Update on Electric Weed Control Research in Atlantic Canada



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Electric Weed Control Demo Day

July 22 2026

Electric Weeding Demo Day

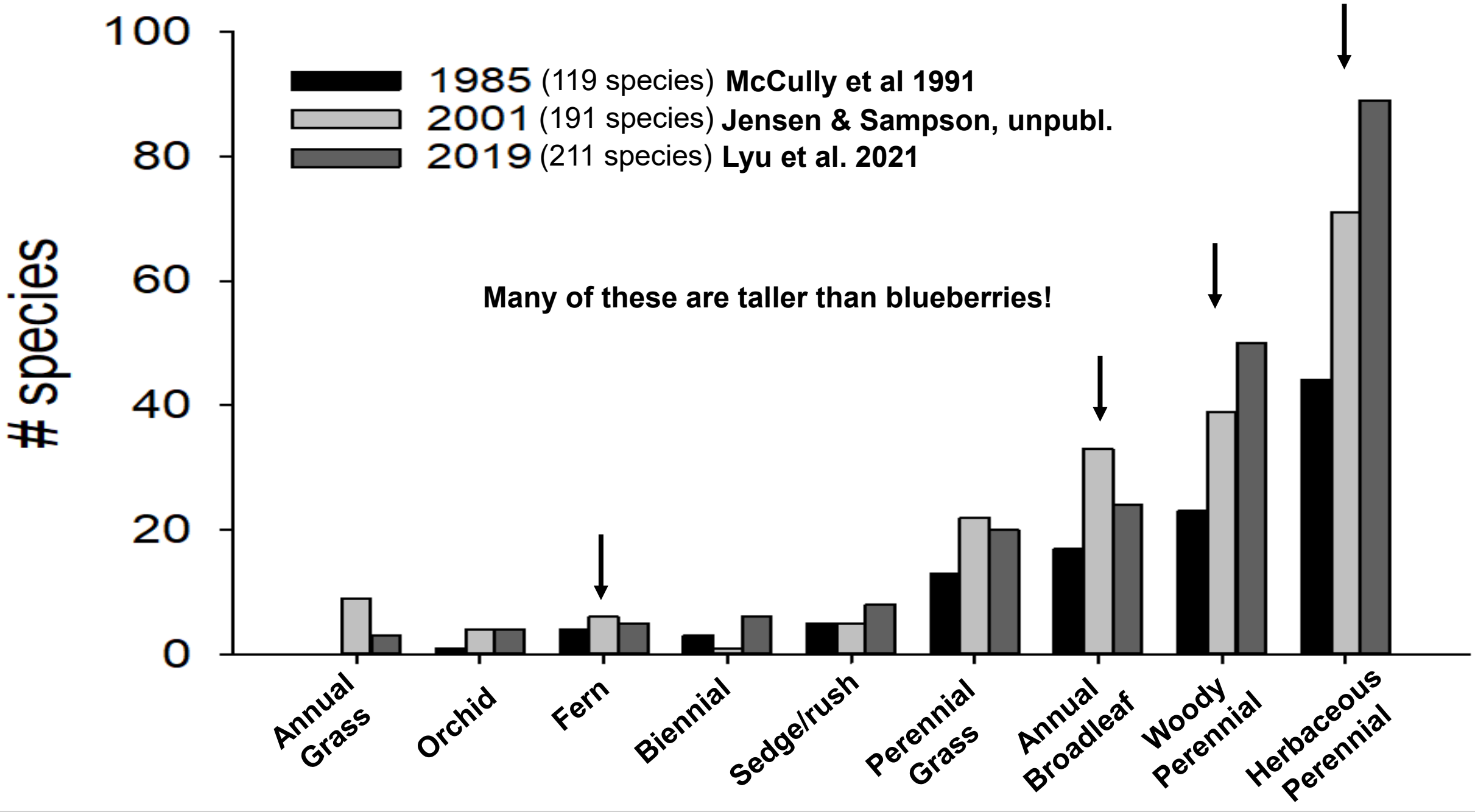
July 2026

- Weed zapper experience in wild blueberry in Nova Scotia
  - Scott, Travis, Chloe, and Spencer
- Weed zapper experience in potato, rutabaga, carrot, and cover crop termination
  - Andrew and Nicole








100
80
60
40
20
0
species
1985 (119 species) McCully et al 1991
2001 (191 species) Jensen & Sampson, unpubl.
2019 (211 species) Lyu et al. 2021
Many of these are taller than blueberries!
Annual Grass
Orchid
Fern
Biennial
Sedge/rush
Perennial Grass
Annual Broadleaf
Woody Perennial
Herbaceous Perennial

