



Backpack sprayer



EZ-Ject lance



Knotweed injector



Cut-stump treatment

HANDHELD TOOLS

CHEMICAL CONTROL

It is the explicit goal of this IRWM plan to minimize the use of herbicides whenever practicable, while shifting roadside vegetation to natural, self-sustaining, site-appropriate plant communities. Activities that create bare ground in the course of controlling weeds will be avoided, or be limited in duration, to prevent reinvasion by other weed species. Revegetation of bare ground with desirable plants will be promoted wherever opportunity exists. Herbicides may be used in conjunction with other practices, including biological and physical.

No broadcast treatments with mechanized equipment are being considered.

Spot, foliar treatments with backpack sprayers will be the most commonly used application method. More selective, hand held equipment (such as wick applicators or injectors) or methods (such as cut stump), will be used as warranted by site conditions. Spot treatments reduce potential for offsite chemical drift. Herbicide applications to any particular site will be limited to one or two per season. Application of herbicides is in accordance with WSDA standards and chemical labels. Licensed applicators will oversee all applications.

Herbicide Selection Process

The chosen products are effective on known roadside weeds, offer the greatest weed selectivity, maximize worker and public safety (no wait, access when the spray has dried), and pose the lowest risk for wildlife and the environment.

- **EPA Approved for Roadside Use** -- All herbicides used by Clallam County are currently registered by the U.S. Environmental Protection Agency (EPA) and the Washington State Department of Agriculture (WSDA) and fully labeled for use on roadsides.
- **Selectivity** – Some products target broadleaf weeds, allowing grass to colonize space previously occupied by broadleaf weeds. The grass herbicide controls weedy grasses, useful in a mixed plant community.
- **Human and Environmental Safety** – Used correctly, herbicide products chosen for this program are relatively non-toxic to humans and wildlife. Some are labeled for aquatic use so inadvertent occurrence in water is anticipated to have minimal effects on aquatic organisms. Most are labeled for use on grazed areas such as range and past and use in maintaining wildlife habitat.

Herbicide Product List

AquaNeat® (aquatic formulation glyphosate)
 Element® 3A (aquatic formulation triclopyr)
 Fusilade II® (fluazifop-P)
 Milestone® (aquatic formulation aminopyralid)
 Polaris® (aquatic formulation imazapyr)
 Transline® (clopyralid)
 WeeDestroy AM-40® (aquatic formulation 2,4-D)

Selected Herbicide characteristics

<u>Chemical Name</u> <u>Product Name</u>	<u>Selec- tive</u>	<u>Aquatic Sites</u>	<u>Target Weeds</u>	<u>Comments</u>
<u>2,4-D</u> WeeDestroy AM-40	✓	✓	Broadleaf	Inexpensive, often used in mix; short residual
<u>Aminopyralid</u> ¹ Milestone	✓	✓	Broadleaf	Moderate residual may help suppress seed germination; use at very low rates
<u>Clopyralid</u> Transline	✓		Broadleaf	Very selective; will not affect many native and desirable plants; moderate residual; use at low rates
<u>Fluazifop-P</u> Fusilade II	✓		Grasses	For dry sites; reed canary-grass and annual grasses
<u>Glyphosate</u> AquaNeat		✓	All weeds	Minimal to no residual; protect desirable vegetation
<u>Imazapyr</u> Polaris		✓	All weeds	Long residual; protect desirable vegetation
<u>Triclopyr amine</u> Element 3A	✓	✓	Broadleaf, shrubs	Moderate residual

¹Registered as a reduced risk pesticide under the EPA reduced risk pesticide program

Note: A number of studies have shown non-synthetic products (or “natural”) are considerably less effective for controlling weeds, especially biennials or perennials, than synthetic ones. However, three of these products, acetic acid, clove oil, and limonene are the subject of an on-going study for control of the annual weed, herb Robert. Pending study results in 2016, one or more of these herbicides may be added to the herbicide product list for control of this or other annual weeds.

Adjuvants are compounds added into an herbicide mix to improve efficacy. Adjuvants include marker dyes, which are visible indicators of freshly treated weeds. **Washington State and European countries require environmental toxicology data on adjuvants.**

No products containing polyethoxylated tallowamine (POEA) or nonylphenol ethoxylates (NPEs) will be allowed for use in this program. Adjuvants with low toxicity to wildlife include modified seed oils. Liberate®, Competitor®, DyneAmic®, and Agri-Dex® (all aquatic formulations) are brand names of some adjuvants with low toxicity that have been selected for use in this program.

Research is developing on this subject and will be regularly added to updates for this program.

Adjuvants used to enhance herbicide effectiveness

<u>Adjuvants</u>	<u>Aquatic use</u>	<u>Treatment effects</u>	<u>Comments</u>
Competitor - vegetable oil Agri-Dex, -crop oil concentrate Dyne-Amic - nonionic surfactant Liberate - fatty acids	✓	Increases herbicide uptake	Used at low rates
Blazon - marker dye Highlite - marker dye	✓	No active effect	Low rates, highlights recently sprayed weeds; washable

