

GREENACRES

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Tree regeneration 4 years after *Lonicera maackii* removal in a Southwest Ohio woodland



BACKGROUND

- Amur honeysuckle (*Lonicera maackii*) dominates the understory of Southwestern Ohio woodlands
- High honeysuckle density reduces plant diversity in these woodlands
- Various removal methods (e.g. cut/stump, forestry mulcher) have been used to remove honeysuckle
- The long-term impact of different removal strategies is not well understood



Question:

How do different honeysuckle management strategies affect tree seedling richness and density after 4 years?

DATA COLLECTION

- Small seedling (< 30 cm) data at four locations along a 50 meter transect (4 m² each)
- Large seedling (30-200 cm) data in a 50 x 10 m plot to the right of each transect
- Vegetative cover for all species was also collected in each 4 m² plot
- Data were also collected at an off-site control

RESULTS

- **Large and small seedling counts increased in all treatments**
- **Total tree species richness increased in all treatments**
- Nearly 50% of large seedlings 4 years later were white ash and 30% were tree of heaven
 - Both species were abundant pre-treatment, but also increased in density
- On average, 4 species were observed post-treatment that were not initially present
- Small seedlings had greater increases in bull hog treatments than in cut/stump treatments
- Large tree of heaven seedlings were initially present in one treatment and were six times greater in number post-removal

TREATMENTS (Original removal occurred in fall 2019)



