

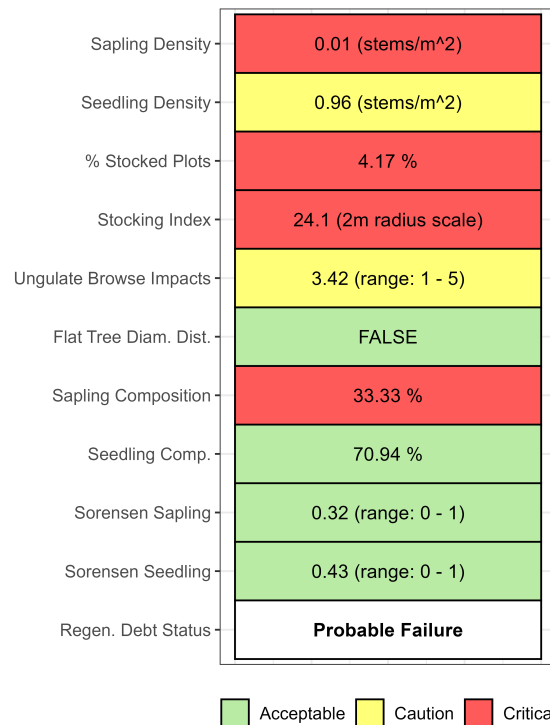


Figure 1. Regeneration Debt status for the most recent 4-year census (2019 – 2024) in Assateague Island National Seashore (ASIS). Flat Tree Diam. Dist. stands for Flat Tree Diameter Distribution. If TRUE, the density of small trees is lower than expected due to chronic regeneration failure. Sapling/Seedling Composition is the % of total stems composed of native canopy-forming species. Sorensen is a measure of how closely the regen. layer matches canopy composition. For more details on metric calculations, thresholds and assessment of status, see Miller et al. 2023 (<https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/eap.2837>).

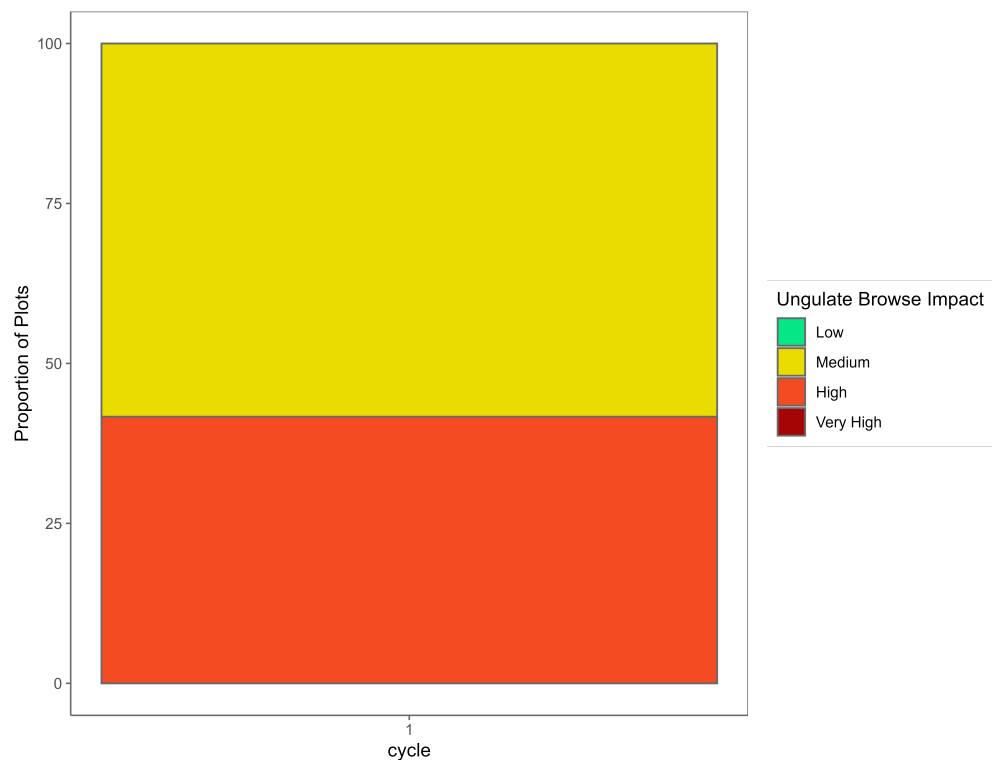


Figure 2. Ungulate browse impacts in cycle 1 in Assateague Island National Seashore (ASIS). Note that this index does not distinguish deer from horse browse in ASIS. Cycle 1: 2019 – 2024.

