

CLALLAM COUNTY ROAD DEPARTMENT Annual Report 2022



Biological



Physical



Chemical



Cultural



Preventative



Pollinator
Friendly

Prepared by **Clallam County Noxious Weed Control Board**

Available online: <https://www.clallamcountywa.gov/1042/Roadside-Vegetation-Management>

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EXECUTIVE SUMMARY

Program Goal:

This program ensures Clallam County complies with noxious weed laws of Washington State. The goal of this project is to shift roadside vegetation to natural, site appropriate plant communities. The goal is implemented by reducing existing weed populations and preventing the establishment of new ones across the county.

Program Overview:

The Clallam County Integrated Weed Management Plan (IWM) was created to help the County efficiently comply with its noxious weed control obligations. Integrated Weed Management is a coordinated decision-making process that uses the most appropriate weed management methods and strategies, along with a monitoring and evaluation system, to achieve roadside maintenance goals and objectives in an environmentally and economically sound manner. The project identifies high priority targets to contain the worst infestations and prevent the spread of noxious weeds.

2022 Project Overview:

This year we further integrated weed management into Road Department activities. We began treatments earlier and explored new treatment options in pits. We combined weed surveys with manual control wherever possible. Our roadside treatments were observed to be effective and well received by the public. Where treatments have occurred, overall weed densities are declining. We monitored, maintained, and augmented pollinator-friendly native planting begun five years ago; we applied lessons learned, and expanded our plantings at some 2018 and 2019 sites.

2022 PROJECT ACCOMPLISHMENTS:

Program Development

- This season's treatment priorities were regulated weeds on priority 1 roads due to staff shortages during the treatment season.
- Implemented Pit Plans and surveyed and/or treated each pit, many multiple times throughout the growing season
- Expanded pollinator planting and watering program; monitored, maintained and augmented Deer Park Overpass and Old Olympic Highway/ODT projects. This has created great volunteer opportunities for the public.

County Roadside:

- Controlled a total of **88 County Roads: 53 roads** manual only, **17 roads** manual/herbicide, and **18 roads** herbicide only. **64 roads** were surveyed and determined not to need treatment in 2022.
- Controlled **26 species** over a total of **186 miles** and **176 acres**, including retreatments.
- Performed **128 treatments; 59 complete whole-road** treatments and **69 spot/retreatments**.
- Herbicide was applied on **35 individual roads** with a total of **3.88 gallons** applied over **70 miles**.
- Manually treated **85 acres** and removed **3325 plants**.
- More than **13 individuals** interacted with staff during treatments.

County Rock Sources/Spoil Disposal Sites (Pits):

- Controlled **23 County Pits: 4 pits** manual only, **15 pits** manual/herbicide, and **4 pits** herbicide only. **2 pits** were surveyed and determined to not need treatment in 2022.
- Controlled a total of **27 species**
- Performed **50 treatments: 23 initial** treatments and **27 retreatments**, over a total of **368 acres** (including retreatments).
- Herbicide was applied within **23 County Pits**, with a total of **14.7 gallons** of liquid herbicide and **0.34 kg** of dispersible granules applied over **233 acres**.
- Manually treated **49 acres** and removed **1158 plants**.

County Special Sites:

- Controlled **14 Special Sites: 3** manual only, **3** manual/herbicide, and **8** herbicide only.
- Controlled a total of **14 species** over a total of **22.5 acres**, including retreatments.
- Performed **18 treatments**, including **4 retreatments**.
- Herbicide was applied on **11 unique sites** with a total of **1.63 gallons** of liquid herbicide and **0.018kg** of dispersible granules applied over **13.4 acres**.
- Manually treated **7.6 acres** and removed **4452 plants**.

Roadside and Pollinator Plantings:

- Monitored, maintained, and/or augmented **six projects (Kugel Creek, Old Olympic Hwy/ODT, 3 Crabs Berm, Sequim-Dungeness Way/ Woodcock, Dawley Slump and Deer Park Overpass)**.
- Expanded the Old Olympic Highway/ODT planting site, adding mainly shrubs and herbaceous perennials.
- Expanded the Deer Park Overpass planting site, adding mainly herbaceous perennials.
- Incorporated **61** native shrub and forb species with sequential bloom periods.

- Planted a combined total of **10,612 plants** over approximately **6.5 acres** between the six sites.
- Coordinated with Clallam Conservation District and Master Gardeners to recruit volunteers; **6 volunteers** donated approximately **51 hours** to water the pollinator sites over 15 weeks and **9 volunteers** donated approximately **71 hours** to plant both sites over 5 volunteer events in November and December.

Program Monitoring, Evaluation and Reporting

- The Roadside Weed Monitoring Team (RWMT) assessed **22%** of roadside treatments and reported **69%** average efficacy and **77%** efficacy for weeds of emphasis treatments. **(See Appendix K).**
- Overall, herbicide treatments were determined to be **“fair”**. Treatments of weeds of emphasis were determined to be **“good”**.
- No off-target damage was found.

OBSERVATIONS AND RECOMMENDATIONS:

- Italian thistle is an aggressive Class A noxious weed whose range and seedbank has been dramatically reduced from a combination of frequent monitoring and treatments. We are continuing to monitor known infestations and surrounding areas.
- For 2023, we will be maintaining all roads at their 2022 priority category since the program was unable monitor all priority 1 and priority 2 roads in 2022. We will evaluate priority categories during the 2023 season for update the IWM plan in 2024.
- Poison hemlock growing in County pits did not respond well to early season chemical treatments.
- Retreatments on county roads are a great tool for monitoring success. Retreatments also provide opportunity for selective treatments that target specific weeds at different times of year.
- Ensuring clean materials for county projects reduces the potential for spreading noxious weeds and is our most important and effective prevention tool. Whole rock source treatments continue to reduce the weed seedbank in these areas. Due of progress in reducing the overall weed burden in our pits, treating entire pits for all noxious weeds is becoming possible.
- Adding more “Special Sites” allowed the program to focus on controlling isolated or dense weed populations and sites recommended by the public for treatment. The steady reduction of regulated weeds along many of our county roads creates more opportunity to focus on the long-term maintenance and health of these additional county lands.
- Volunteers at the Deer Park Overpass pollinator planting site greatly helped with maintenance obligations. Dedicated long term volunteers and focusing on the most visible and easily accessible sites greatly improved watering efficacy.
- Volunteer opportunities to participate in pollinator habitat enhancement at the Deer Park Overpass and the ODT Berm are a great way to increase awareness of our pollinator program and to expedite plant installation.
- Our partnership with the Roadside Weed Management Team (RWMT) allowed us to reach out to other agencies to help monitor current weed control practices and help create best management practices for reaching weed goals. In 2022, the RWMT and CCNWCB met with PUD staff about Scotch broom mowing treatments along Highway 101 west of Lake Crescent and RWMT began the first year of inventorying plant communities along that easement. The goal is to recommend alternative management practices that reduce the amount of Scotch broom that goes to seed.

