

# Carbon sequestration potential for strategic reforestation in Maryland

v2

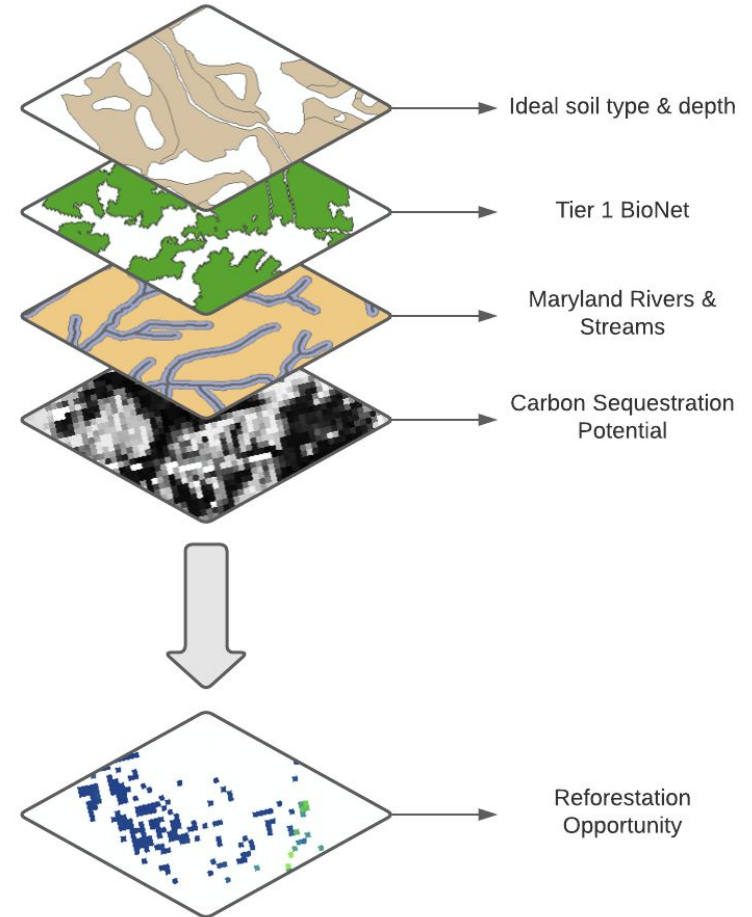
# Key Questions

What is the potential to sequester carbon?

Where is the reforestation potential that engages carbon sequestration, reinforces biodiversity, and filters water heading to the Chesapeake Bay?

How long does it take to reach CSP?

What is the existing land use/ownership?



# Data sets

NASA Carbon Monitoring System products - [Hurtt et al., 2019](#)

Maryland BioNet Conservation Areas - [MDNR](#)

Maryland Rivers & Streams detailed - [MDNR](#)

SSURGO Soil Database - [USDA](#)

# Average CSP, CSPG, CSPTG (within 1km scenarios)

Study Area	Area (hectares)	Area (acres)	% Area of MD	CSP average (Mg/ha)	CSPG average (Mg/ha)	CSPTG average (yr)
MD Statewide	3,058,999.99	7,558,953.60	100	293.5	190.2	228.1
<b>1000m</b>	2,826,542.17	6,984,537.81	92	294.96	191.03	228.15
BioNet Total	1,370,079.40	3,385,539.93	44.79	296.45	124.57	156.31
Tier 1	125,186.32	309,341.65	4.09	288.78	120.86	151.62
Tier 2	108,570.01	268,281.92	3.55	298.81	140.48	174.42
Tier 3	357,141.31	882,514.03	11.68	276.25	99.62	135.99
Tier 4	382,996.66	946,403.90	12.52	298.71	132.40	161.84
Tier 5	396,185.10	978,993.20	12.95	312.40	135.41	165.31
Ideal soil type & depth	501,749.31	1,239,849.55	16.40	333.34	221.16	248.49
1000m buffer + Tier 1 + Ideal soil type & depth	7,114.00	17,579.08	0.0023	133.00	63.81	189.22

# Average CSP, CSPG, CSPTG (within 100m scenarios)

<b>100m</b>	678,027.23	1,675,441.76	22.00	297.75	165.43	199.15
BioNet Total	411,515.66	1,016,877.34	13.45	298.97	117.02	144.18
Tier 1	53,324.55	131,767.64	1.74	291.03	121.53	150.00
Tier 2	36,833.22	91,016.72	1.20	295.45	129.83	159.01
Tier 3	96,607.32	238,721.51	3.16	274.76	95.87	129.06
Tier 4	97,808.96	241,690.84	3.20	304.64	116.36	137.56
Tier 5	126,941.61	313,679.07	4.15	314.79	128.31	154.74
Ideal soil type & depth	170,451.24	421,194.19	25.14	331.99	190.05	214.01
100m buffer + Tier 1 + Ideal soil type & depth	3,476.00	8,589.38	0.0011	133.00	60.19	177.13