1 Mechanical removal (bull hog mulcher) + glyphosate foliar spray (*following spring*)

2 Mechanical removal (bull hog mulcher) + glyphosate foliar spray (*following fall*)





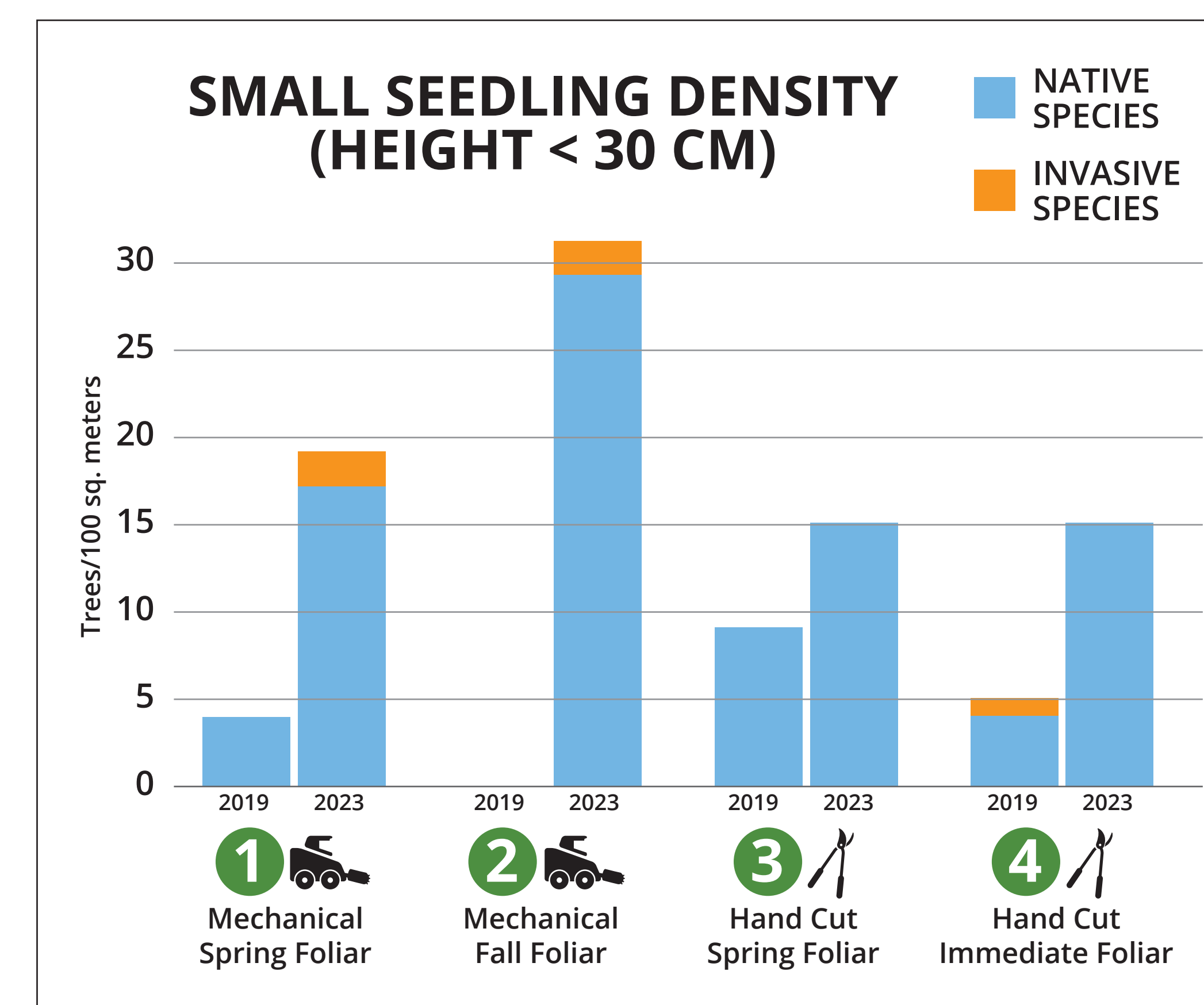
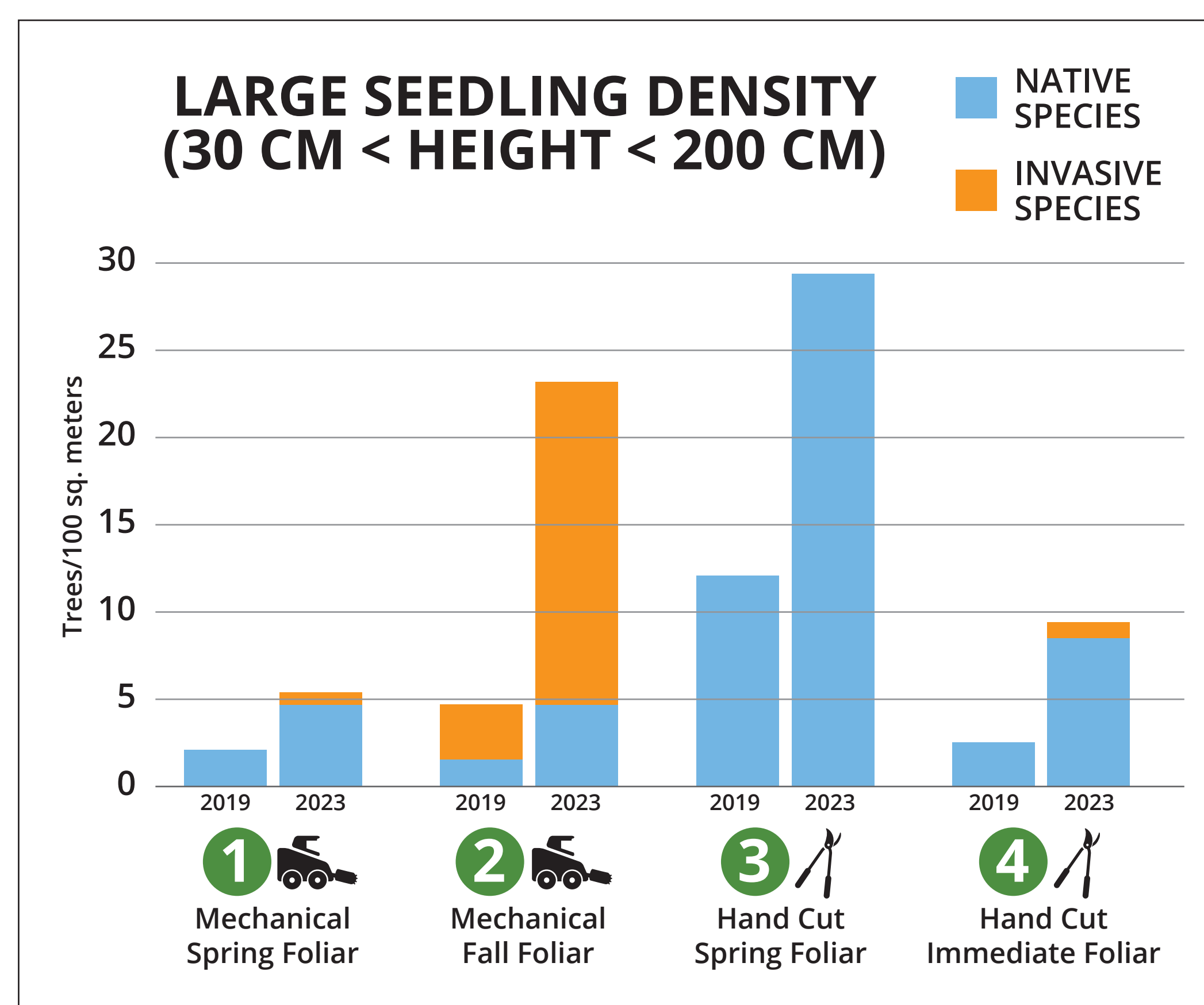


3 Hand cutting to base + glyphosate foliar spray (*same day*)

4 Hand cutting to base + glyphosate foliar spray (*following spring*)







2023 SEEDLING COMPOSITION

RELATED TO ALL TREATMENTS

Species	% of Large	% of Small
White Ash	47	1
Tree of Heaven	29	6
Paw Paw	7	0
Boxelder	5	4
Bitternut Hickory	4	45
Hackberry	4	3
Honey Locust	1	1
Black Locust	1	0
Am. Elm	1	15
Am. Sycamore	1	0
Black Walnut	1	0
Black Cherry	0	15
Sugar Maple	0	6
Shingle Oak	0	3
Holly	0	1

Discussion

Removal of honeysuckle was successful in increasing seedling density, regardless of method

Small seedlings in mechanical treatments increased, possibly because of local site conditions (e.g. better conditions for growth and removal of herbaceous competition)

Other invasive vegetation increased in cover following honeysuckle removal