PROJECT SUMMARY

Program Goal:

This program ensures Clallam County complies with noxious weed laws of Washington State. The goal of this project is to shift roadside vegetation to natural, site appropriate plant communities. To accomplish the stated goal and be a responsible steward of county owned land, the County must ensure noxious and invasive weeds are effectively and efficiently controlled. The goal is implemented by reducing existing weed populations and preventing the establishment of new ones across the county. Invasive and noxious weeds negatively impact agricultural and forestry production, property value, as well as water flow and availability. Roadsides are high priorities for control of weed species because they cross and link many adjacent properties and land uses and can act as conduits for the spread of weeds. County rock sources/soil disposal sites act as weed sources and are additional high priorities for control.

Program Overview:

The Clallam County Integrated Weed Management Plan (IWM) was created to help the County efficiently comply with its noxious weed control obligations. Integrated Weed Management is a coordinated decision-making process that uses the most appropriate weed management methods and strategies, along with a monitoring and evaluation system, to achieve roadside maintenance goals and objectives in an environmentally and economically sound manner. The IWM plan dictates that each weed problem is addressed from the perspective of all available control options and that the selected control options represent the best treatment for the long-term stability of the desired plant community.

Weed control methods include biological, chemical, cultural, physical and preventative measures. This project uses the most effective method or a combination of methods within the IWM decision-making framework to achieve greatest roadside service levels at the lowest life-cycle costs. With more than five hundred miles of country roads there are a variety of weed problems as well as control opportunities.

To successfully create the shift in roadside vegetation to natural, site appropriate communities, the project identifies high priority targets to contain the worst infestations and prevent the spread of noxious weeds. High priority targets include infestations of *regulated* noxious weeds and invasive species of special concern on roadsides, and county rock sources and spoil disposal sites (pits) that act as sources/vectors for weed dispersal. The project aims to eliminate these significant weed pressures while systematically reducing weed abundance and promoting desirable vegetation. As the project matures and the number of high priority targets is reduced the number of chemical and physical treatments will also be reduced and balanced by cultural and preventative methods.

Weed control work on the County right-of-way and pits is to be implemented by the Clallam Noxious Weed Control Board (NWCB) and through partnerships with other county entities, non-governmental agencies, and volunteers. Past partnerships included the Clallam County Road Department, WSU Extension office, Clallam Conservation District, Broom Busters, Clallam County Sheriff's Department Clallam Roadside Ecological Crew (C.R.E.W.), Olympic Discovery Trail Volunteers and the 10K Years Institute. Partnerships add efficiency and overall value to the project by promoting collaboration and public engagement, recruiting larger work forces, and reducing travel time across the county.

2022 Project Description:

In this sixth year of the IWM Program we further integrated weed management into Road Department activities. We facilitated communication between multiple departments and continued implementation of pit plans.

Understaffing, a complete staff turnover, and staff training led to a decrease in treatment productivity. The reduction in our seasonal crew was an obstacle to completing our planned work as well. The C.R.E.W. was not as operational due to COVID-19 safety restrictions which reduced resources available to the Noxious Weed Control Board to implement the roadside weed management plan. The RWMT independently reviewed treatments to assess efficacy and potential impacts. Their report with the results of their observations can be found in Appendix K. Roadside treatments were observed to be effective and overall public perception of the program was positive.

The Roadside Weed Management Team (RWMT) continues to develop the Strategic Pollinator Assessment map which identifies pollinator corridor potential on County roadsides or managed lands. NWCB staff and volunteers expanded two pollinator friendly plantings with locally sourced native plants.

2022 PROJECT ACCOMPLISHMENTS:

Program Development

- Completed or progressed with most high priority implementation tasks outlined in the Integrated Weed management Plan (IWMP).
- Implemented pit plans and associated weed treatments.
- Volunteer outreach through Master Gardeners and Clallam Conservation District.
- Expanded pollinator planting and watering program; monitored, maintained and augmented Deer Park Overpass and Old Olympic Highway/ODT projects.

Program Implementation

County Roadsides:

- Controlled weeds on a total of **88 individual County roads** for a total of **128** treatments; **53 roads** manual only, **17 roads** manual/herbicide, and **18 roads** herbicide treatment only.
- **Performed 59 complete whole-road** treatments and **69 spot/retreatments**.
- **64 roads** were surveyed and determined not to need treatment.
- Treated **186 miles** including retreatments/spot treatments (**278 acres examined**).
- Applied **3.88 gallons** of herbicide on **35 individual roads (70 miles**, including retreatments/ spot treatments).
- Controlled **26** species – including **10 regulated** noxious weed species.
- Manually removed **3325 plants** from **85 acres** of roadside.
- More than **13 individuals** interacted with staff during treatments.

County Rock Sources/Spoil Disposal Sites (Pits):

- Controlled weeds on a total of **23 individual County Pits** for a total of **50** treatments; **4 pits** manual only, **15 pits** manual/herbicide, and **4 pits** herbicide only.
- **2 pits** were surveyed and determined to not need treatment.
- **Treated 368 acres**, including retreatments (**390 acres examined**).
- Applied a total of **14.7 gallons** of liquid herbicide and **0.34 kg** of dispersible granules over **233 acres**.
- Controlled **27 species** within **247 acres**, both chemically and manually.
- Manually removed **1158 plants** from **49 acres**.

County Special Sites:

- Controlled weeds on a total of **14** individual County Special Sites for a total of **18** treatments; **3** sites were treated manual only, **8** sites were treated with herbicide only and **3** sites were treated both manually and with herbicide
- Treated **22.51 acres**, including retreatments (**23.61 acres examined**).
- Herbicide was applied on **11** unique sites with a total of **1.63 gallons** of liquid herbicide and **0.018kg** of dispersible granules applied over **13.4 acres**.
- Controlled **14** species, including **5** regulated species
- Manually removed **4452** plants from **7.64 acres**.

Strategic Pollinator Plantings:

- Monitored and maintained 3 sites (**Black Diamond, Old Olympic Hwy/ODT, and the Deer Park Overpass Pollinator Habitat Enhancement**)
- Continued photo monitoring locations to document plant success and growth over time.
- Established a volunteer regime that supplemented water maintenance at Deer Park Overpass and the ODT.
- Held volunteer events to assist with pollinator habitat planting. Nine people attended, contributing approximately 71 hours of time planting.
- Augmented **six** projects (**Kugel Creek, Old Olympic Hwy/ODT, 3 Crabs Berm, Sequim-Dungeness Way/Woodcock, Dawley Slump and Deer Park Overpass**).
- Expanded the Old Olympic Highway/ODT planting site, adding mainly shrubs and herbaceous perennials.
- Expanded the Deer Park Overpass planting site, adding mainly herbaceous perennials.

- Planted a combined total of **10,612 plants** over **six** projects. **Thirty-eight new species of pollinator plants** were added in 2022, with a total of **61 unique species** planted at both sites

Program Monitoring, Evaluation and Reporting

- The RWMT assessed **22%** of roadside treatments and reported **69%** average efficacy and **77%** efficacy for weeds of emphasis.
- Overall, herbicide treatments were determined to be **“fair”** (See Master Gardener (MG) report in Appendix K).
- Treatments of weeds of emphasis were determined to be **“good”**.
- No off-target damage was found, indicating that spot-spraying was precise and careful.
- The RWMT also started a new project surveying PUD vegetation management within a 21.5 mile stretch of Highway 101, west of Fairholme.