Tall weeds suitable for electric weed control in wild blueberry



Tall weeds suitable for electric weed control in wild blueberry



Tall weeds suitable for electric weed control in wild blueberry









Traditional approaches to controlling tall weeds

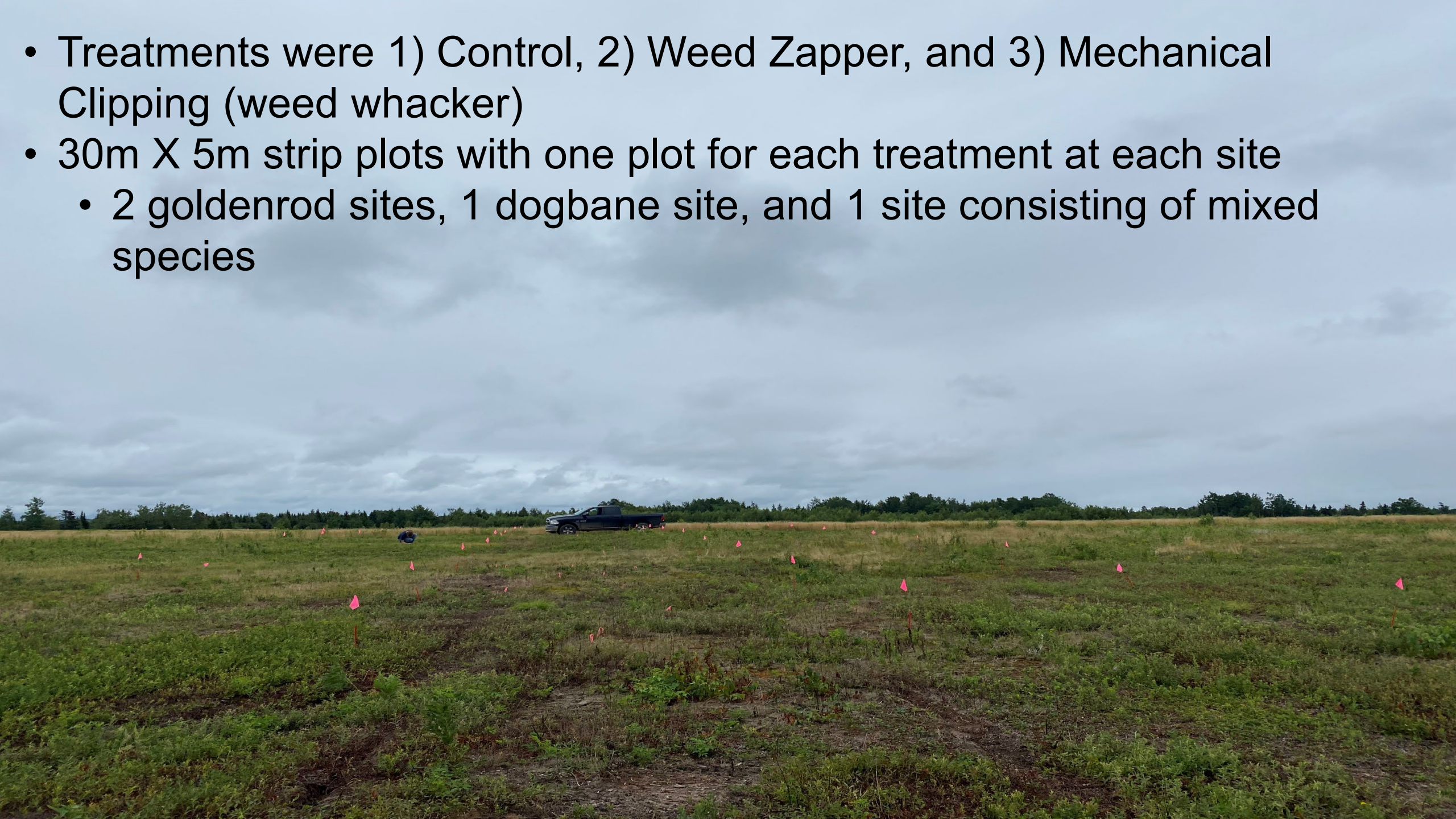
Electric Weeding Demo Day

July 2026

- Weed Zapper Annihilator 12R30 with a 4.6 m (15’) rigid copper boom
  - 155 kW generator
  - 15,000 Volts at the boom
- Case IH Maxxum 145 (145hp)
- Unit is powered by PTO
  - 1000 rpm and 120 hp
- Two coulters are used for electrical grounding
  - At least one must be in contact with ground at all times
- Travel speed can vary based on terrain and weed infestation
  - We used around 6km hr^{-1}



- Treatments were 1) Control, 2) Weed Zapper, and 3) Mechanical Clipping (weed whacker)
- 30m X 5m strip plots with one plot for each treatment at each site
  - 2 goldenrod sites, 1 dogbane site, and 1 site consisting of mixed species