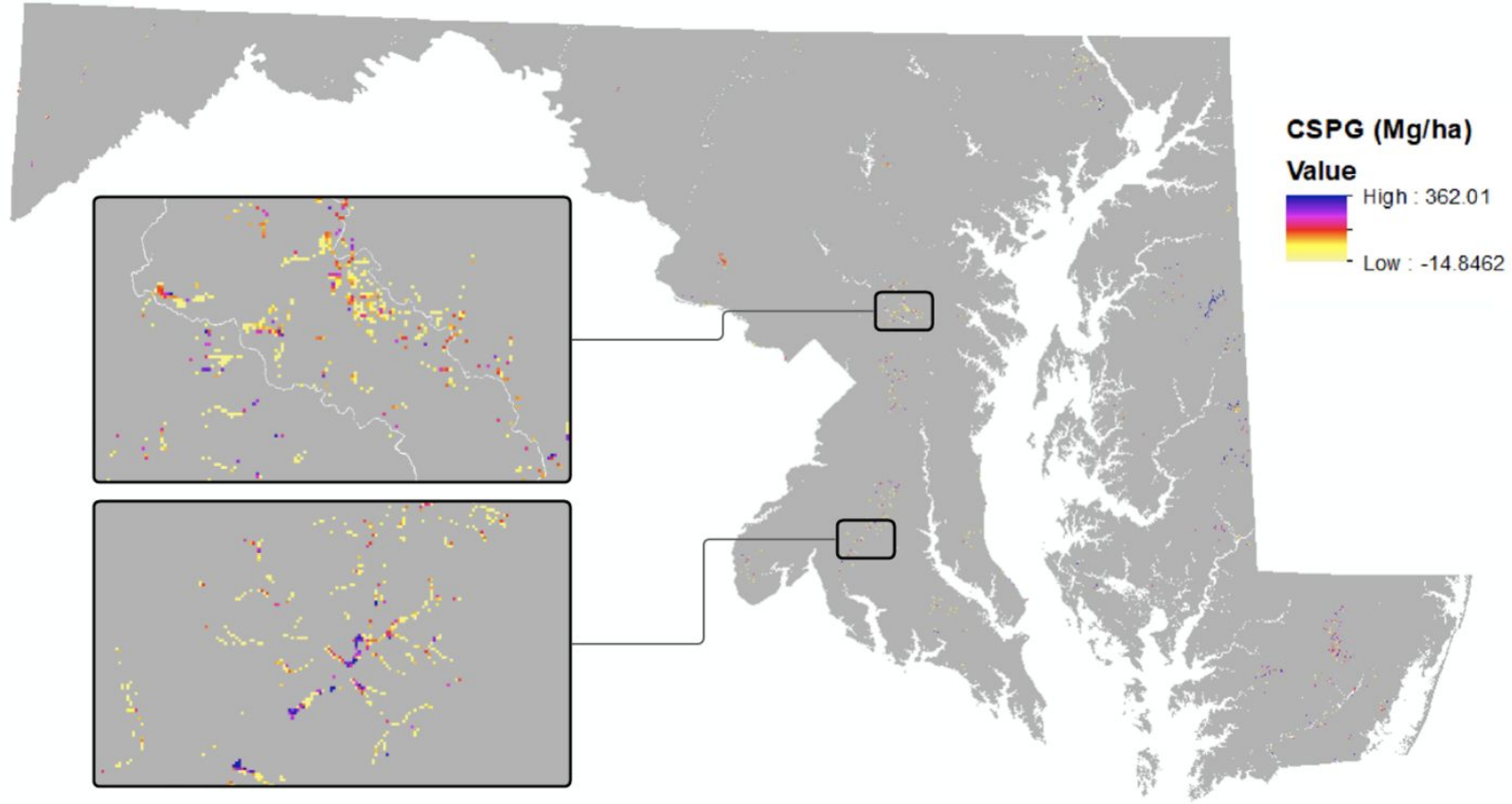
# Total CSP, CSPG, CSPTG (1km scenarios)

Study Area	Area (hectares)	Area (acres)	% Area of MD	CSP total (Tg C)	CSPG total (Tg C)	CSPTG total (yr)
<b>1000m</b>	2,826,542.17	6,984,537.81	92	307.84	199.38	458
BioNet Total	1,370,079.40	3,385,539.93	44.79	155.26	65.24	455
Tier 1	125,186.32	309,341.65	4.09	11.27	4.72	434
Tier 2	108,570.01	268,281.92	3.55	9.78	4.60	443
Tier 3	357,141.31	882,514.03	11.68	37.10	13.38	455
Tier 4	382,996.66	946,403.90	12.52	46.49	20.61	448
Tier 5	396,185.10	978,993.20	12.95	50.62	21.94	451
Ideal soil type & depth	501,749.31	1,239,849.55	16.40	26.54	17.61	433
1000m buffer + Tier 1+ Ideal soil type & depth	7,114.00	17,579.08	0.0023	1.17	0.56	402