MAPS: PROJECT AREAS AND TARGET ROADS

Map 1 shows an overview of all roadside treatment activities completed by Clallam County Noxious Weed Control Board and partners in 2022. **Maps 2 – 10** show treatment activities in focus areas in East, Central and West Clallam County. Roads, pits, and Special Sites that received treatment are listed in Appendixes C-E.

Map Description:

The top priority of the 2022 IWM Plan was the control of *regulated* noxious weeds. *Regulated* weeds are limited in distribution and control to contain or eradicate infestations is required by state law (RCW 17.10). The maps include data points for all treatment activities to control regulated weeds except those that occurred in county pits. Data points represent discrete infestations but are not representative of scale; a point may represent the treatment of a single plant or more expansive infestations.

Non-regulated weeds, such as Scotch broom and Canada thistle, are more widely distributed across the county. Treatment activities for widespread, non regulated noxious weeds varied by location, species and available resources. The maps generally do not include data points for treatment activities of non-regulated weeds; however, comprehensive tabular data of treatment activities and species treated on each road can be found in Appendix C.

Legend Description:

The Legend for **Maps 2 – 10** includes symbols only for **Species Treated** on roadsides in the areas encompassed in each specific map. Together, maps 2 – 10 show all species with spatial data recorded in 2022. *Regulated* weed species are represented by asterisks. *Non-regulated* weed species are represented by circles. Weeds are listed in alphabetical order by common name. All county pits shown on the map were surveyed in 2022. See Appendix E for which Special Sites received treatment.

In the **Map Overview**, all treated roads are shown with solid green lines.

In **Maps 2 – 10**, treated roads are further color coded by treatment type; roads that received ONLY manual treatments are shown with green/white stripes, roads that had combination manual/herbicide treatments, or herbicide only, are shown with solid green. Roads that were only surveyed are shown with solid white.

Map List:

Clallam County

Map 1. 2022 Clallam County Roadside Treatment Overview

East Clallam County

Map 2. Blyn – Miller Peninsula Treatment Area

Map 3. Sequim – Dungeness Valley Treatment Area

Central Clallam County

Map 4. Mount Pleasant – Deer Park Treatment Area

Map 5. Port Angeles East – Agnew Treatment Area

Map 6. Port Angeles Treatment Area

Map 7. Joyce Treatment Area

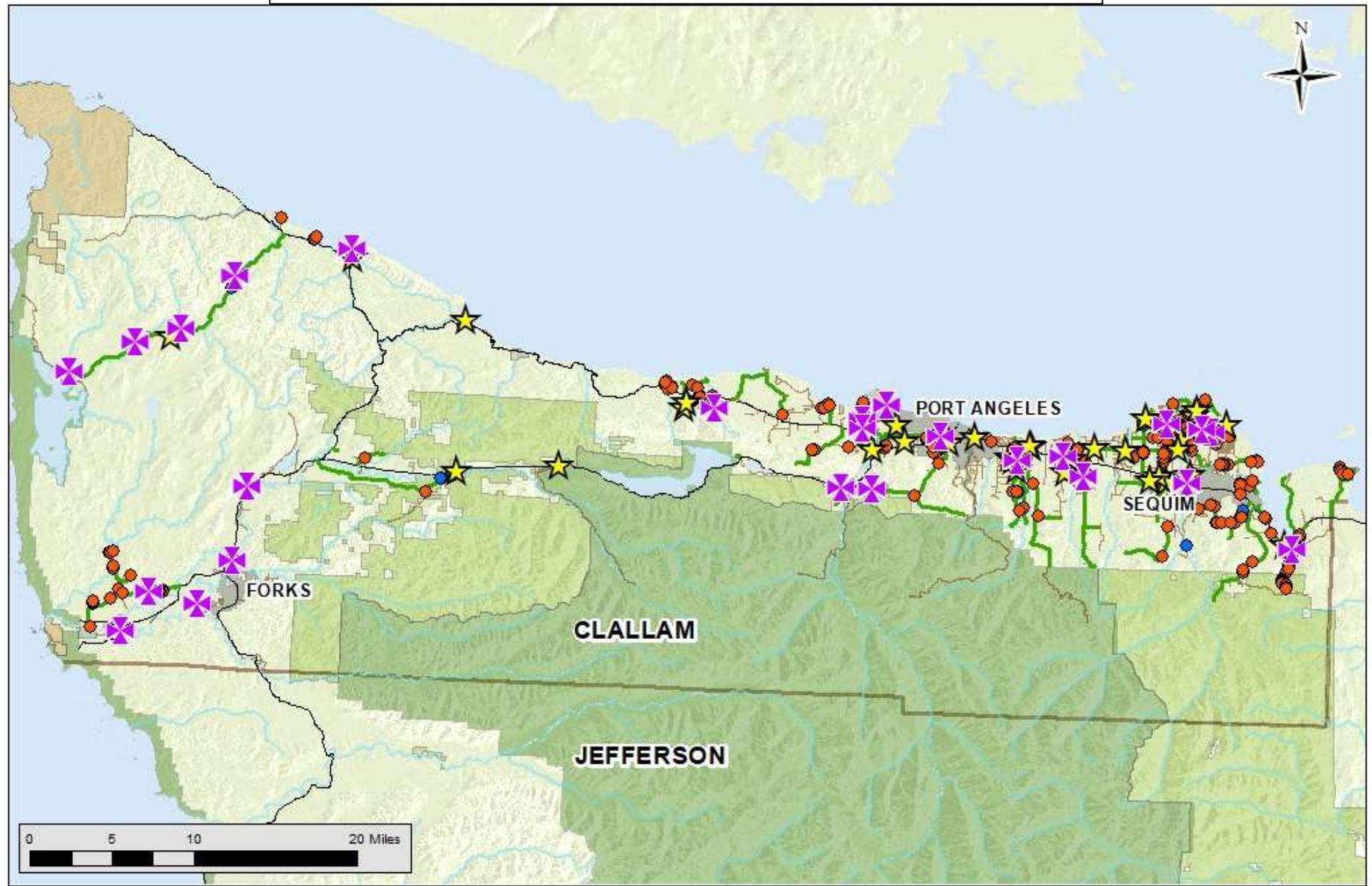
West Clallam County

Map 8. Hoko – Clallam Bay Treatment Area

Map 9. Beaver – Sappho Treatment Area

Map 10. Forks Treatment Area

MAP 1. 2022 CLALLAM COUNTY ROADSIDE TREATMENT OVERVIEW



2022 Species Treated*

- 2022 Regulated Weeds
- 2022 Non-regulated Weeds

Roads

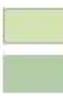
- Treated Roads
- Other county roads
- Highway