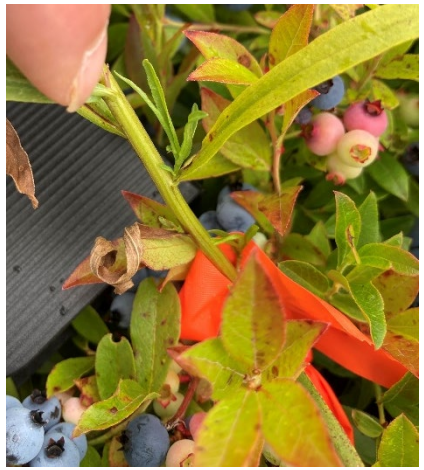


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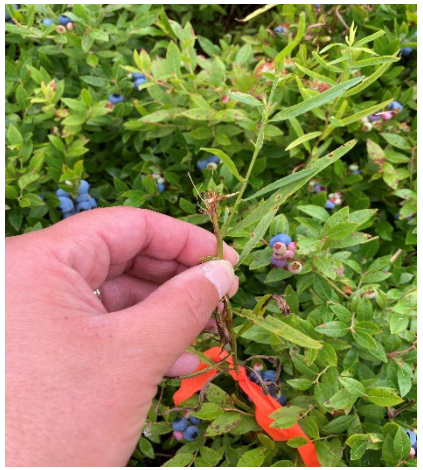


Data Collection

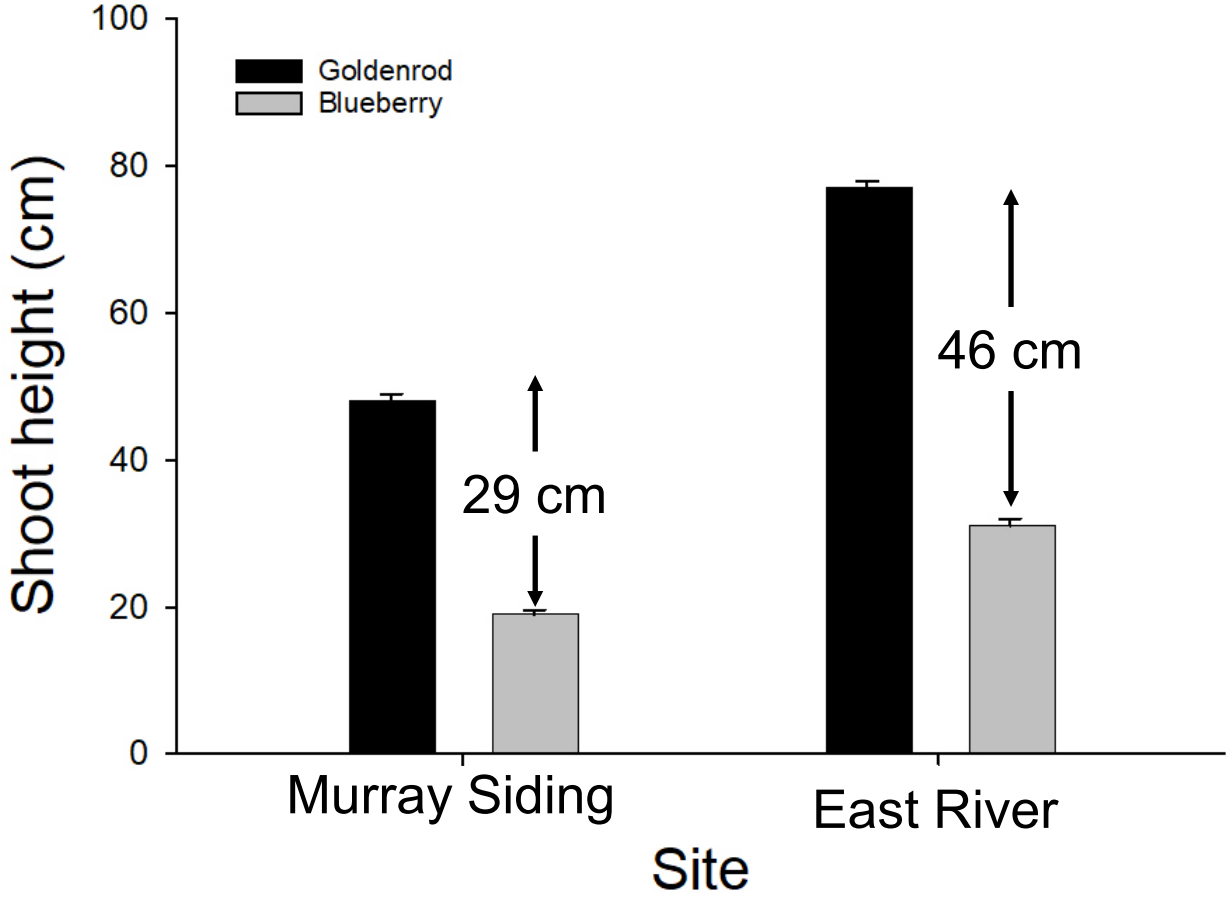
- Prior to treatment application
  - Density of target weed
    - ~20 1m^2 quadrats per plot
  - Weed and blueberry height
    - 25 individual shoots per plot
  - Tagged plants for injury ratings and branching

