	30,241
FORE	1,161	2,764	8,918	732	13,096	28,221								4,066	1,381	5,568	193	297	416,330
TCOT	123	952	2,339	0	2,068	2,032								386	108	250	27	42	21,375
HARF	0	0	0	0	0	0								0	0	0	0	0	0
NATS	63	149	477	0	3,481	371								501	0	0	0	1,090	92,968
CROP	500	3,018	8,369	0	4,031	165	2,514	11,299	3,088	1,367	2,069	0	126	1,182	0	0	0	780	38,509
PAST	307	2,253	9,607	0	6,562	185	3,857	13,163	8,984	1,631	4,035	123	0	1,232	0	0	0	402	52,340
EXTR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TDLW	2	4	91	0	1	0	0	1,746	162	8	0	0	0	0	0	0	0	73	2,087
RIVW	9	31	104	0	167	0	0	7,499	512	208	0	0	0	20	0	0	0	156	8,707
TERW	2	9	43	0	41	2	28	629	86	11	11	16	5	15	0	0	0	36	933
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TotDecrease	1,657	2,165	14,386	6,149	17,085	18,286	30,241	416,330	21,375	0	92,968	38,509	52,340	0	2,087	8,707	933	975	
Net	2,215	16,827	34,224	(2,615)	45,890	21,723	12,605	(304,772)	18,319	184,491	(821)	(13,893)	(21,790)	9,634	(546)	(2,833)	(701)	2,042	

Forest to Tree Canopy over Turf Grass
 Not a loss of tree canopy but a change in use
 Implies development in forested areas as well as new trees in developed areas

18-Class Change Matrix for the CBW

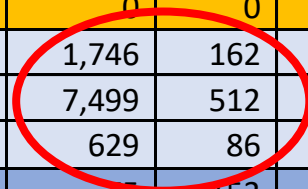
2013/14-2017/18	ROAD	IMPS	IMPO	TCIS	TURF	TCTG	PDEV	FORE	TCOT	HARF	NATS	CROP	PAST	EXTR	TDLW	RIVW	TERW	WATR	Decrease			
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IMPS	1	0	937	508	277	88	143	7	2	1	37	75	84	2	0	0	0	1	2,165			
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PDEV	1,130	4,377	6,865	0	15,251	49	0	304	33	<div style="border: 1px solid black; padding: 5px;"> <p>Forest to Tree Canopy, Other Shape and size of forest patch changed, no longer meeting forest requirements Implies forest fragmentation</p> </div>										0	101	30,241
FORE	1,161	2,764	8,918	732	13,096	28,221	28,107	0	22,046											.93	297	416,330
TCOT	123	952	2,339	0	2,068	2,032	2,341	0	0											27	42	21,375
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NATS	63	149	477	0	3,481	371	826	76,425	4,389	4,295	0	546	356	501	0	0	0	1,090	92,968			
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PAST	307	2,253	9,607	0	6,562	185	3,857	13,163	8,984	1,631	4,035	123	0	1,232	0	0	0	402	52,340			
EXTR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
TDLW	2	4	91	0	1	0	0	1,746	162	8	0	0	0	0	0	0	0	73	2,087			
RIVW	9	31	104	0	167	0	0	7,499	512	208	0	0	0	20	0	0	0	156	8,707			
TERW	2	9	43	0	41	2	28	629	86	11	11	16	5	15	0	0	0	36	933			
WATR	2	5	130	0	51	15	65	75	153	0	66	71	73	213	28	22	7	0	975			
Increase	3,872	18,991	48,610	3,535	62,975	40,010	42,846	111,558	39,695	184,491	92,147	24,616	30,550	9,634	1,541	5,874	232	3,017	724,192			
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2013/14-2017/18	ROAD	IMPS	IMPO	TCIS	TURF	TCTG	PDEV	FORE	TCOT	HARF	NATS	CROP	PAST	EXTR	TDLW	RIVW	TERW	WATR	Decrease
ROAD	0	14	338	696	74	66	206	138	75	1	17	11	14	4	0	2	0	2	1,657
IMPS	1	0	937	508	277	88	143	7	2	1	37	75	84	2	0	0	0	1	2,165
IMPO	516	3,173	0	1,587	4,334	305	1,288	166	60	102	785	652	1,331	1	21	25	5	35	14,386
TCIS	42	485	690	0	2,446	0	1,599	0	0	181	408	98	184	6	3	7	1	1	6,149
TURF	0	828	5,558	0	0	8,514	1,089	107	106	21	127	3	8	725	0	0	0	0	17,085
TCTG	13	930	4,143	11	11,096	0	783	0	0	93	422	246	539	9	0	0	0	2	18,286
PDEV	1,130	4,377	6,865	0	15,251	49	0	304	33	221	417	142	79	1,270	0	0	0	101	30,241
FORE	1,161	2,764	8,918	732	13,096	28,221	28,107	0	22,046	175,564	81,474	19,557	23,186	4,066	1,381	5,568	193	297	416,330
TCOT	123	952	2,339	0	2,068	2,032	2,341												,375
HARF	0	0	0	0	0	0	0												0
NATS	63	149	477	0	3,481	371	826	7											,968
CROP	500	3,018	8,369	0	4,031	165	2,514	1											,509
PAST	307	2,253	9,607	0	6,562	185	3,857	13,163	8,984	1,631	4,035	123	0	1,232	0	0	0	402	52,340
EXTR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TDLW	2	4	91	0	1	0	0	1,746	162	8	0	0	0	0	0	0	0	73	2,087
RIVW	9	31	104	0	167	0	0	7,499	512	208	0	0	0	20	0	0	0	156	8,707
TERW	2	9	43	0	41	2	28	629	86	11	11	16	5	15	0	0	0	36	933
WATR	2	5	130	0	51	15	65	75	153	0	66	71	73	213	28	22	7	0	975
Increase	3,872	18,991	48,610	3,535	62,975	40,010	42,846	111,558	39,695	184,491	92,147	24,616	30,550	9,634	1,541	5,874	232	3,017	724,192
Totals																			
TotIncrease	3,872	18,991	48,610	3,535	62,975	40,010	42,846	111,558	39,695	184,491	92,147	24,616	30,550	9,634	1,541	5,874	232	3,017	
TotDecrease	1,657	2,165	14,386	6,149	17,085	18,286	30,241	416,330	21,375	0	92,968	38,509	52,340	0	2,087	8,707	933	975	
Net	2,215	16,827	34,224	(2,615)	45,890	21,723	12,605	(304,772)	18,319	184,491	(821)	(13,893)	(21,790)	9,634	(546)	(2,833)	(701)	2,042	