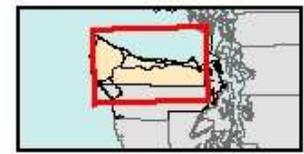
County Pits
Special Sites



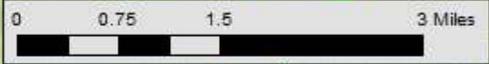
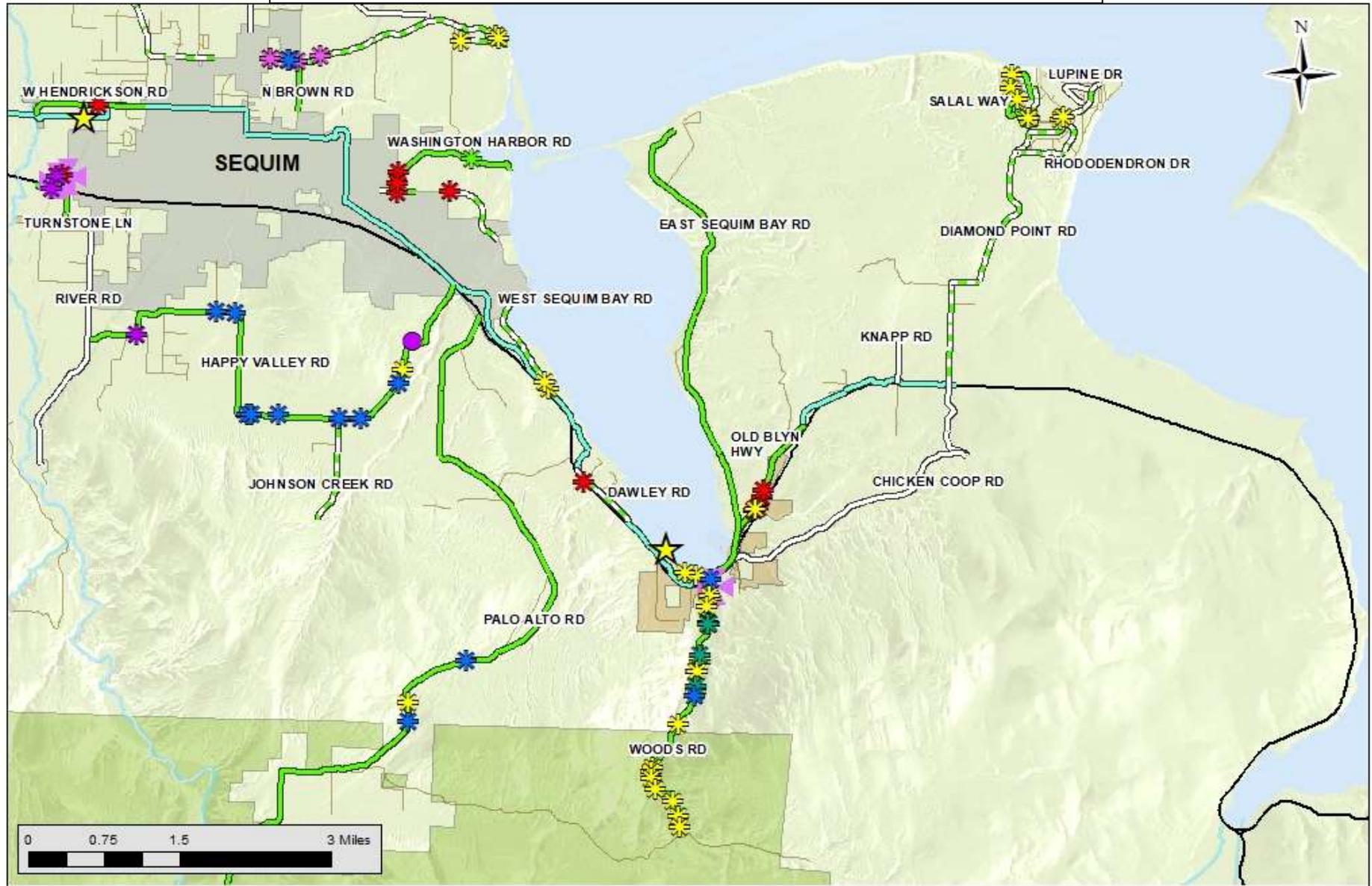
City Limits
Tribal Property



Olympic National Forest
Olympic National Park



MAP 2. BLYN – MILLER PENINSULA TREATMENT AREA



2022 Species Treated*

- common teasel
- knapweed, meadow
- knapweed, spotted
- knotweed, Bohemian
- poison hemlock
- tansy ragwort
- thistle, Canada
- wild basil/savory
- yellow archangel

Roads

- Herbicide
- Manual only
- Survey
- Other county roads
- Highway
- Olympic Discovery Trail

- County Pits
- Special Sites

- City Limits
- Tribal Property
- Olympic National Forest



*See legend description at the beginning of the "Maps" section.

MAP 3. SEQUIM – DUNGENESS VALLEY TREATMENT AREA



2022 Species Treated*

- common fennel
- common teasel
- hairy whitetop
- hoary cress
- knapweed, meadow
- knapweed, spotted
- poison hemlock
- tansy ragwort
- thistle, Italian
- yellow archangel

Roads

- Herbicide
- Manual only
- Survey
- Other county roads
- Highway
- Olympic Discovery Trail

