



Slash Walls: Effective Limitation to Deer Impacts on Hardwood Regeneration

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Arnot Forest: Like much of central and western NY

- Heavily forested region
- Northern and Allegheny Hardwoods
- Mixed oak & hardwoods
- 1800's agricultural landscape



FIA Plots Identify A Problem

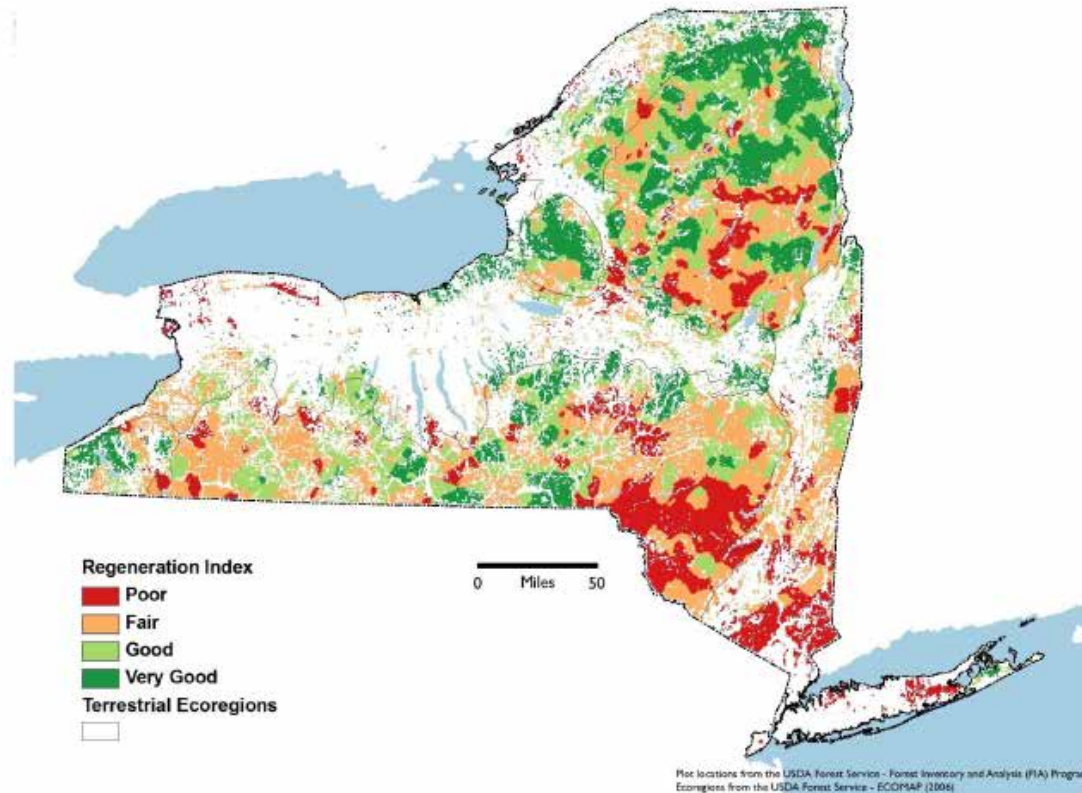


Figure 6. Predicted values for Regeneration Index of desirable timber species in New York State.

Shirer, R and C Zimmerman. 2010. Forest regeneration in New York State. The Nature Conservancy. 25 pp.
[http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/newyork/placesweprotect/easte
rnnewyork/final_nys_regen_091410_2.pdf](http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/newyork/placesweprotect/easte
rnnewyork/final_nys_regen_091410_2.pdf)



Factors Present (%) in Stands with Marginal or Failed Regeneration

	Statewide	Adirondacks	So. Highlands	Other
Deer	65	38	59	91
Interfering Vegetation	47	47	46	49
Owner Attitude	25	16	25	32
Owner Finances	21	18	29	12
Soil/Site	14	18	9	17
Forest Health	10	12	8	11

Connelly, NA, PJ Smallidge, GR Goff and PD Curtis. 2010. Foresters perception of forest regeneration and possible barriers to regeneration in New York State. Cornell University Department of Natural Resources Human Dimensions Research Unit HDRU 10-2. 37 pp. <http://www2.dnr.cornell.edu/hdru/pubs/HDRUReport10-2.pdf>

Beech Saplings Dominate the New York Understory

Species	Millions of Stems (2012)	% Change 1993 - 2007	% Change 2007 - 2012
Beech	978	24	14
Red maple	871	-5	-9
Sugar maple	749	1	-13
Ash	670	13	-1
Balsam fir	348	16	2

Widmann, R. H. et al. 2015. New York Forests 2012. USDA Forest Service Northern Research Station. Resource Bulletin NRS-98

https://www.dec.ny.gov/docs/lands_forests_pdf/nyforests2012.pdf

2004 shelterwood "seed cut"
2009 broadcast herbicide
2016 undesirable species dominate