Non-forested Wetlands to Wetland Forest and Tree Canopy

Not a change in wetland footprints
Gain in forest and tree canopy



18-Class Change Matrix for the CBW

2013/14-2017/18	ROAD	IMPS	IMPO	TCIS	TURF	TCTG	PDEV	FORE	TCOT	HARF	NATS	CROP	PAST	EXTR	TDLW	RIVW	TERW	WATR	Decrease
ROAD	0	14	338	696	74	66	206	138	75	1	17	11	14	4	0	2	0	2	1,657
IMPS	1	0	937	508	277	88	143	7	2	1	37	75	84	2	0	0	0	1	2,165
IMPO	516	3,173	0	1,587	4,334	305	1,288	166	60	102	785	652	1,331	1	21	25	5	35	14,386
TCIS	42	485	690	0	2,446	0	1,599	0	0	181	408	98	184	6	3	7	1	1	6,149
TURF	0	828	5,558	0	0	8,514	1,089	107	106	21	127	3	8	725	0	0	0	0	17,085
TCTG	13	930	4,143	11	11,096	0	783	0	0	93	422	246	539	9	0	0	0	2	18,286
PDEV	1,130	4,377	6,865	0	15,251	49	0	304	33	221	417	142	79	1,270	0	0	0	101	30,241
FORE	1,161	2,764	8,918	732	13,096	28,221	28,107	0	22,046	175,564	81,474	19,557	23,186	4,066	1,381	5,568	193	297	416,330
TCOT	123	952	2,339	0	2,068	2,032	2,341	0	0	788	2,278	3,075	4,566	386	108	250	27	42	21,375
HARF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NATS	63	149	477	0	3,481	371	826	76,425	4,389	4	0	0	0	0	0	0	0	0	8
CROP	500	3,018	8,369	0	4,031	165	2,514	11,299	3,088	1	0	0	0	0	0	0	0	0	9
PAST	307	2,253	9,607	0	6,562	185	3,857	13,163	8,984	1	0	0	0	0	0	0	0	0	0
EXTR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TDLW	2	4	91	0	1	0	0	1,746	162	0	0	0	0	0	0	0	0	0	7
RIVW	9	31	104	0	167	0	0	7,499	512	208	0	0	0	20	0	0	0	156	8,707
TERW	2	9	43	0	41	2	28	629	86	11	11	16	5	15	0	0	0	36	933
WATR	2	5	130	0	51	15	65	75	153	0	66	71	73	213	28	22	7	0	975
Increase	3,872	18,991	48,610	3,535	62,975	40,010	42,846	111,558	39,695	184,491	92,147	24,616	30,550	9,634	1,541	5,874	232	3,017	724,192
Totals																			
TotIncrease	3,872	18,991	48,610	3,535	62,975	40,010	42,846	111,558	39,695	184,491	92,147	24,616	30,550	9,634	1,541	5,874	232	3,017	
TotDecrease	1,657	2,165	14,386	6,149	17,085	18,286	30,241	416,330	21,375	0	92,968	38,509	52,340	0	2,087	8,707	933	975	
Net	2,215	16,827	34,224	(2,615)	45,890	21,723	12,605	(304,772)	18,319	184,491	(821)	(13,893)	(21,790)	9,634	(546)	(2,833)	(701)	2,042	

Forest and Tree Canopy to Non-forested Wetlands
 Not a change in wetland footprints
 Loss of forest and tree canopy

2021/2022 LULC – Release Date 2024

- The third time step in the series (2021/22) will be mapped in 2024
- The 2013/14 and 2017/18 steps will be retrospectively re-mapped using updated rules and classification
- LULC Change will be retrospectively updated for 2013/14 to 2017/18 and new LULC change from 2017/18 to 2021/22 will be mapped
- The 2021/22 LULC will provide some “end state” context for certain change transitions mapped for 2013/14 to 2017/18
- Access to Data and Documentation:
 - <https://www.chesapeakeconservancy.org/conservation-innovation-center/high-resolution-data/lulc-data-project-2022/>

Land Use Methods and Metrics (LUMM)