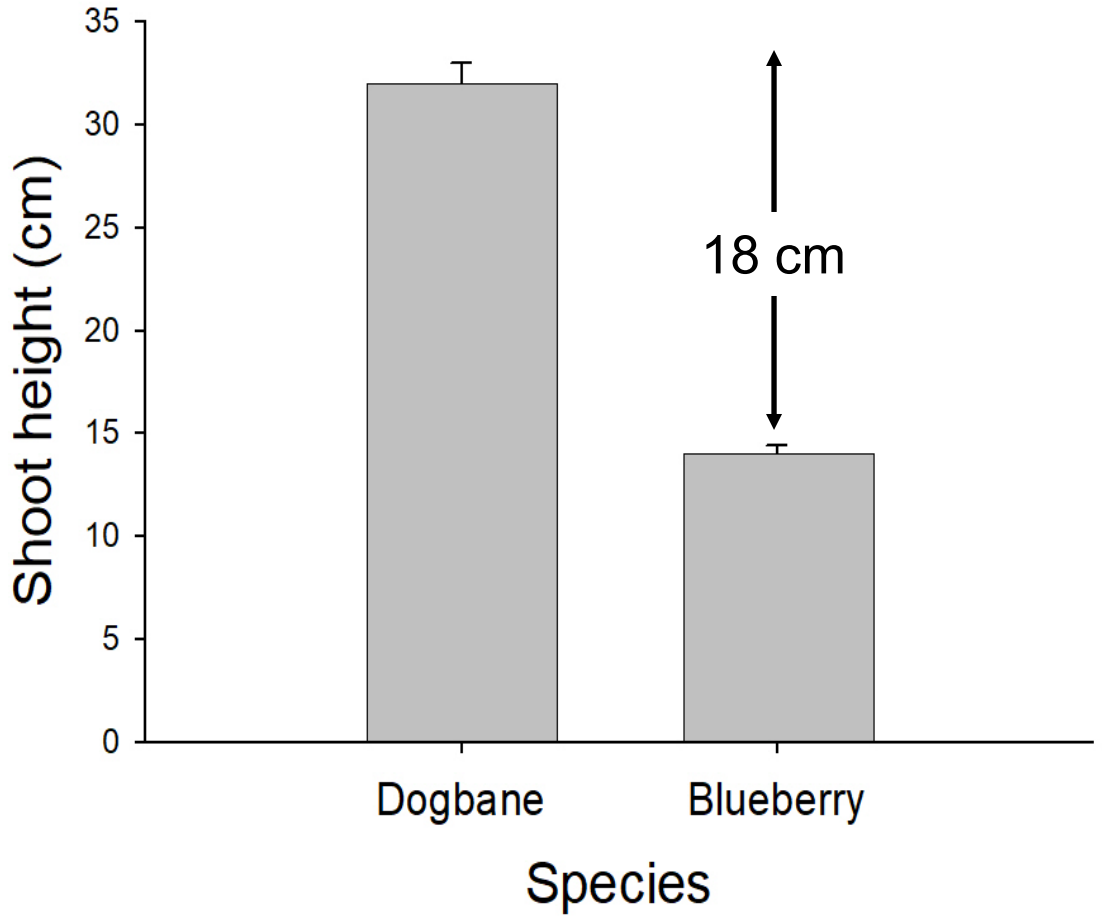


- After treatment application
  - Density of target weed
    - ~20 1m^2 quadrats per plot
  - Visual injury ratings of tagged plants
  - Branch number of tagged plants



Crop and weed height differential at application





10 – 15cm differential recommended (Weed Zapper Manual)

