Invasive Shrub Management Field Day- Prentice Park, Ashland 2024

UW-Madison Renz Weed Science Lab

https://renzweedscience.cals.wisc.edu/

Objective: Demonstrate effective invasive woody shrub management techniques using herbicides on invasive, common and glossy buckthorn.

Site Description: Management demonstrations using herbicides (cut surface, basal bark, and foliar) were applied in a portion of Prentice Park in Ashland, Wi with degraded woodlands that are heavily invaded with common and glossy buckthorn. *Buckthorn plants were a mixture of plants 3-6 ft tall and greater than 6 ft tall with ½ having multiple stems.*

Application: Foliar applications were made by 4-Control in *fall 2022* with equipment that was estimated to apply product at 50 gallons per acre. Cut surface and basal bark applications were applied by Travis Wilson in *fall 2023*. Herbicides were applied to the target area (base of tree or cut surface) with the designated herbicide to result in minimal off-target herbicide movement.

TREATMENT DETAILS AND RESULTS

Foliar Herbicide Treatment: Shrubs were treated with herbicide on 10/06/2022. Leaves of both common and glossy buckthorn were beginning to senesce, *so the application was NOT at the optimal timing.* While initial control the following spring was good, non-selective herbicides (Roundup/Polaris) killed all understory plants. By June of 2024 (~18 months after treatment), differences in growth of understory plants were still apparent among treatments.

Cut Surface Herbicide Treatment: Twenty-five buckthorn trees were cut and treated with herbicide on 10/10/2023 at a cost of $0.14-0.27 per tree. At that time, trees still had leaves, but plants were beginning to senesce. This timing is considered appropriate as cut surface can be applied year-round. At 248 days after treatment (~8 months), all treatments resulted in >95% mortality of both species (only one treated stump was not killed). While a small amount of herbicide was used with this method, extra time was required to cut and remove debris resulting in more expensive costs compared to other treatments.

Cut Surface treatments common and glossy buckthorn (mixed with Basal Bark Blue)					
Treatment	Rate	% Mortality 248 DAT (June 2024)	Labor cost per shrub	Product cost per shrub	Total cost per shrub
Remedy Ultra	20% v/v	96%	$0.26	$0.01	$0.27
Arsenal Powerline	8% v/v	100%	$0.20	$0.01	$0.21
Method	10% v/v	100%	$0.11	$0.04	$0.14

Basal Bark Herbicide Treatment: Twenty-five buckthorn trees were treated with herbicide on 10/10/2023 at a cost of $0.16-0.22 per tree. At that time, trees still had leaves, but plants were beginning to senesce. This timing is considered appropriate as basal can be applied year-round as long as the bark is dry and herbicide solution doesn't freeze in container. At 248 days after treatment (~8 months). Treatments showed variable responses, with herbicides providing modest mortality (17-100 common buckthorn; 13-74 glossy buckthorn). The rates of Remedy Ultra (triclopyr) used are considered low by most contractors (they recommend 20-25%) but we have observed effective results with smaller buckthorn (see Grady Tract buckthorn story map). While plants didn't die from treatments they were effectively suppressed. It is not clear how many will survive and require retreatment.

Basal bark Herbicide treatment on common + glossy buckthorn (mixed w Basal Bark Blue)					
Treatment	**Rate**	**% Mortality 248 DAT (June 2024)**	**Labor cost per shrub**	**Product cost per shrub**	**Total cost per shrub**
Remedy Ultra	5% v/v	60%	$0.15	$0.01	$0.16
Remedy Ultra	10% v/v	36%	$0.16	$<0.01	$0.16
Method	10% v/v	50%	$0.18	$0.04	$0.22

Figure 1: Comparison of effectiveness of basal bark and cut surface applications 6/14/25 (8 MAT)