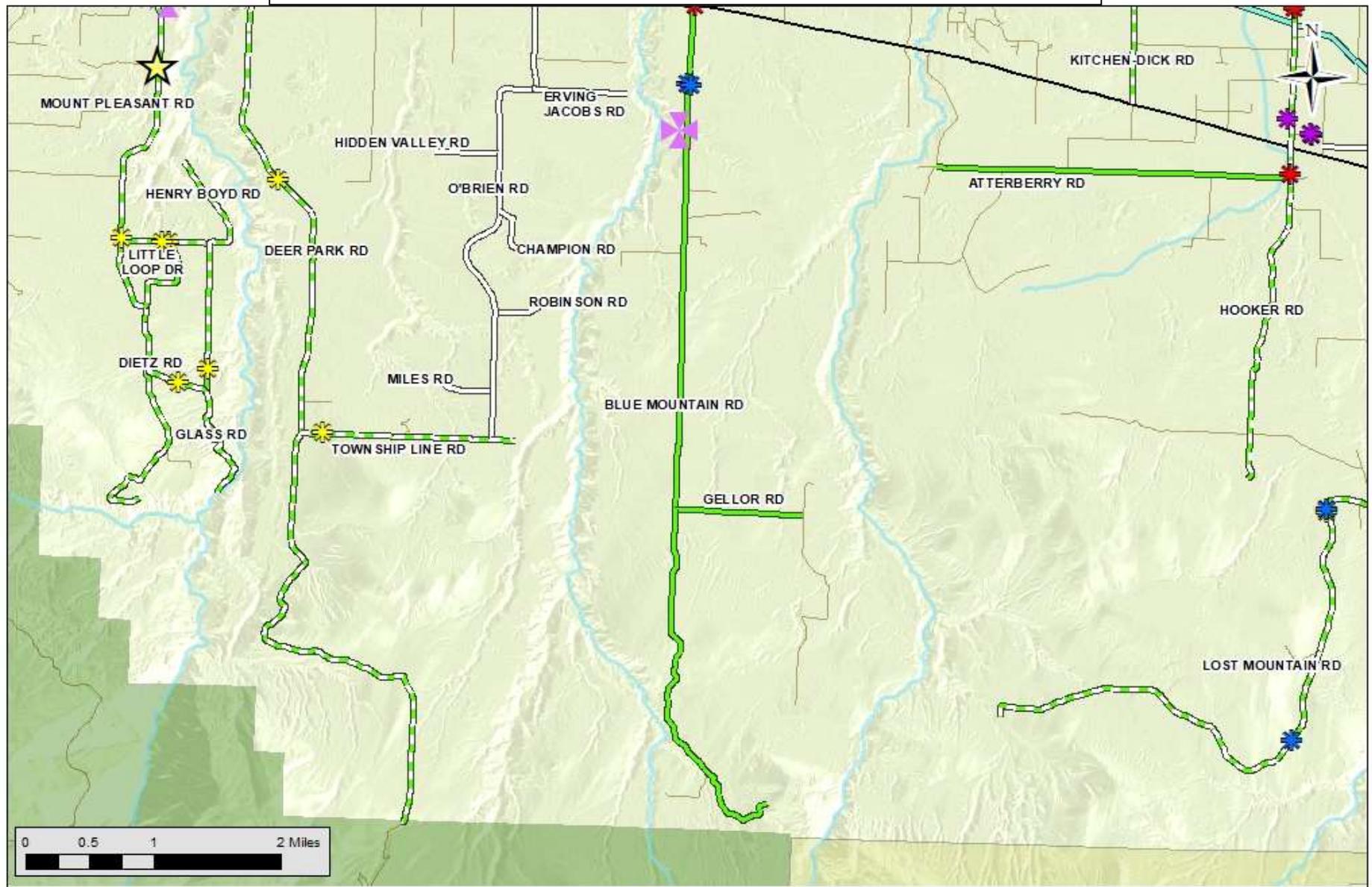
- County Pits
- Special Sites

- City Limits
- Tribal Property



*See legend description at the beginning of the "Maps" section.

MAP 4. MOUNT PLEASANT – DEER PARK TREATMENT AREA



2022 Species Treated*

-  knapweed, meadow
-  knapweed, spotted
-  poison hemlock
-  tansy ragwort

Roads

-  Herbicide
-  Manual only
-  Survey
-  Other county roads
-  Highway
-  Olympic Discovery Trail

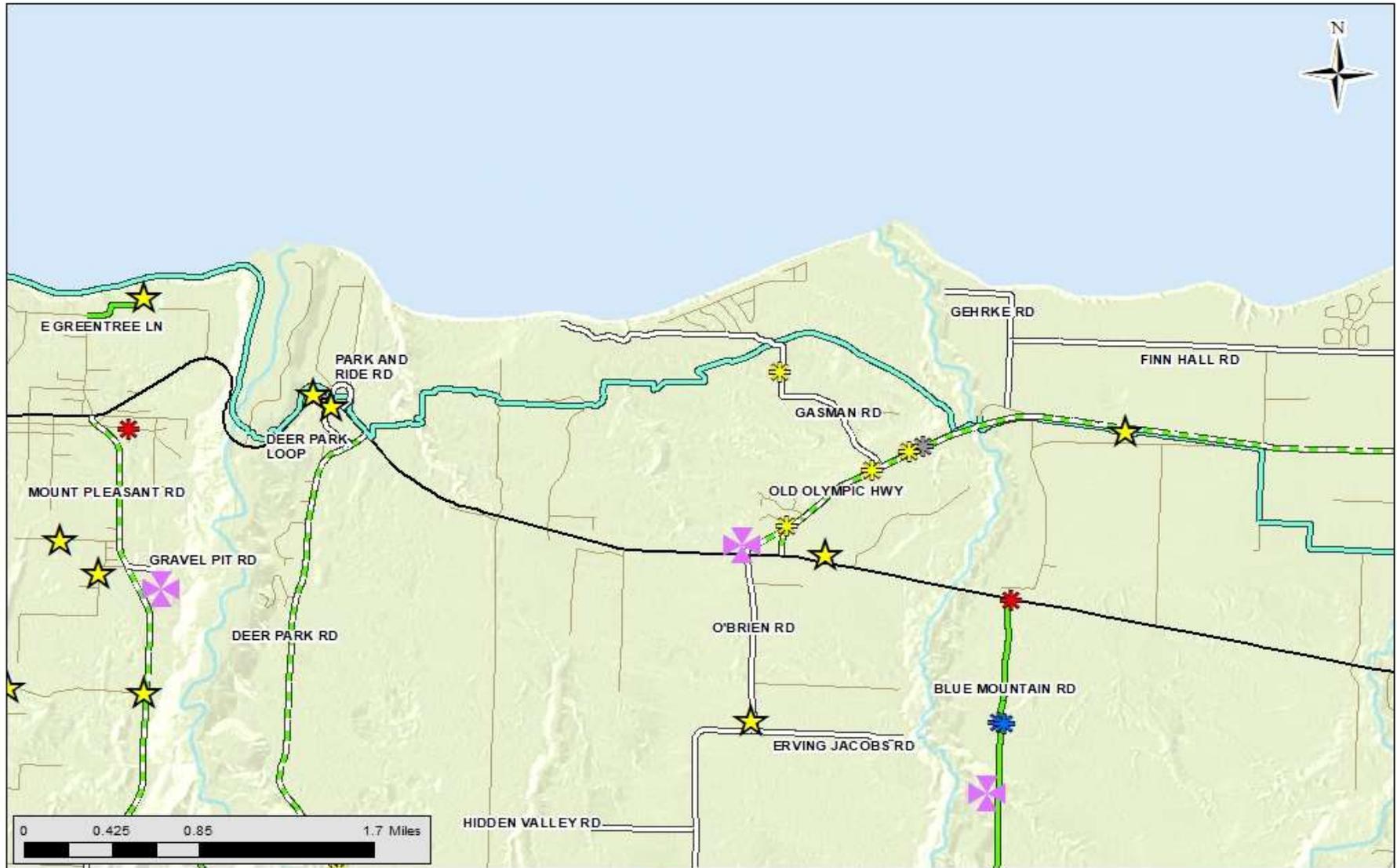
-  County Pits
-  Special Sites

-  City Limits
-  Tribal Property
-  Olympic National Park
-  Olympic National Forest



*See legend description at the beginning of the "Maps" section.