Outcome

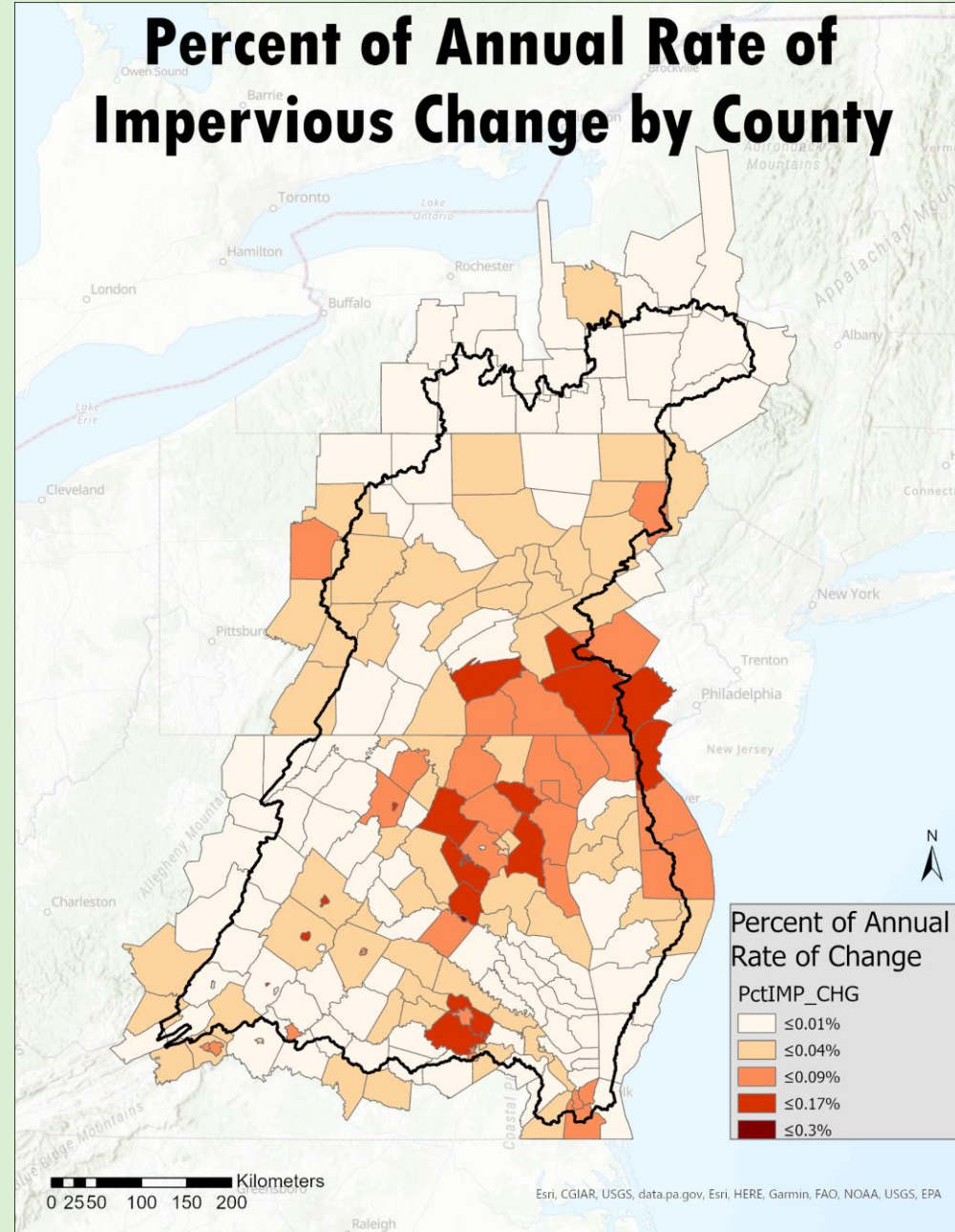
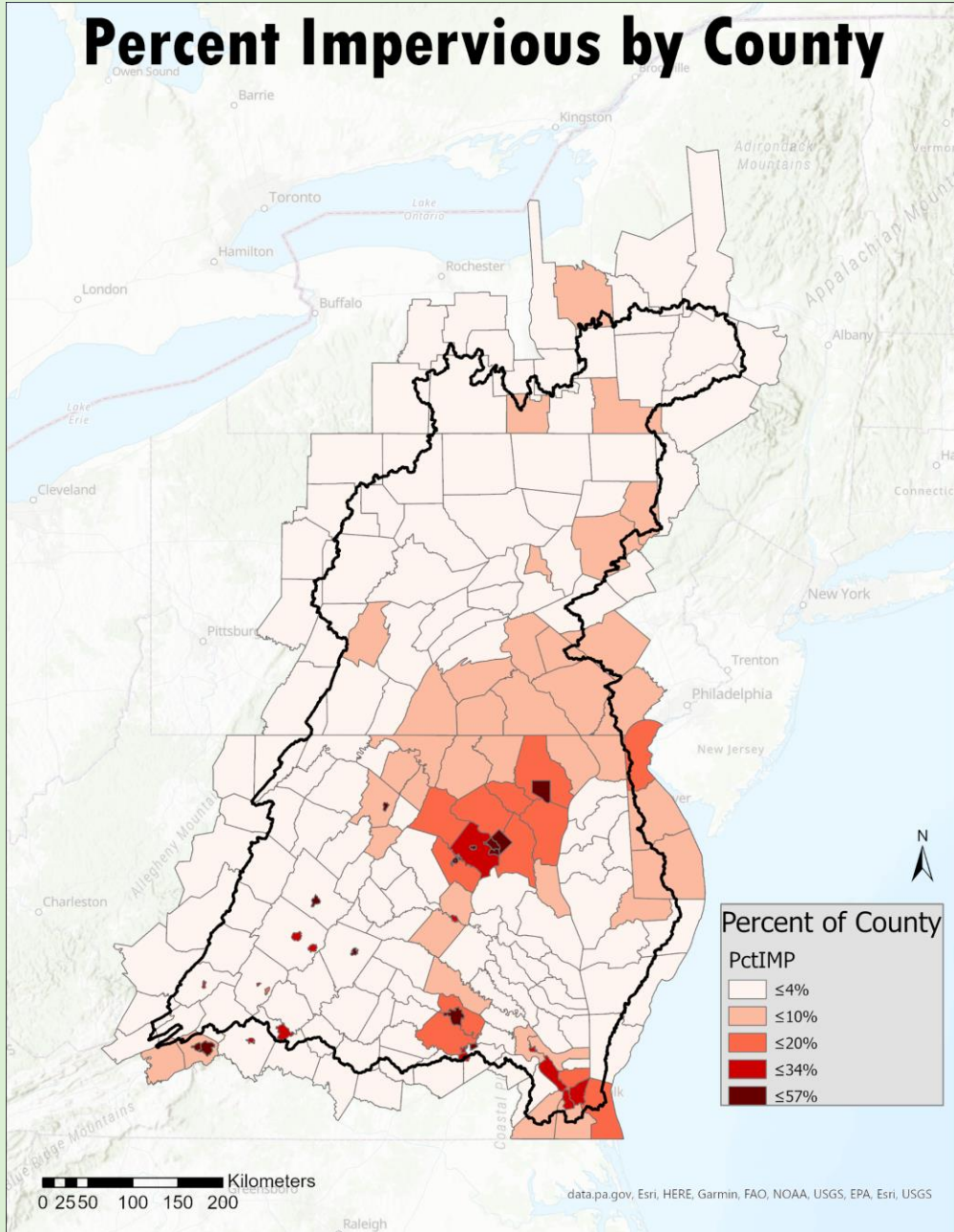
Through the Chesapeake Bay Watershed Agreement, the Chesapeake Bay Program has committed to...

- 1. Measure rate of farmland, forest and wetland conversion, and the extent and rate of change in impervious surface coverage.
- 2. Quantify the potential impacts of land conversion to water quality, healthy watersheds and communities.
- 3. Launch a public awareness campaign to share this information with citizens, local governments, elected officials and stakeholders.