Weed Zapper





Cutting



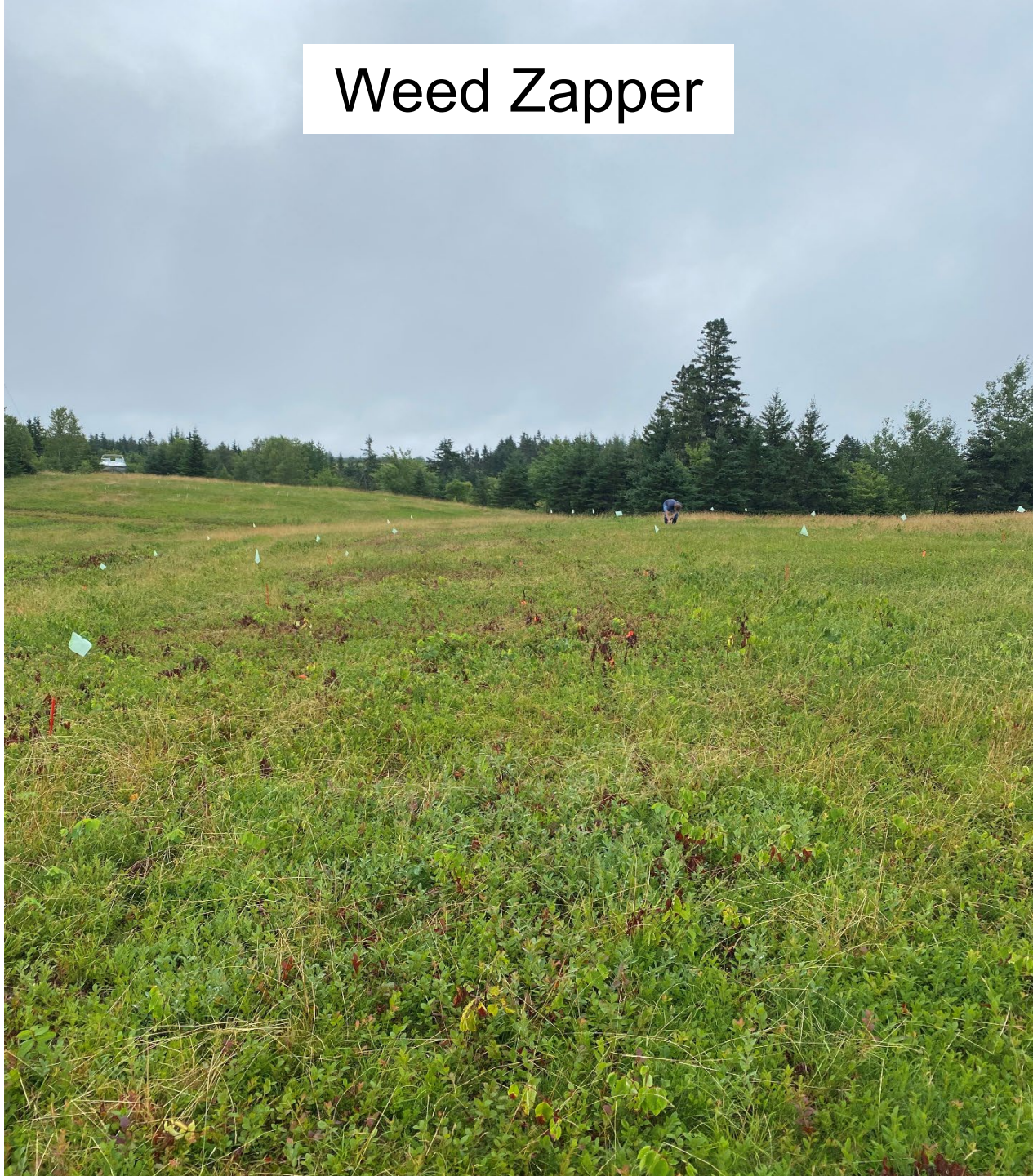



Control:
24 shoots m²
Weed Zapper:
3 shoots m²
Clipping:
16 shoots m²




Weed Zapper
Control
Clipping

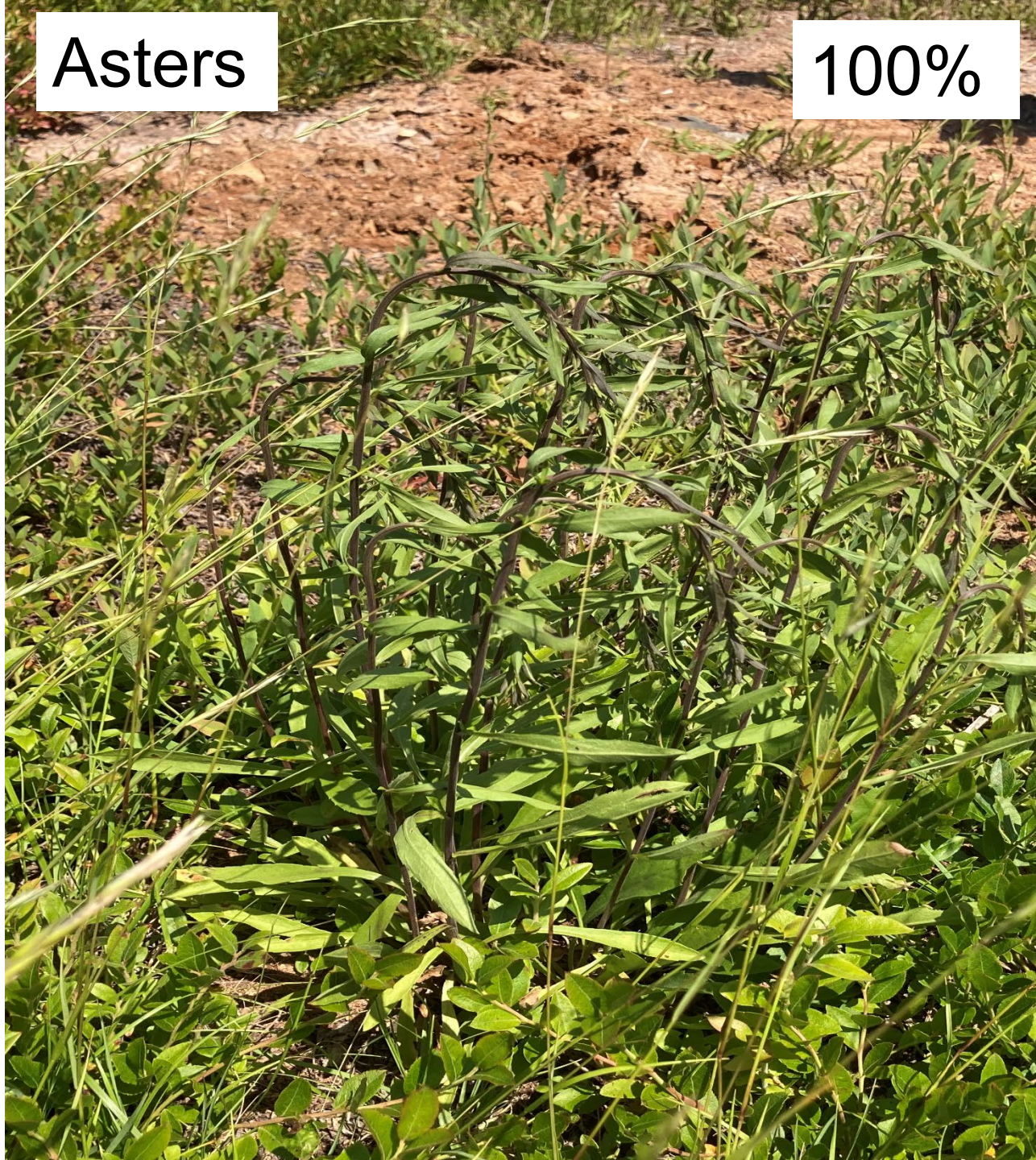

Control


Weed Zapper


Bracken fern
60 - 90%


Bracken fern
60 - 90%


St. John’s Wort
70%


Asters
100%

Canada fleabane

100%




<25%
Black bulrush


Grasses
<10%

Zapping goldenrod in a carrot field in NS



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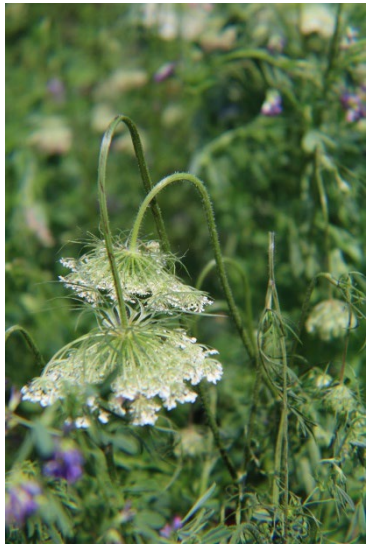


2025













Grower Fields and Demos





2025



Experimental Plots

- 2-year project
- Potatoes, carrots, beets, rutabagas
- Data analysis ongoing for year 1
- Treatments: EWCx1, EWCx2, inter-row cultivation + EWC, wick weeding, wick weeding +EWC