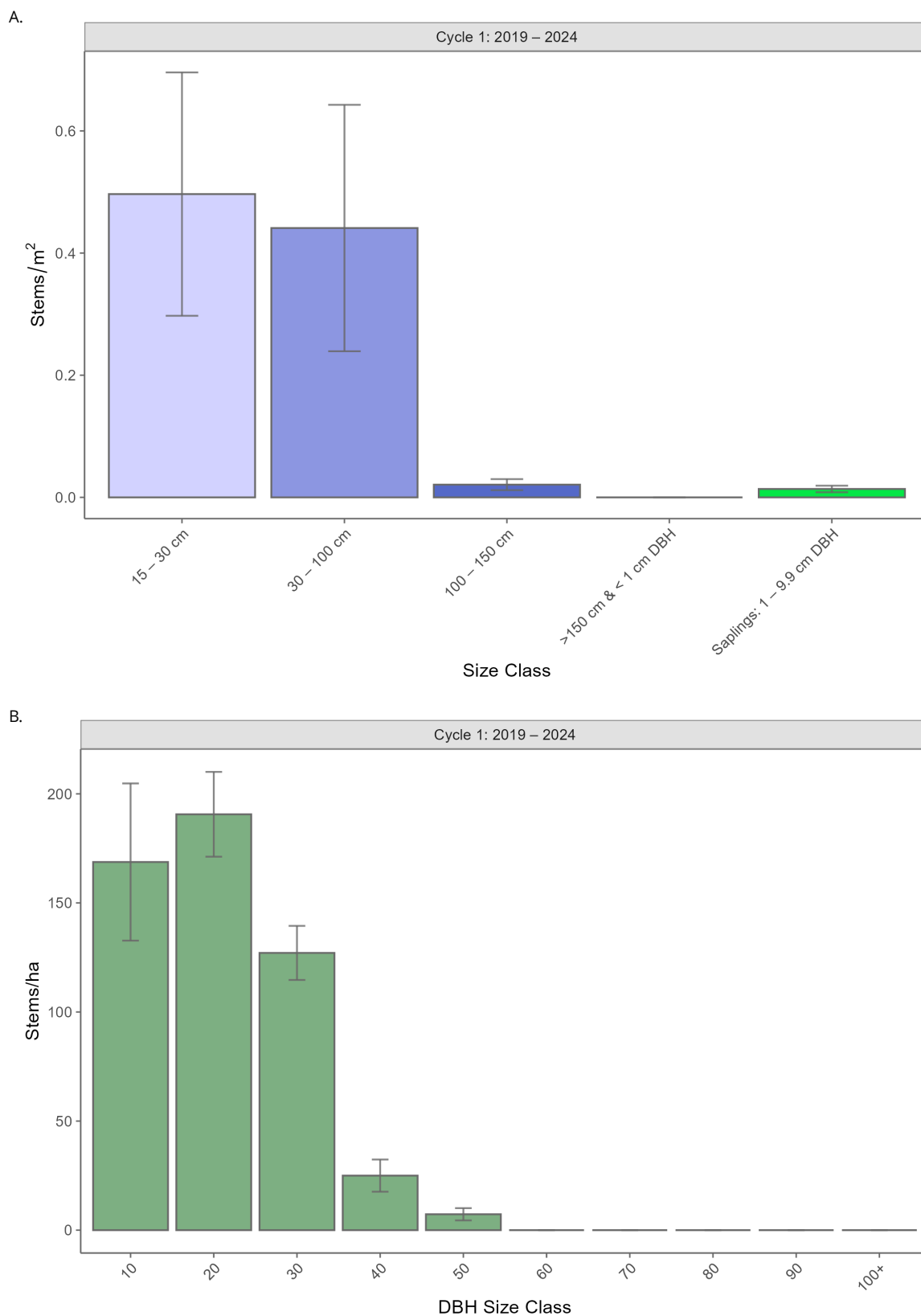


Figure 3. Stem density distributions by cycle in Assateague Island National Seashore (ASIS). Cycle 1: 2019 – 2024. Figure A shows regeneration densities by size class. Figure B shows tree density by diameter at breast height (DBH) increments. Error bars are ± 1 SE. An asterisk denotes a linear DBH distribution that is indicative of long-term recruitment failure.