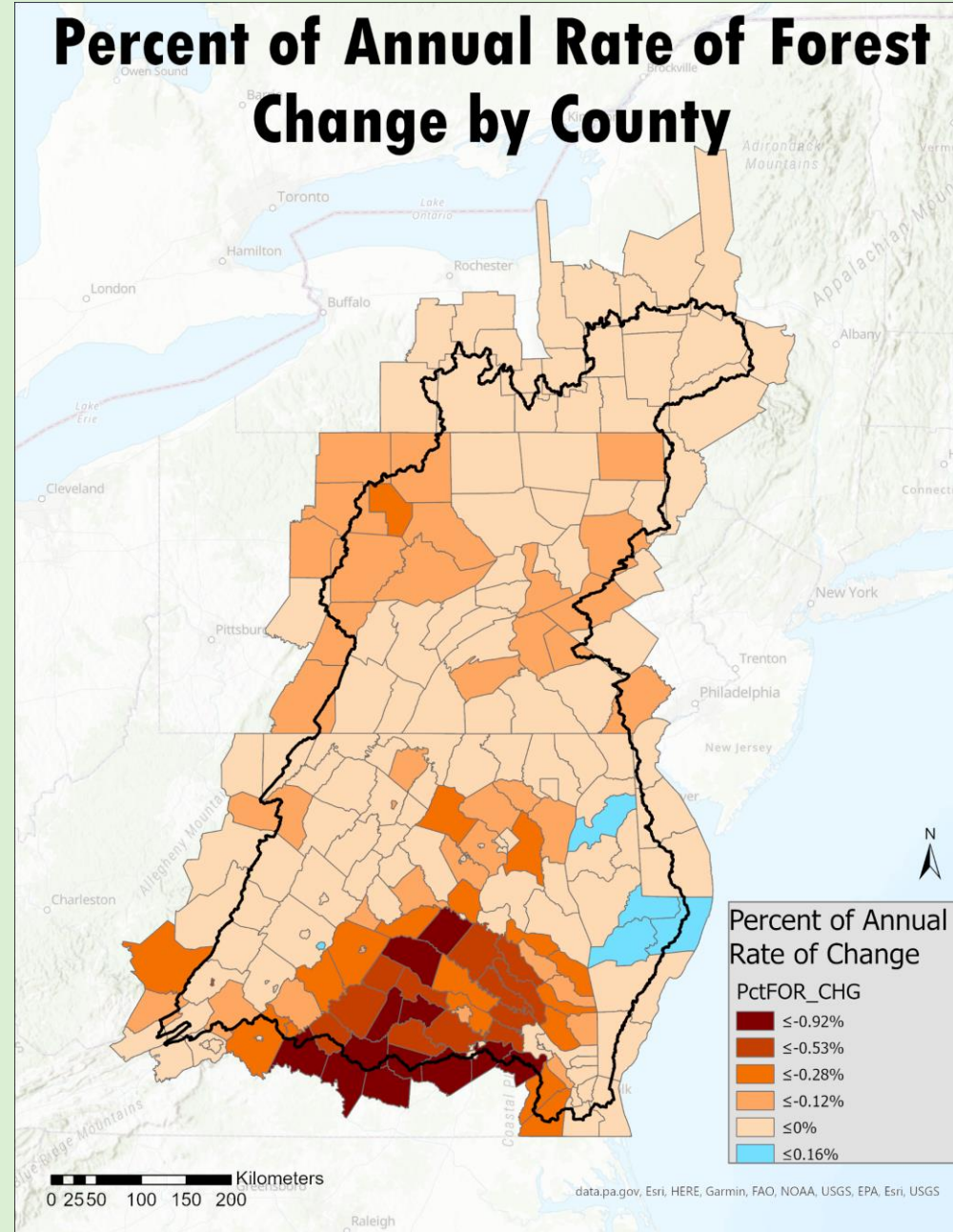
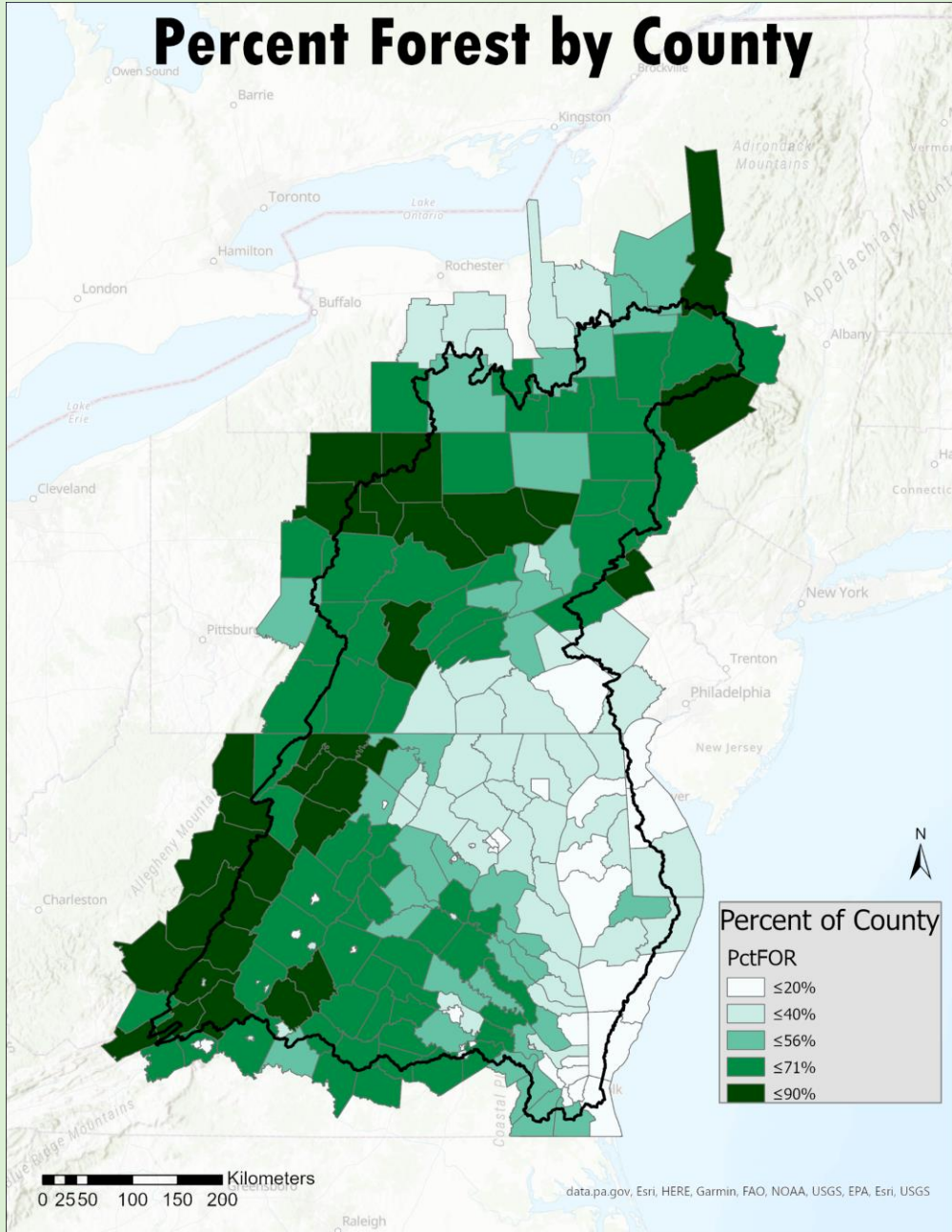
Using the 1-Meter LULC and Change to Meet LUMM Outcome