# Total CSP, CSPG, CSPTG (100m scenarios)

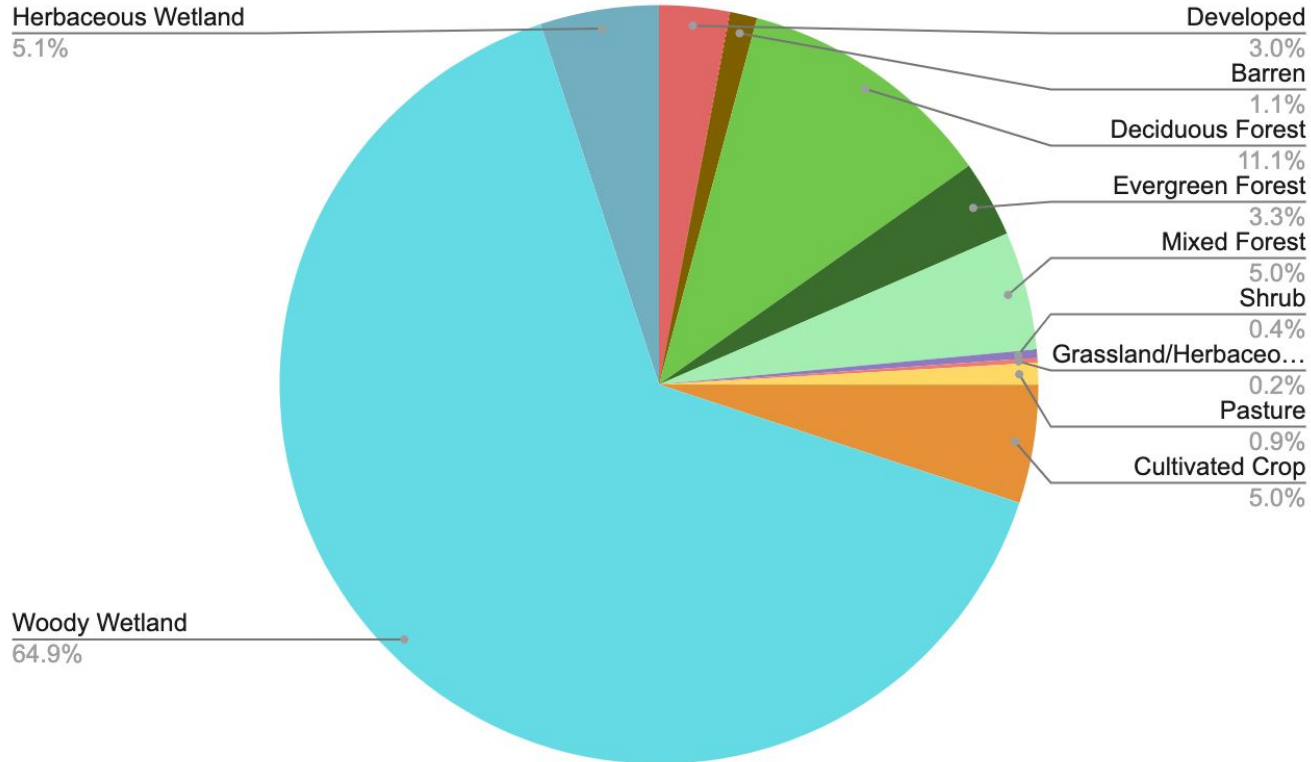
<b>100m</b>	678,027.23	1,675,441.76	22	64.88	36.05	455
BioNet Total	411,515.66	1,016,877.34	13.45	40.54	15.87	455
Tier 1	53,324.55	131,767.64	1.74	4.11	1.72	430
Tier 2	36,833.22	91,016.72	1.20	2.65	1.17	436
Tier 3	96,607.32	238,721.51	3.16	8.90	3.11	455
Tier 4	97,808.96	241,690.84	3.20	10.14	3.87	426
Tier 5	126,941.61	313,679.07	4.15	14.73	6.00	435
Ideal soil type & depth	170,451.24	421,194.19	25.14	7.49	4.29	443
100m buffer + Tier 1 + Ideal soil type & depth	3,476.00	8,589.38	0.0011	0.57	0.26	402

# Remaining opportunity for carbon sequestration in high priority areas





# Current land cover over priority area



# Current land ownership over priority area

