



PORTLAND
PARKS & RECREATION

Healthy Parks, Healthy Portland

Holly Control Through Foliar Application: A Trial

Portland Parks & Recreation

City Nature East – City Nature Natural Areas

Collaboratively steward urban natural areas for people, wildlife and ecosystem health while providing safe, sustainable access to nature.



Holly (*Ilex aquifolium*) is an invasive species and negatively affects habitat.

Difficult to Control!

- Manual holly removal (cut stump) has been a job task for me since 2007.
- Personally removed 1000+ trees by hand from 2007-2010 on Protect the Best Program.





A picture of the author manually removing holly in 2008.



Each individual stem must be treated with herbicide.



Get every last stem!

The Traditional Approach

- Removing holly manually (cut stump method) traditionally involves:
 - Cutting every single piece of green growth.
 - Spraying every cut stem still in the ground.
 - Making sure every cut stem, especially the green growth isn't touching wet ground.
 - Retreatments in about a year to make sure you got every single stem.
 - Second retreatment in about two years to ensure complete control.
 - It is very labor intensive!

Let's Try Something Different!

- The meticulous manual labor often led me to ask:
“Why can't we just spray this plant like blackberry, ivy, or any other plant!?!”
- Now you can!

Foliar Spray of Holly Trial



The Eureka!!!

- When my coworker Dan Medic and I were spraying Blackberry and Canada Thistle we tank mixed two herbicides.
- We sprayed a few small hollies to see if it would be effective.
- It proved very effective.
- We tried it again on a larger number of hollies, and on larger plants. It was very effective.
- We were urged to do a trial by Steve Lower, staff Ecologist.

Locations and Timing

- One Portland Parks and Recreation property was chosen in NE Portland, Wilkes Creek Headwaters, the location of a former holly farm!
- Three locations were selected: full sun, partial sun, full shade.
- Three applications were made in September 2022: the 13th, the 21st, and the 26th.
- Data was collected a year later, and in some cases, two years later.



Method

- 22 hollies were measured.
- Max height was 110" and max width was 571"
- Diameter and stems were measured.
- Before photos were taken.
- Each plant was sprayed with a backpack sprayer
 - Stems
 - Leaf top
 - Leaf bottom



Products and Rates

Vastlan	1.6% (2oz/gal)
Milestone	0.125% (0.16oz/gal)
SYL-TAC-EA	0.39% (0.5oz/gal)



ADJUVANTS
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Results: Before and After Pictures

After photos were taken in September 2023, and a few in 2024.

To assess if full plant death was achieved, the following after photographs include:

- The stems and leaves.
- Cambium cuts.
- Roots.



65

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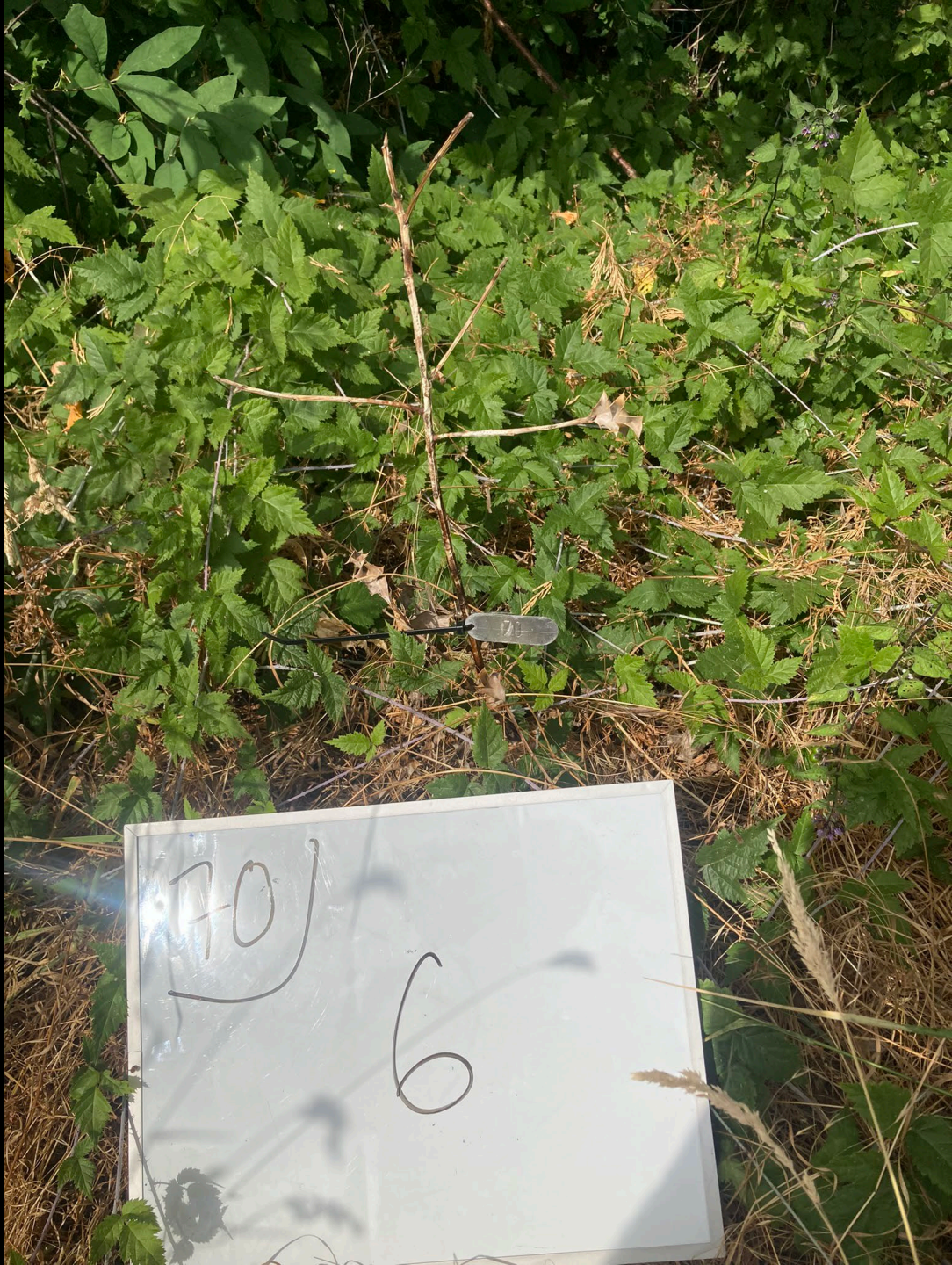
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3

















3 | 19







2022

20



2023

84
20

2025



2025



2022

85
21



2023

85
21



2025





86
22



86)
22

Results in One Application.

Zones	# of plants in each zone	Percent controlled
Full sun	12	100%
Partial shade	6	100%
Full shade	4	100%

Closing Thoughts

- There was a lot of variability in the length of time it took for the plants to die.
- Plants were not especially large, but I believe that it is worth trying on larger examples.
- Control only took one application and the application was very easy.
- Retreatments are almost nonexistent.
- Products have relatively low off target effect, and very low residual effects.
- Some ivy was sprayed in one of the applications. It is was also effectively controlled.
- Products can be sprayed in riparian zones and are stream safe.

Conclusions and Desired Outcome

- Holly is difficult to control.
- This trial shows, with 22 hollies, that 100% control was achieved with significantly less effort than with traditional methods.
- I hope that you can use this mix and successfully use fewer resources to remove holly.

Questions, Feedback, Funny Jokes?

If you have any questions, or want to know more, please contact me.
I am happy collaborate.

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Thank you!

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