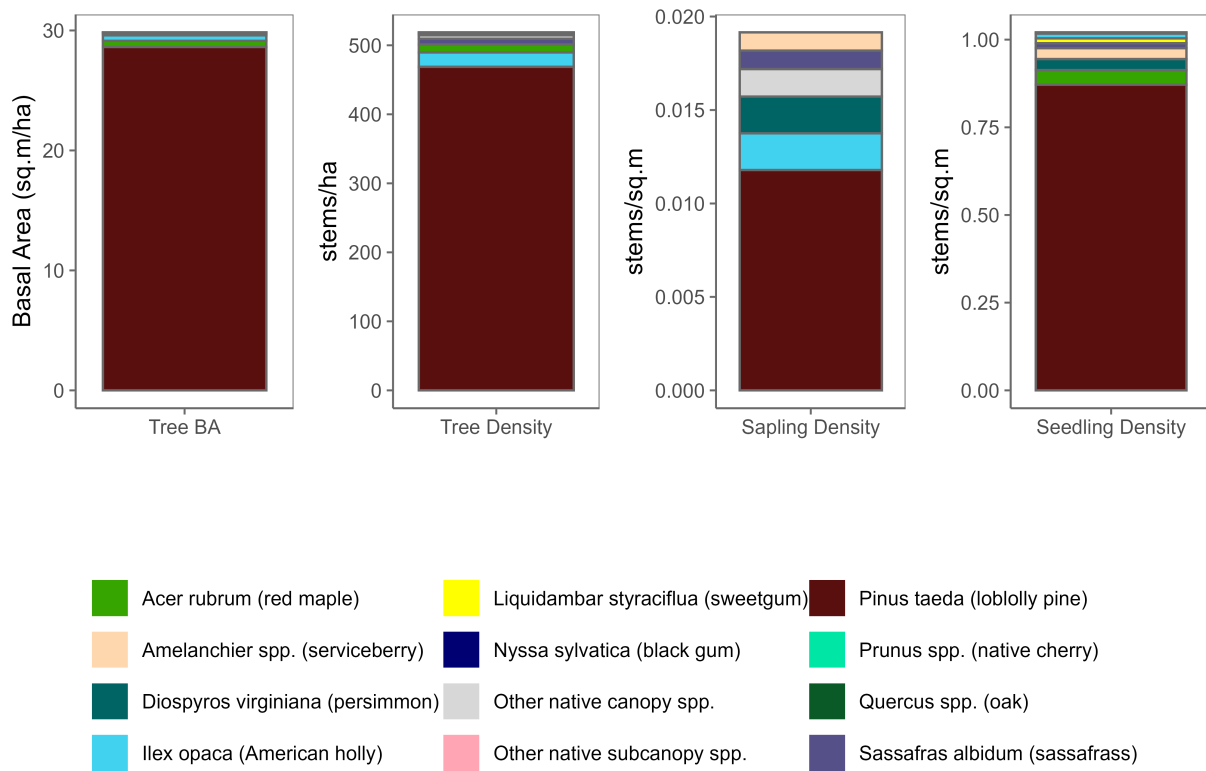


Figure 4. Average abundance by species for tree basal area (sq.m/ha), live tree density (stems/ha), sapling density (stems/sq.m), and seedling density (stems/sq.m) in cycle 1 for Assateague Island National Seashore.



Table 1. Average plot-level seedling and sapling stem densities (stems per m²) and stocking index (at the 2m radius scale) for Cycle 1. Only native, canopy-forming species are included. Note that *Fraxinus* spp. (ash species) are not considered canopy-forming species. Cycle 1: 2019 – 2024. The stocking index quantifies whether current regeneration densities are sufficient to restock a forest canopy. The index is a weighted sum of seedling and sapling densities where larger seedling size classes get higher weights. Cells highlighted in green are plots that meet the minimum management target of 0.25 seedlings/m² and 0.14 saplings/m² or have a stocking index >100. These are the same thresholds used in Figure 2 and are described in Miller et al. 2023.