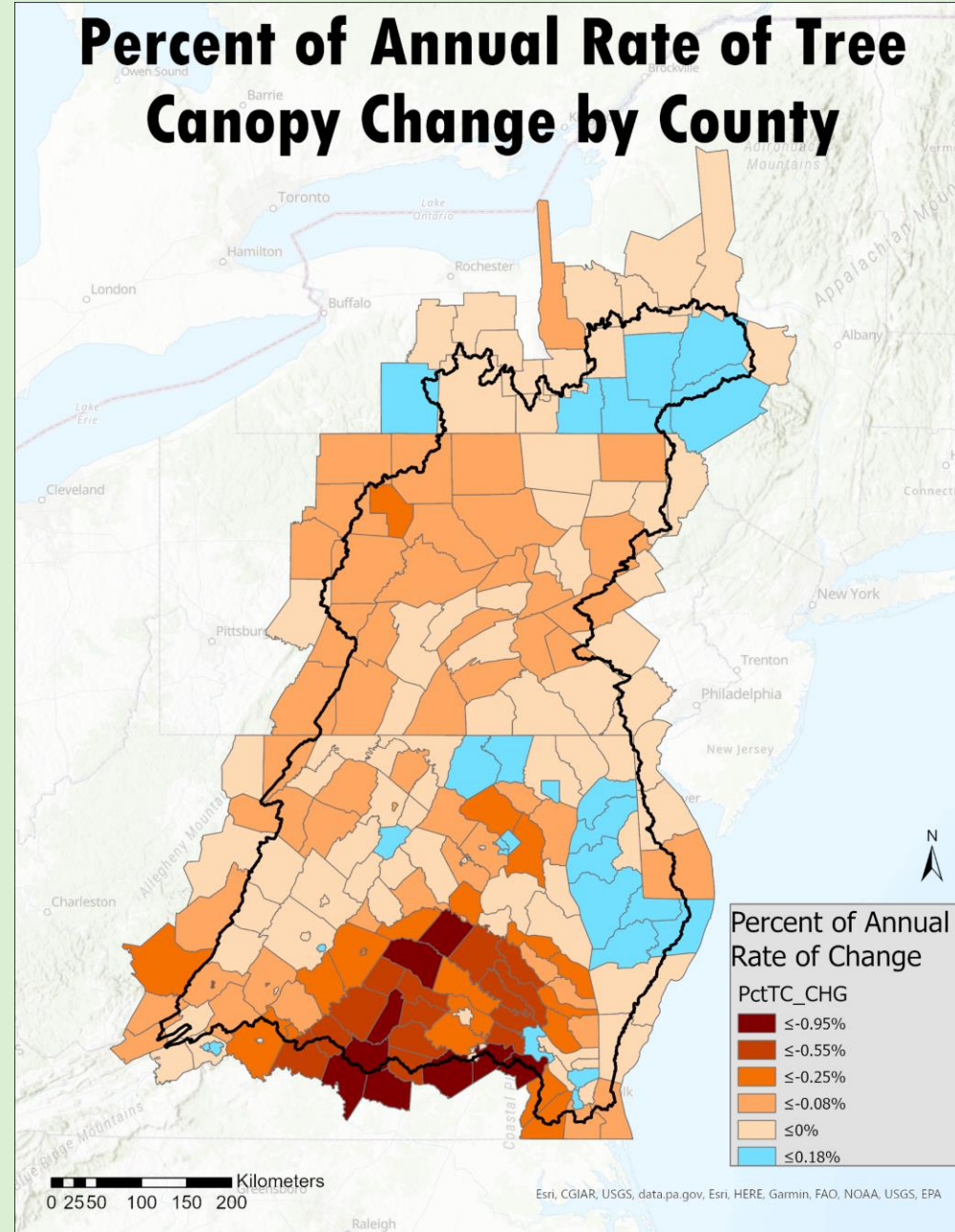
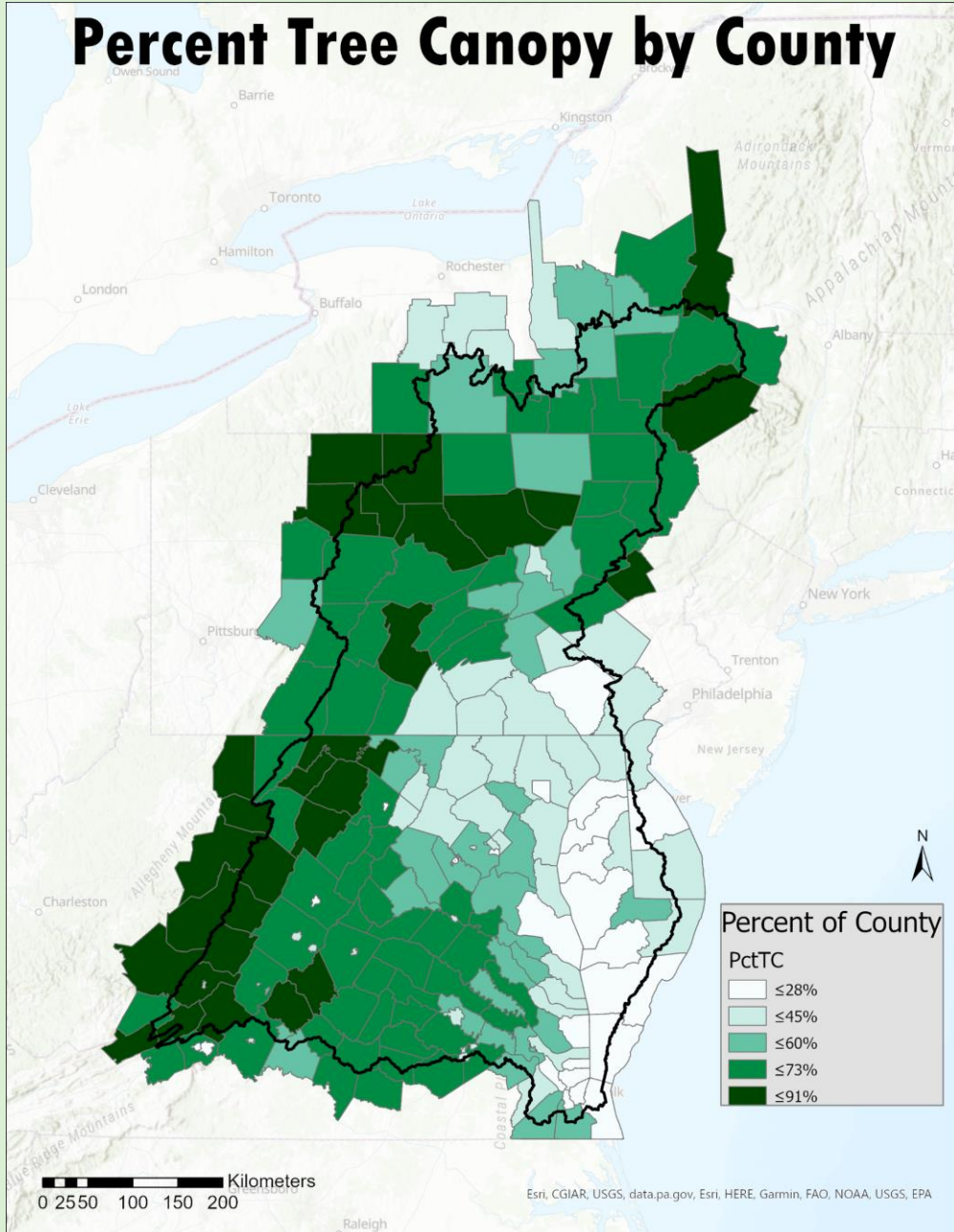
- The 1-meter resolution LULC and LULC change data can be summarized by different geographies to meet the LUMM Outcome
- The following data will be summarized at the county, NHDv2 Catchment*, and Watershed* scales:
 - Impervious
 - General Classes included: ROAD, IMPS, IMPO, TCIS
 - Forest
 - General Classes included: FORE (Forest and Forested Wetlands)
 - Tree Canopy
 - General Classes included: FORE, TCOT, TCTG, TCIS
 - Tree Canopy over Development
 - General Classes included: TCTG, TCIS
 - Natural
 - General Classes included: FORE, TCOT, NATS, HARF, TDLW, RIVW, TERW
- The following maps are percent of total area of geography (county, catchment, watershed)
 - the data is also recorded as Acres for each presented metric