Data Collection

- Crop yield
- Weed heights, biomass, and seed viability

Untrt

Tube 2x

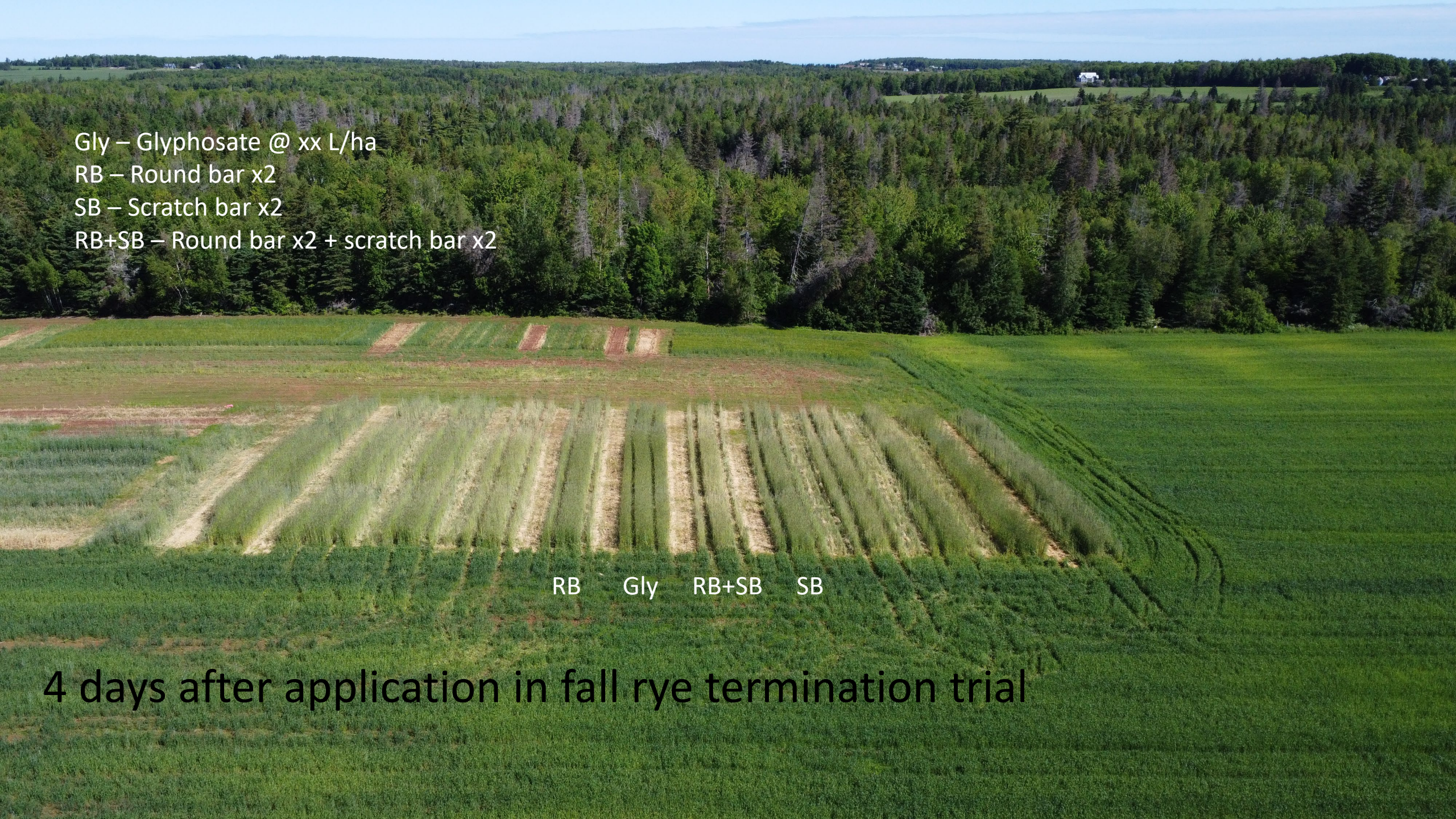
1X

Scrapper 2x

1X

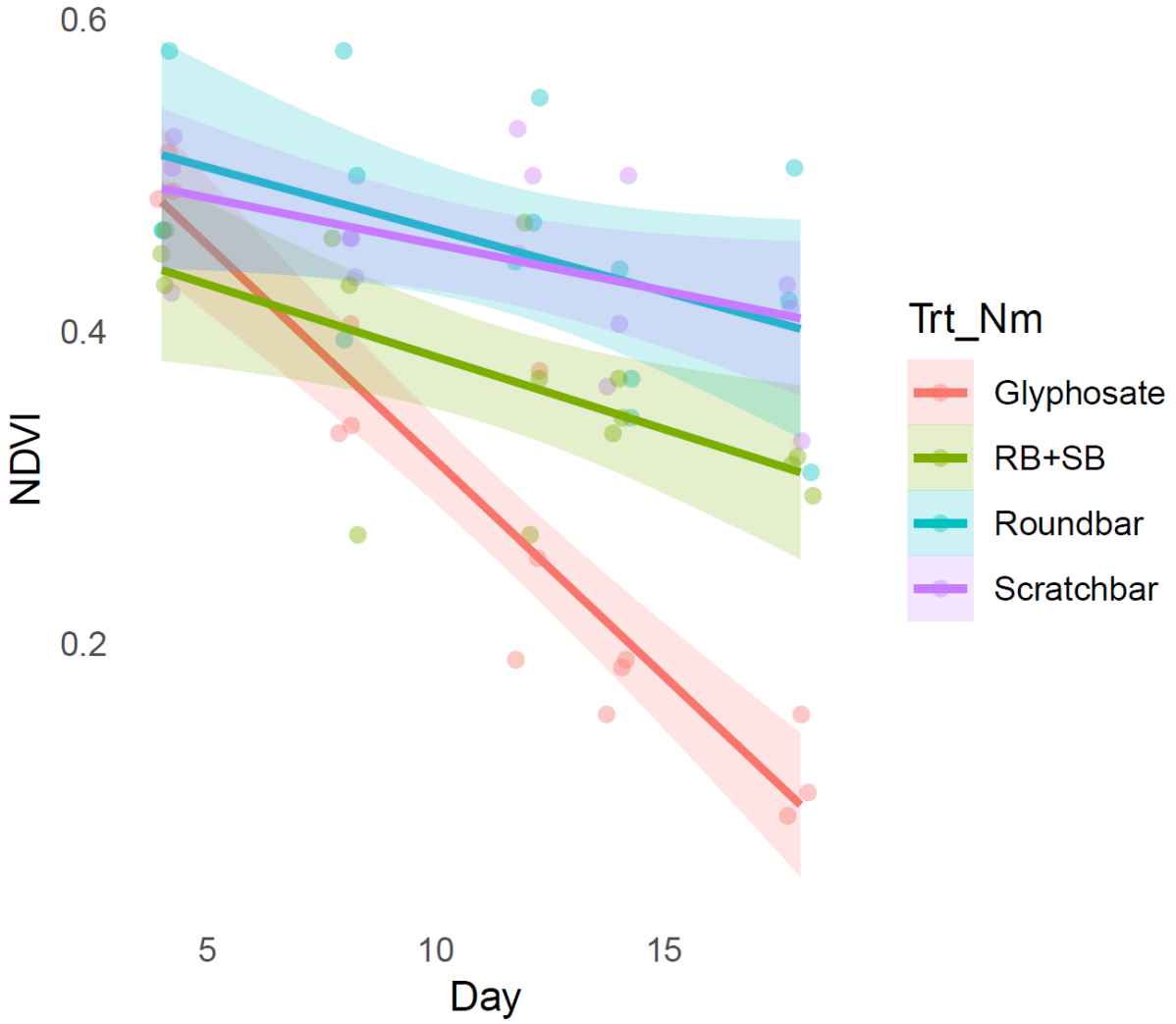


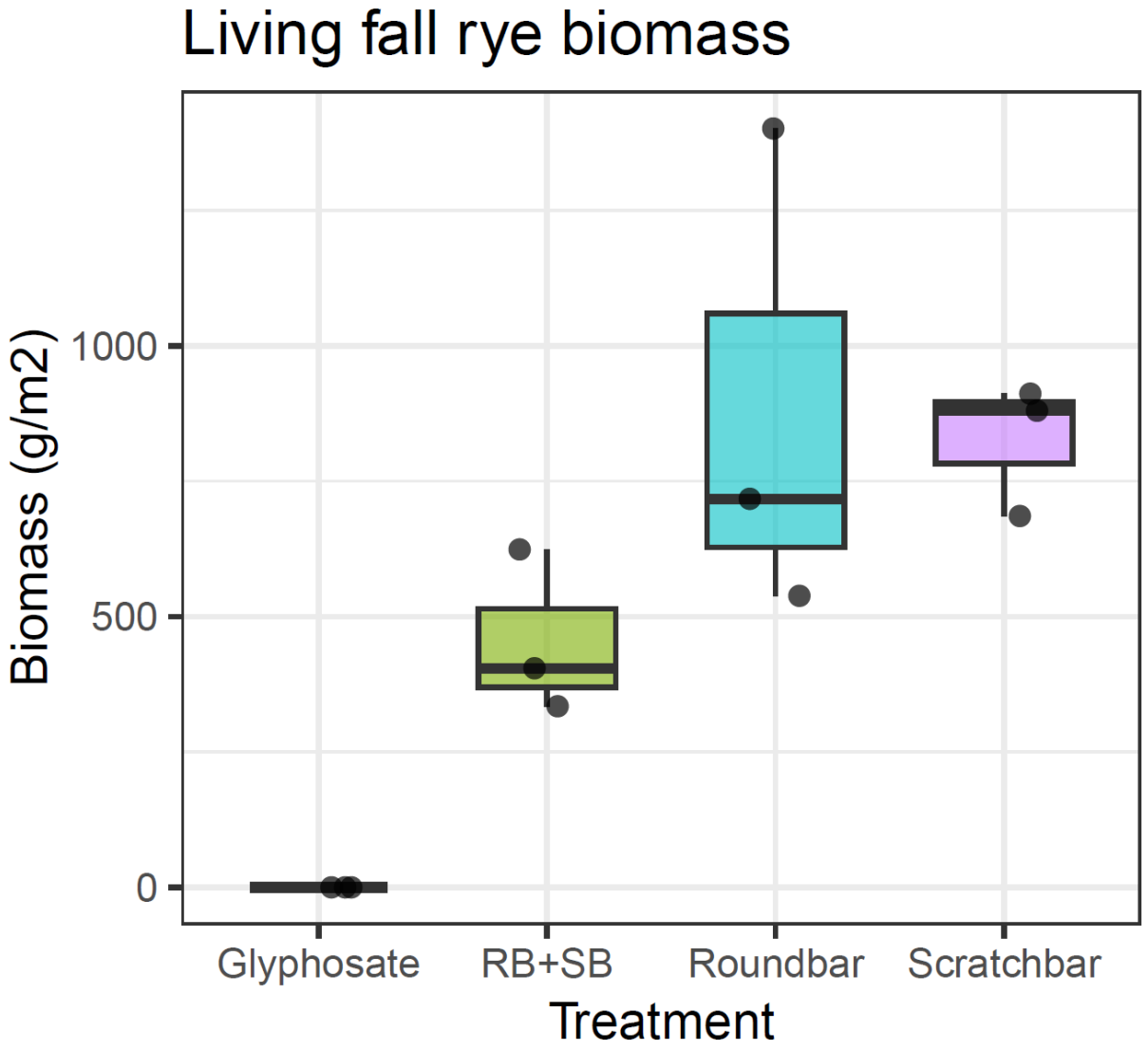
Sheperd purse, 1 week after treatment 6-July



4 days after application in fall rye termination trial

Four passes was more effective than two but still not as effective as glyphosate





28 DAA

Weed Zapper

Glyphosate



Summary

- Weed Zapper Annihilator 12R30 with a 4.6 m (15’) rigid copper boom caused >80% injury to goldenrod and spreading dogbane shoots
- The unit was also effective on bracken fern shoots and fleabane
- Generally weak on black bulrush and grasses
- Carrot grower feedback was very positive
  - Probable future investment
- Lots of opportunity to tweak settings, evaluate multiple passes, etc. in future work

Summary

- Huge potential for electric weeding in many crops in Atlantic Canada
  - Potato, rutabaga, carrot, and other hort crops
- Role in cover crop termination uncertain at this point





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- Genevieve, Guillaume, and Dominique
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Wild Blueberry PRODUCERS ASSOCIATION OF NOVA SCOTIA

NSERC CRSNG

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Thank You!