MAP 5. PORT ANGELES EAST – AGNEW TREATMENT AREA



2022 Species Treated*

- common tansy
- knapweed, meadow
- poison hemlock
- tansy ragwort

Roads

- Herbicide
- Manual only
- Survey

- Other county roads
- Highway
- Olympic Discovery Trail

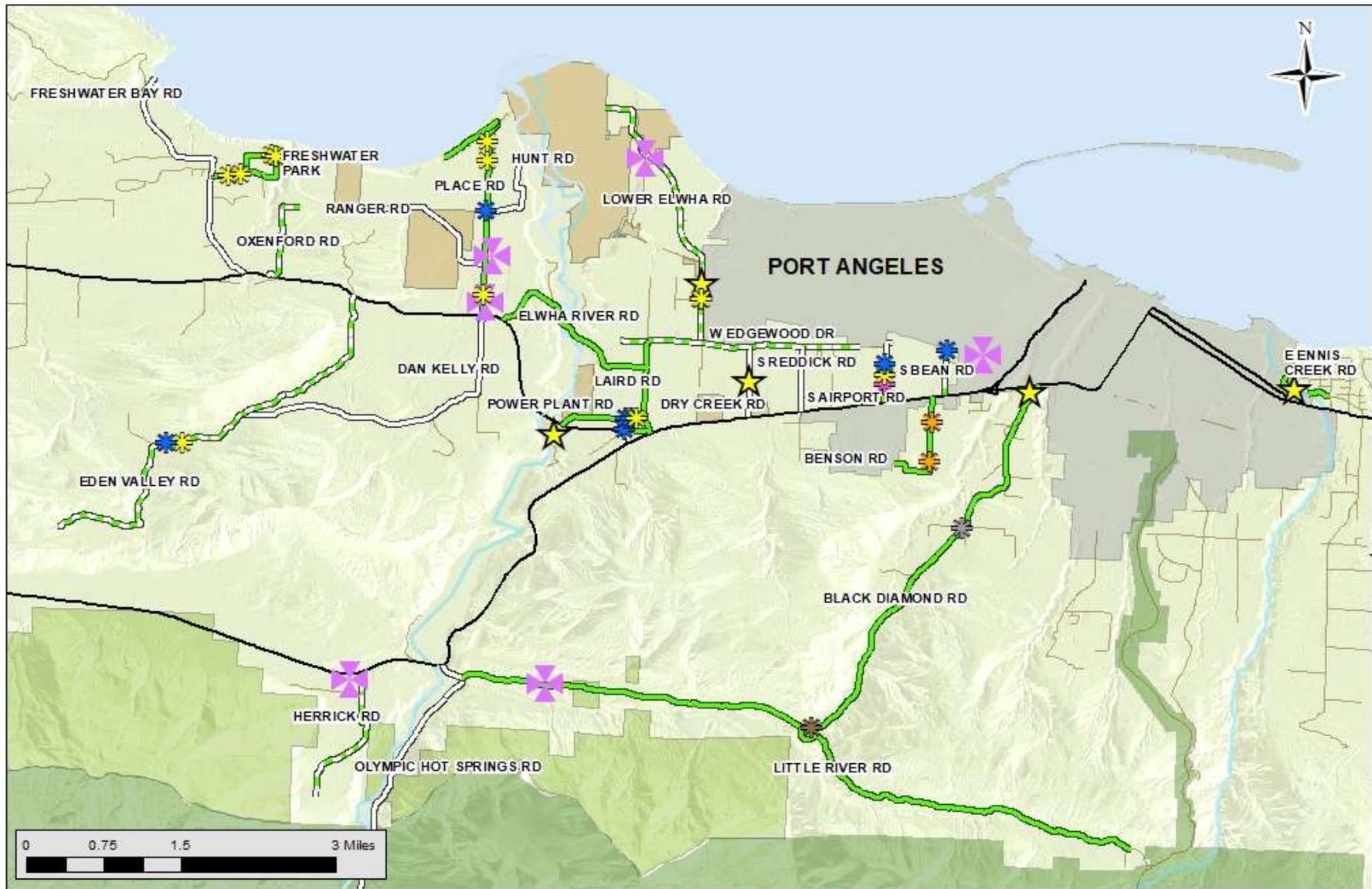
- County Pits
- Special Sites

- City Limits
- Tribal Property



*See legend description at the beginning of the "Maps" section.

MAP 6. PORT ANGELES TREATMENT AREA



2022 Species Treated*

- common tansy
- common teasel
- hawk weed, orange

- knapweed, diffuse
- knapweed, meadow
- tansy ragwort

Roads

- Herbicide
- Manual only
- Survey
- Other county roads
- Highway
- Olympic Discovery Trail

- County Pits
- Special Sites

- City Limits
- Tribal Property
- Olympic National Forest
- Olympic National Park



*See legend description at the beginning of the "Maps" section.

MAP 7. JOYCE TREATMENT AREA



2022 Species Treated*

-  knapweed, meadow
-  tansy ragwort
-  wild basil/savory

Roads

-  Herbicide
-  Manual only
-  Survey
-  Other county roads
-  Highway
-  Olympic Discovery Trail



County Pits



Special Sites

 City Limits

 Tribal Property

 Olympic National Forest

 Olympic National Park



*See legend description at the beginning of the "Maps" section.

MAP 8. HOKO – CLALLAM BAY TREATMENT AREA



2022 Species Treated*

- herb-Robert
- ✱ tansy ragwort

Roads

- Manual only
- Survey
- Other county roads
- Highway

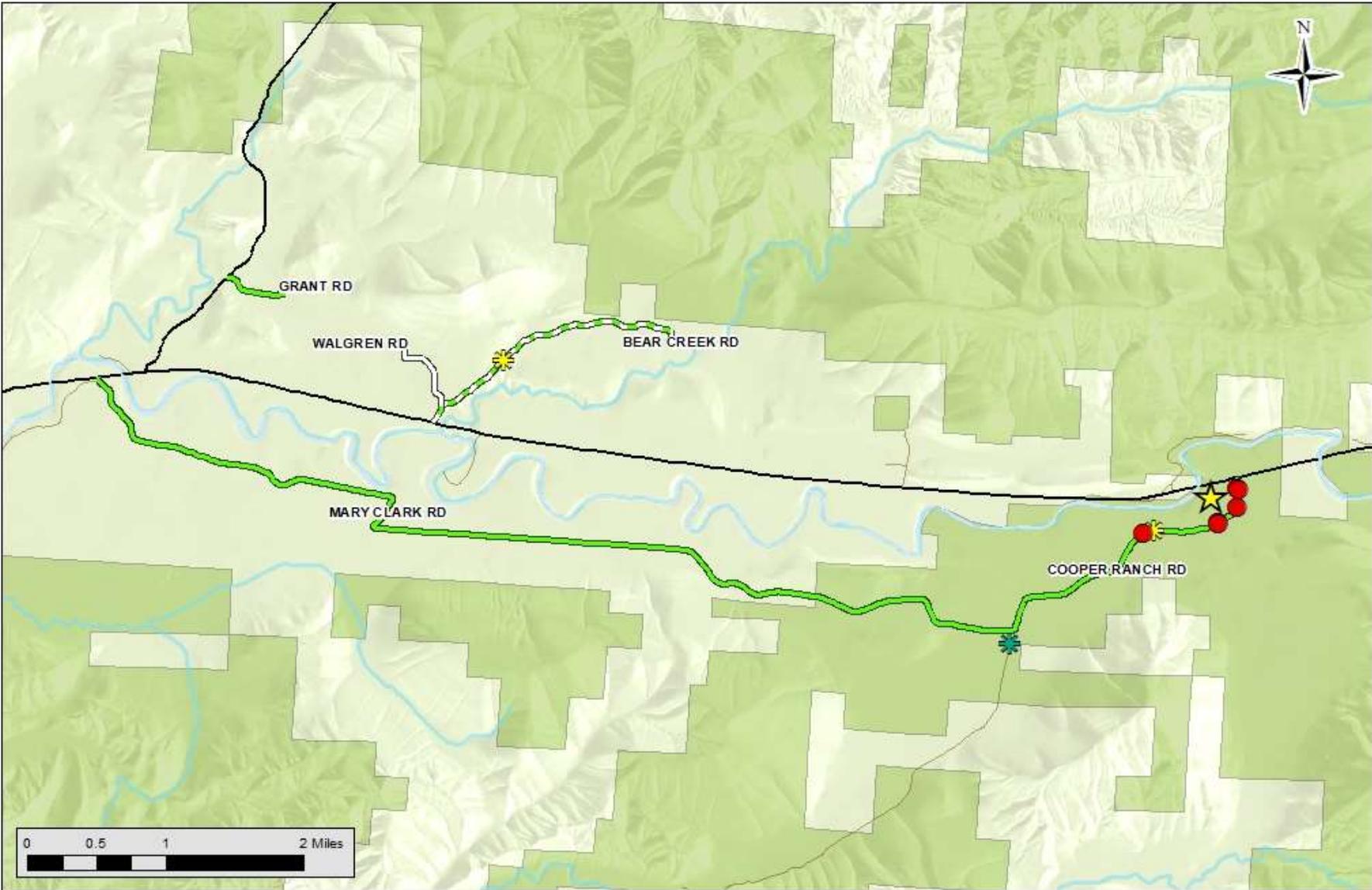
- ✱ County Pits
- ★ Special Sites

- City Limits
- Tribal Property
- Olympic National Forest
- Olympic National Park



*See legend description at the beginning of the "Maps" section.