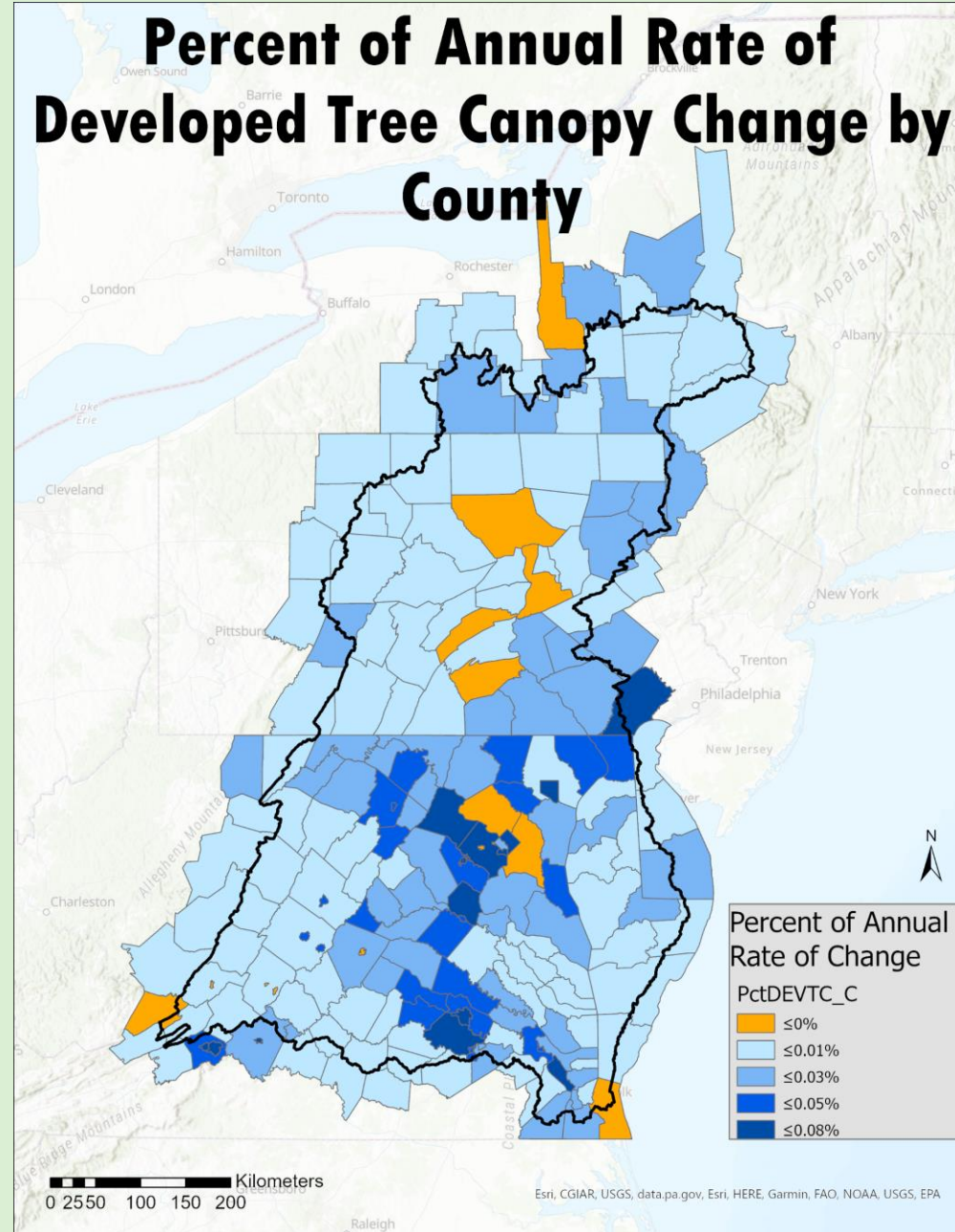
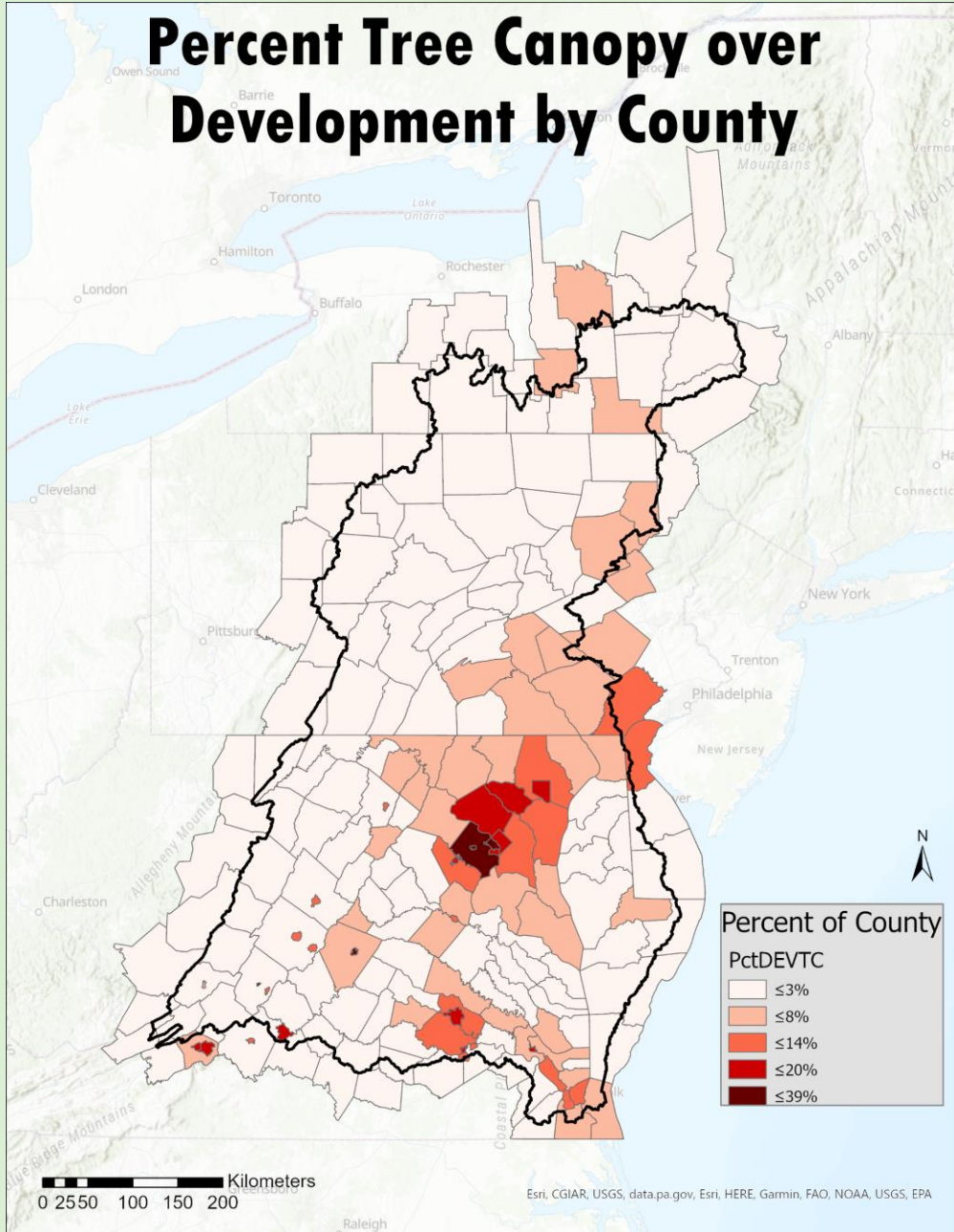
* Will be completed by 6/17/22