Plot	Panel	Seedlings per sq.m	Saplings per sq.m	Stocking Index
385	1	0.17	0.00	23.00
386	1	1.25	0.00	39.84
387	1	0.00	0.06	0.00
388	1	0.08	0.00	1.01
389	1	0.00	0.00	0.00
390	1	0.17	0.00	3.14
391	2	0.00	0.00	0.00
392	2	0.17	0.05	32.80
393	2	3.42	0.02	76.40
394	2	3.58	0.00	57.55
395	2	0.08	0.05	1.01
396	2	0.33	0.00	5.28
397	3	0.25	0.00	4.15
398	3	0.00	0.00	0.00
399	3	0.00	0.00	0.00
400	3	1.08	0.00	36.69
401	3	5.83	0.02	94.25
402	3	5.42	0.01	158.08
403	4	0.17	0.00	23.00
404	4	0.00	0.00	0.00
405	4	0.17	0.00	2.14
406	4	0.67	0.01	10.43
407	4	0.08	0.11	8.42
408	4	0.08	0.00	1.01



Table 2. Average % cover and number of invasive species detected in each plot in Cycle 1. Cycle 1: 2019 – 2024. Plots with at least 10% average cover or 4 or more invasive species present are in yellow.

PlotCode	PanelCode	Average % Cover	Number of Species per Plot
		Cycle 1	Cycle 1
385	1	0	0
386	1	0	0
387	1	0	0
388	1	0	0
389	1	0	0
390	1	0	0
391	2	0	0
392	2	0	0
393	2	0	0
394	2	0	0
395	2	0	0
396	2	0	0
397	3	0	0
398	3	0	0
399	3	0	0
400	3	0	0
401	3	0	0
402	3	0	0
403	4	0	0
404	4	0	0
405	4	0	0
406	4	0	0
407	4	0	0
408	4	0	0



Table 3. Number of plots out of 24 where exotic species were detected. Cycle 1: 2019 – 2024. Priority invasive species capable of dominating Eastern US forest habitats are highlighted in yellow.

No exotic species observed in Cycle 1.



Table 4. Invasive plant and pest/pathogen early detections in Assateague Island National Seashore observed in the most recent census of each plot. Coordinates are in UTM NAD83 Zone 18N.

Plot	Year	X	Y	Latin Name	Common Name	Type
ASIS-388	2019	482383	4215963	<i>Dendroctonus frontalis</i>	southern pine beetle	pest
ASIS-389	2019	483562	4221438	<i>Dendroctonus frontalis</i>	southern pine beetle	pest



Table 5. List of tree species included in Maps 3 and 4 and how each was displayed.

Latin Name	Group: Map 3. Regeneration	Group: Map 4. Tree Canopy
<i>Acer rubrum</i>	<i>Acer rubrum</i> (red maple)	<i>Acer rubrum</i> (red maple)
<i>Amelanchier</i>	<i>Amelanchier</i> spp. (serviceberry)	-
<i>Amelanchier canadensis</i>	<i>Amelanchier</i> spp. (serviceberry)	<i>Amelanchier</i> spp. (serviceberry)
<i>Diospyros virginiana</i>	<i>Diospyros virginiana</i> (American persimmon)	-
<i>Ilex opaca</i>	<i>Ilex opaca</i> (American holly)	<i>Ilex opaca</i> (American holly)
<i>Liquidambar styraciflua</i>	<i>Liquidambar styraciflua</i> (sweetgum)	-
<i>Magnolia virginiana</i>	Other native canopy spp.	Other native canopy spp.
<i>Nyssa sylvatica</i>	-	<i>Nyssa sylvatica</i> (black gum)
<i>Persea</i>	Suncanopy	-
<i>Pinus taeda</i>	<i>Pinus taeda</i> (loblolly pine)	<i>Pinus taeda</i> (loblolly pine)
<i>Prunus serotina</i>	-	<i>Prunus</i> spp. (native cherry)
<i>Sassafras albidum</i>	<i>Sassafras albidum</i> (sassafras)	<i>Sassafras albidum</i> (sassafras)