MAP 9. BEAVER – SAPPHO TREATMENT AREA



2022 Species Treated* Roads

- herb-Robert
- ✱ tansy ragwort
- ✱ wild basil s avory
- Herbicide
- Manual only
- Survey

- Other county roads
- Highway

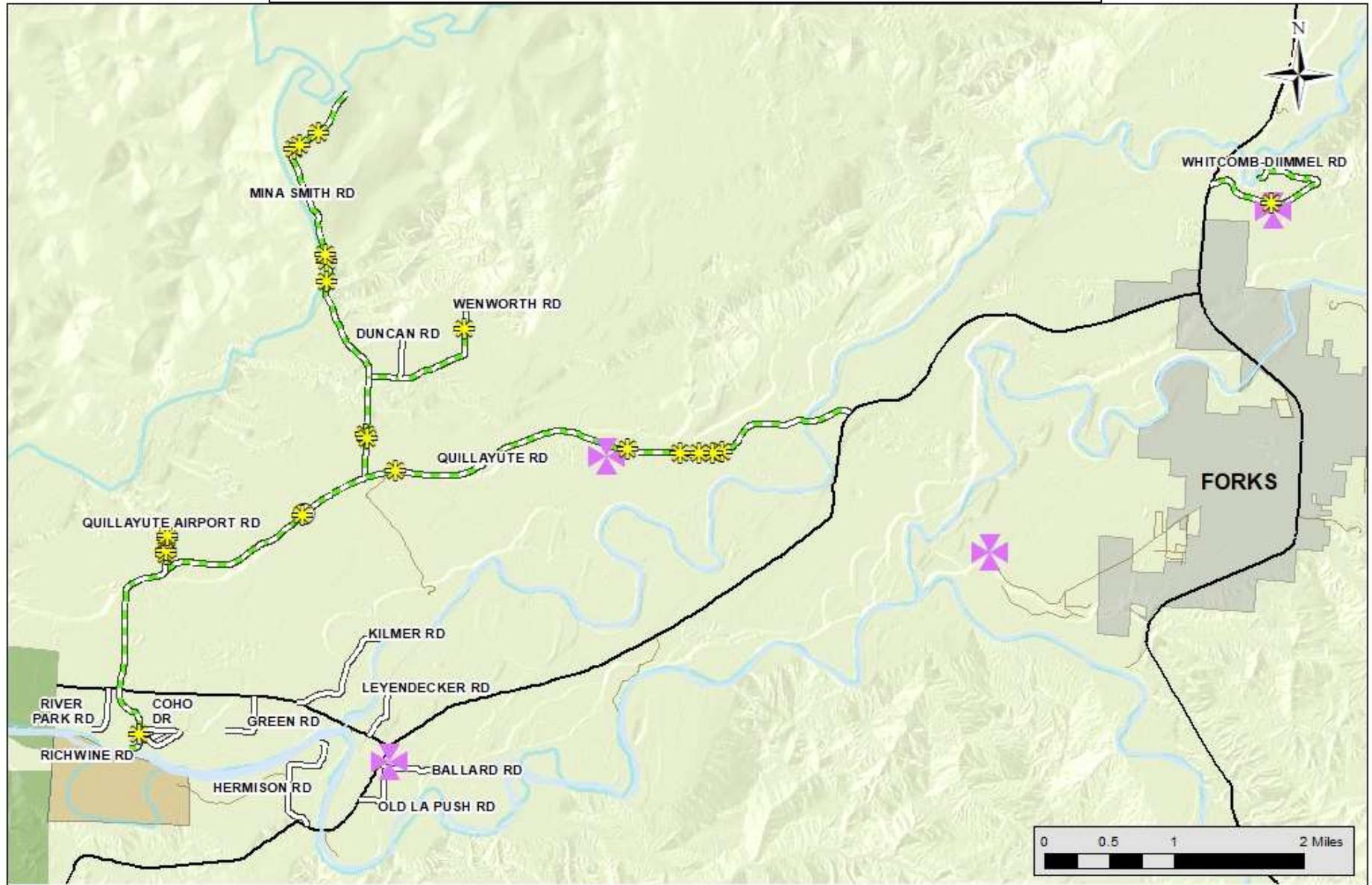
★ Special Sites

- City Limits
- Tribal Property
- Olympic National Forest



*See legend description at the beginning of the "Maps" section.

MAP 10. FORKS TREATMENT AREA



2022 Species Treated* Roads

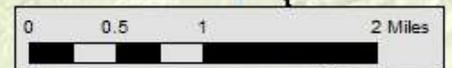
- golden bamboo
- tansy ragwort

- Manual only
- Survey

- Other county roads
- Highway

- County Pits

- City Limits
- Tribal Property
- Olympic National Park



*See legend description at the beginning of the "Maps" section.

POST SEASON OBSERVATIONS:

Roadside weed management is an evolving process and the IWM Plan is intended to be evaluated and adapted over time based on our observations, technical updates and input from partners and the public. The 2022 Plan was designed to complement our previous work, adapt to the observed conditions, and further specific weed management goals. The successful execution of the IWM plan is dependent on the effective coordination of its components. The program reviewed the existing program, forms and protocols developed previously and revised where needed for 2022. The IWM Plan is a unique element within the Road department's maintenance program, but to be successful, weed control activities must be seamlessly incorporated into the general maintenance activities. Weed control strategies must also be shaped to fit road maintenance criteria.

In the spring, prior to the start of treatment, the program coordinator and weed specialist met with each shop superintendent, the environmental coordinator and head road engineer to discuss the 2022 IWM Plan, new pit plans and any new special considerations on Clallam County properties. Staffing shortages during the treatment season limited the program's ability to fully implement the 2022 IWM Plan. Work was focused on surveying priority 1 roads and treating regulated weeds on priority 1 roads and within county pits. During the growing season, we also spent time watering and maintaining pollinator plantings from previous years, so as not to lose our progress establishing native plants in areas of high priority and visibility.