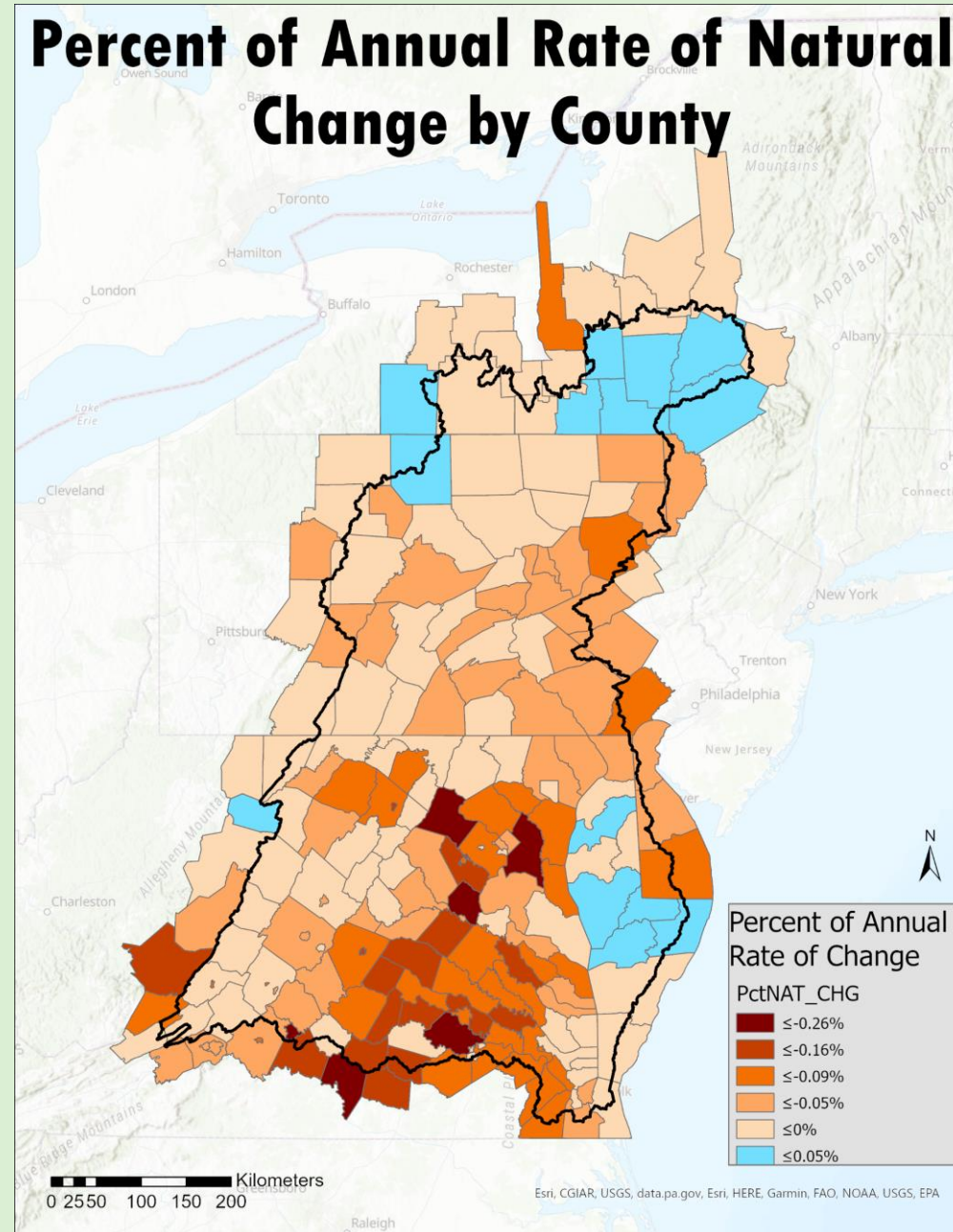
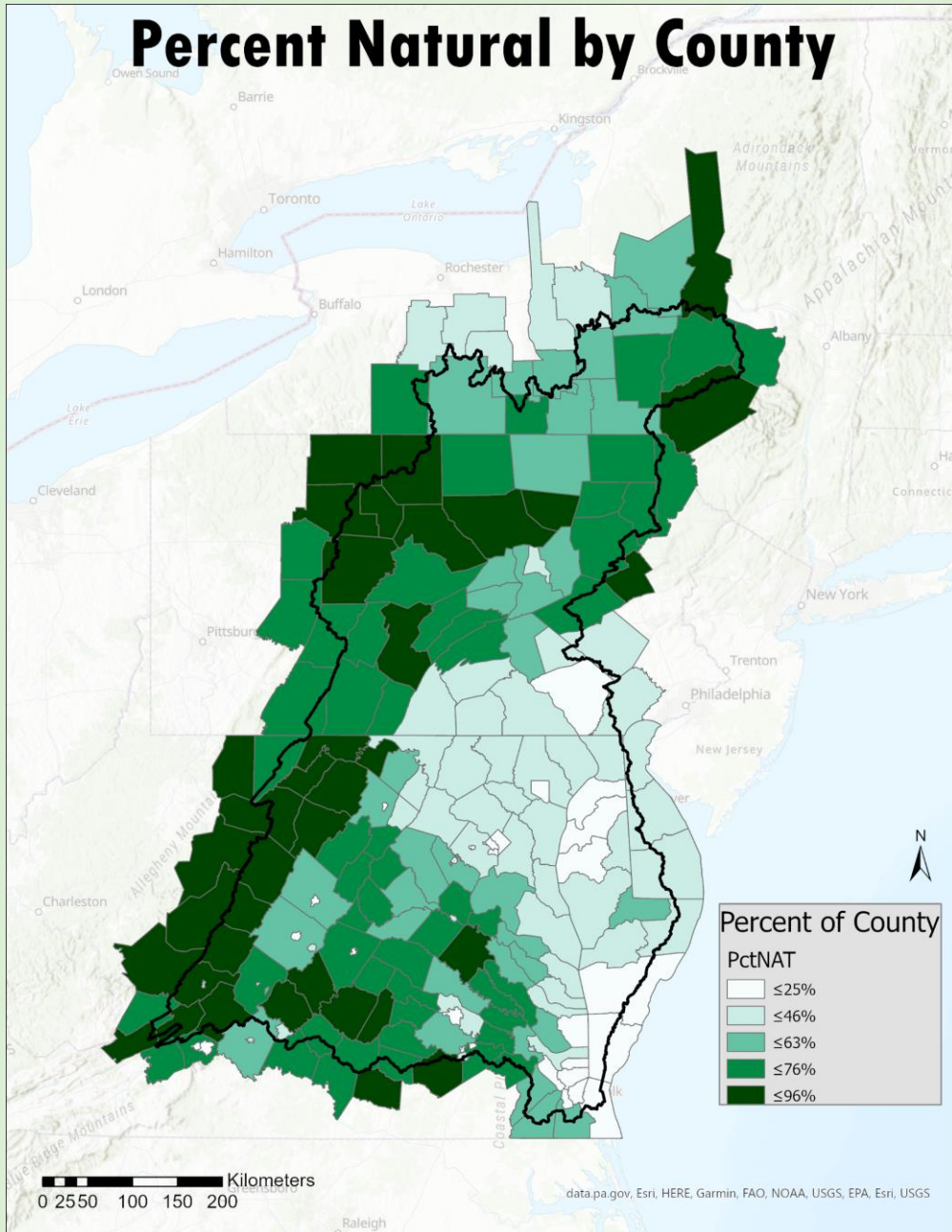


* Percent Annual Rate of Change refers to acres of change per year per total county area









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