Cost Comparison of Five Midstory Removal Treatments

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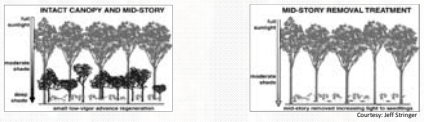
Introduction

Intermediate-shade-tolerant species (such as oaks), often cannot establish themselves under a mature hardwood forest. For this reason, thinning and harvest prescriptions have been designed to favor advanced oak regeneration.

The three-step shelterwood is one such method.

Midstory removal is step one in this process.

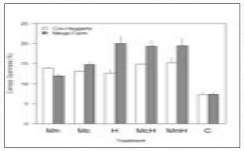


This non-commercial treatment is an investment which often intimidates woodland owners. Predicting costs, and the most suitable method, would help.

We compared five common methods of midstory removal

Before removal

After removal



Mn=Manual, Mc=Mechanical, H=Herbicide

Methods

Treatments

- Manual (Chainsaws, brushsaws)
- Mechanical (Treemower)
- Herbicide
- Manual plus Herbicide
- Mechanical plus Herbicide

Each treatment was installed at two sites:
Cox-Haggerty, Meigs Farm
Plots between 0.6 and 0.9 acres

Time, equipment, fuel, and herbicide all accounted for.

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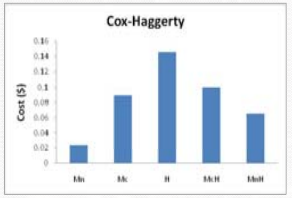
Results

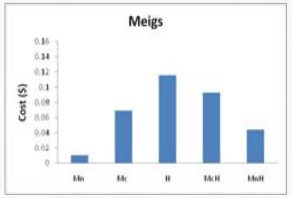
Costs at Meigs - Cox-Haggerty . Values are dollars per acre.

Treatment	Labor	Herbicide	Fuel/Oil	Equipment	Total
Manual	30 - 85	-	2 - 4	4 - 10	36 - 99
Mechanical	36 - 56	-	1 - 2	173 - 272	210 - 330
Herbicide	28 - 50	138 - 139	-	4	171 - 193
Manual and Herbicide	120 - 246	120 - 126	4 - 10	6 - 12	251 - 395
Mechanical and Herbicide	50 - 62	17 - 45	1 - 2	240 - 298	309 - 406

Discussion/Conclusion

Initial site characteristics, especially presence or absence of Amur honeysuckle, had large influence on total cost.





Cost per inches treated. Mn=Manual, Mc= Mechanical, H=Herbicide

- Per inches treated, herbicide treatment was most expensive, and the manual treatments the least
- Large mechanical equipment costs made those treatments less competitive
- Non-herbicide treatments' efficacy in question, since we have yet quantified sprouting
- Appropriate method may vary on stand structure, site, resources, and objectives.