Deer browsing removes desirables and favors undesirables



Fences work



Photo credit: Gary Alt

Slash Walls

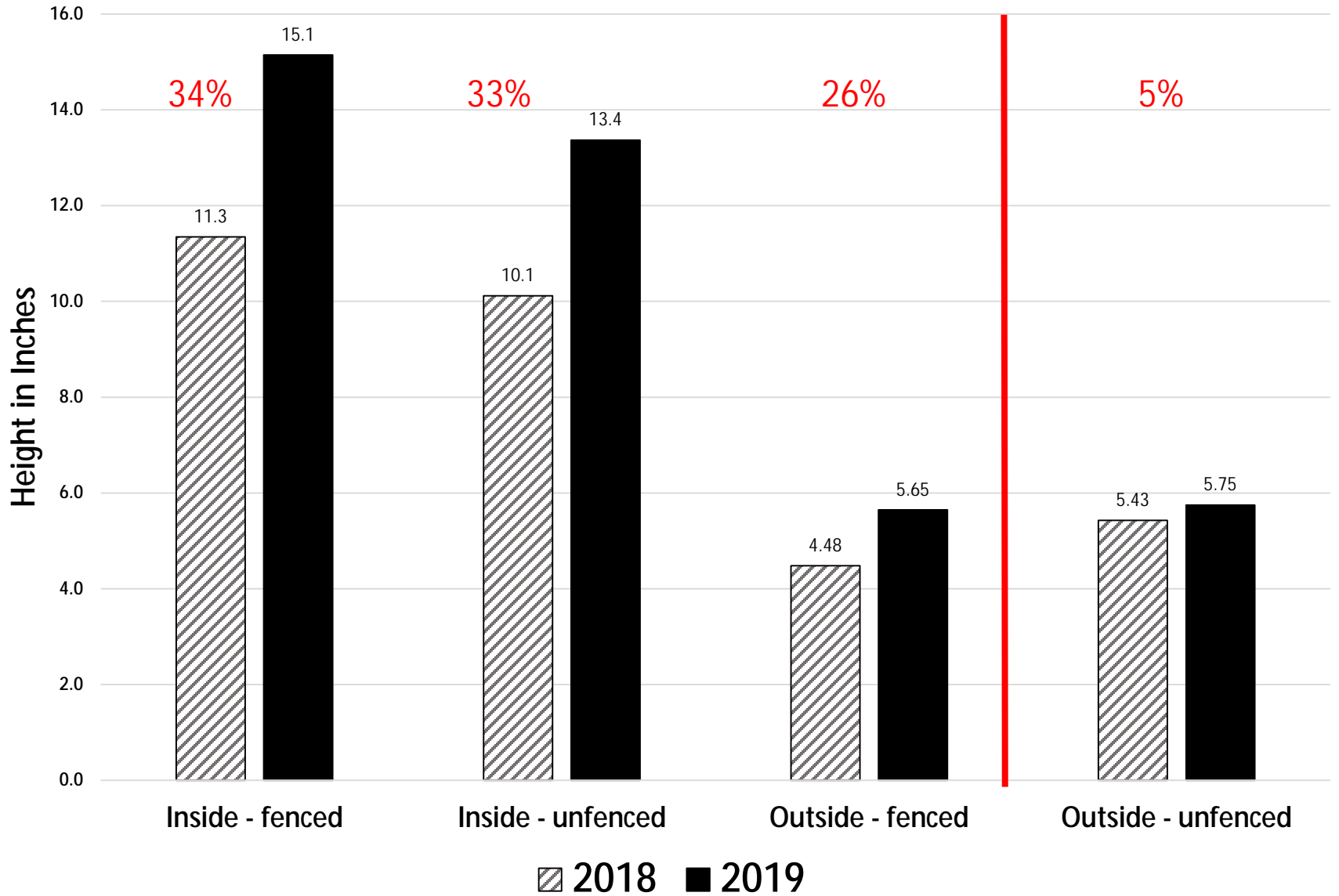


Progress to Date

- Four harvests of 10 – 75 acres and 16,000 linear feet completed in 2017.
- 130 acres completed October 2019, and 160 acres to be completed by December 2019
- *No deer, strong favorable regeneration response!*



Sugar Maple



Average Relative Height Growth (2018 – 2019)

Species	Inside Slash Wall	Outside Slash Wall
sugar maple	33%	5%
northern red oak	73%	35%
red maple	71%	48%
black (sweet) birch	142%	136%
chestnut oak	73%	82%

Changes in Slash Wall Dimension

Hardwood (3 harvests)	Year 1 (ft)	Year 2 (ft)	Year 3 (ft)	%
width, horizontal	23	22	23	3
total height	11	9	8	-25
height to 2" dia stem	8	6	5	-28

Red Pine (1 harvest)	Year 1 (ft)	Year 2 (ft)		%
width, horizontal	26	26		2
total height	9	8		-8
height to 2" dia stem	5	5		-

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Photo by RJ Andersen, CCE Media