The weed specialist position, which is funded through the MOU between the Roads Department and WSU Extension to implement the IWM Plan, was vacant for much of the treatment season. The program coordinator and seasonal staff took on the work, but due to other commitments were not able to work full-time at implementing the IWM Plan. Despite those setbacks, we were able to survey and treated, if necessary, 86% of our priority 1 roads in the county. Additionally, we surveyed 25 county pits and treated 23 pits for noxious weeds. We were only able to survey and treat a small percentage of priority 2, 3 and 4 roads. Work in 2023 should focus on treating regulated weeds on priority 2 roads, treating all noxious weeds and weeds of concern on priority 1 roads and surveying priority 3 and 4 roads that have not been surveyed in the past few years.

Poison hemlock continues to be a high priority species for control, especially the historically large populations found in some of our eastern Clallam County pits. The persistent seed bank, early growth habits and growth within dense pasture grass and Himalayan blackberry has made poison hemlock a challenge to control. This spring the program explored new options for treating poison hemlock earlier in the growing season using Oust, an herbicide that is designed to work at lower temperatures. The treatments were monitored in the late summer, and we found that the early season treatments had almost no effect on the poison hemlock. We would like to build on this knowledge and continue exploring different options for early season treatments, while continuing to utilize methods known to be successful, such as manual removal. The county pits provide an excellent space to try new-to-us treatments that could potentially be used throughout the county.

The program also continues to maintain and supplement our pollinator enhancement areas, located at the Deer Park Overpass in east Port Angeles and along the Olympic Discovery Trail, adjacent to Old Olympic Highway in Agnew. This is now our sixth year planting native vegetation for pollinator habitat. These plantings serve not only as native pollinator forage and habitat but a way of increasing the resilience of public areas against noxious weed encroachment. These pollinator projects are also a great way to educate the public on the many environmental services that native plants provide. Our pollinator sites are located at areas that are fully exposed and composed primarily of fill material, which make plant survival and growth difficult. We have found that weekly waterings have greatly increased the survival and growth of our plantings. Through our partnership with the Clallam Conservation District, we recruited 6 volunteers for watering, two of which volunteered for 7 weeks each. In addition to planting at new and recurring roadside projects, we supplemented our two pollinator sites with over 9,000 plants. We had 9 volunteers participate in 5 volunteer events that were critical in getting plants out on both sites. Our pollinator enhancement sites would not be successful without the support we get through the Master Gardeners and our volunteers through the Clallam Conservation District, and we look forward to continuing these partnerships.

SPECIFIC OBSERVATIONS:

Program Development

- “Adopt-a-patch” and “Owner Will Control” options were published online; none were received.
- We added 5 locations to our “Special Sites” list, which will allow us to focus on the long term health and maintenance of these county-owned parcels.
- We surveyed 33 roads with “N/A” listed under “Target Weed Species for Control” and made notes for the 2023 plan. Our goal is to survey all listed county roads. This will allow us to better assign categories and priorities.
- Volunteer events improved our public relationships and engaged people in meaningful work for the county. Events included: 5 planting days, and summer/fall weekly watering between mid-July and the beginning of October. Approximately 13 people volunteered for planting and watering, donating 70 and 51 hours respectively.
- The Clallam Conservation District and Master Gardeners were fantastic organizations for generating volunteer activity.
- Stockpile areas and spoils areas were monitored and controlled. This control improved the likelihood of achieving the goal of “weed free material” in all county pits.
- PUD management and the NWCB discussed maintenance activities to identify compatible management practices to align with our goals of reducing noxious weeds.
- The Roadside Vegetation Management Team (RWMT) started a new project surveying PUD vegetation management within a 21.5 mile stretch of Highway 101, west of Fairholme.
- The RWMT provided us with valuable in-season control updates and notified us of areas in need of rechecks.
- The RWMT is an invaluable asset to the program and provided excellent feedback for every project they undertook this season. (See their reports in Appendix H).

Weed Control

- Compared to last year we treated 7% more road miles with 26% fewer treatment days. We were able to treat more road miles in fewer days because we focused primarily on treating regulated species only.
- 77 out of 89 high priority roads (86%) were either treated or surveyed this year.
- The extensive seedbank and long germination period of poison hemlock and knapweed species required multiple visits and treatments because of unpredictable germination times.
- Retreatments improved our ability to control “hard to find” weeds and weeds with different phenological responses.
- More county roads continue to be surveyed.
- All chemical treatments were entirely non-mechanized and carefully targeted allowing us to maximize the protection of native or desirable vegetation.
- In the County pits Total Examined Acres was up 14% and Total Acres Treated was up 53% this year over last year; while “Solid Chemical Acres Treated” was down due to a 53% decrease in herbicide use last year. Manual treatments and a focus on regulated species is the cause of this decrease.
- The program assisted with the inventory and control of noxious weeds at the Department of Community Development and Jamestown S’Klallam Tribe Lower Dungeness Levee Removal Project. This involved multiple days of mapping and treatment of existing weed species.

Plantings

- In 2022, the RWMT continued to monitor pollinator habitat enhancement project at Deer Park Enhancement Site. A series of photo-points were established and pictures taken three times during the year. These photos are a great time-lapse series that allows us to see how the site is evolving and the survival and growth of our plantings.
- The partnership between Clallam County and Shore Road Nursery that provided locally sourced native plants was crucial to our planting successes this year. They were a flexible, knowledgeable local resource that provided us with healthy plants and technical advice.

- The planting at Dry Creek Rd was delayed due to large amount of Himalayan blackberry still present on the planting slope. We will prioritize treatment of the blackberry next season and hopefully be able to plant on the site in fall of 2023.
- Our program assisted the environmental coordinator in planting roadside revegetation sites. These sites included a new planting at the Kugel Creek culvert replacement and augmentation plantings at Dawley slump, the Sequim-Dungeness Way/Woodcock Rd roundabout and the berm along 3 Crabs Rd berm.
- The final year of augmentation planting at the Hoko-Ozette MP 8.8 culvert replacement was cancelled and the plants were placed at the Kugel Creek culvert replacement site.
- The Deer Park Overpass site is comprised of a couple of different “habitats”, such as the flat areas on the top of the slopes and the different slope aspects. Most of the site is composed of fill material and the slopes are notably steep and inhospitable. This year’s plantings are the 4th year of a multi-year project.
- The wet spring allowed us to wait till July to start watering, and we had to continue through mid-October due to the unseasonably hot and dry early fall weather.
- Watering at the Deer Park pollinator site focused on the flat areas on top of the slopes, which are the safest and most easily accessible spots on site. The two flat areas located southeast of Highway 101 received the most attention and were watered almost every week. All slopes and the flat area on the north side were watered on a rotating basis. Watering is having a noticeably positive effect, increasing the survival and growth rates of the plants.
- The planting at the Old Olympic Highway/ODT site was watered once or twice a month during the dry season. The shrubs on the top of the berm had a high survival rate this year.
- We had 6 volunteers, recruited through the Clallam Conservation District, who donated time to water at the Deer Park pollinator plantings, including two “super” volunteers who volunteered 7 weeks each.
- The start of our planting season this fall was delayed due to the weather – it was hot and dry through mid-October and then freezing temperatures arrived in mid-November. We had to be flexible with our planting dates. We had incredible volunteers who came out for multiple “pop-up” planting events.

Crew and Equipment

- The published 2022 IWM Plan was a valuable guide for crew and a helpful reference for the public.
- The weed specialist position was vacant through most of the treatment season. The program coordinator filled in as the lead for roadside treatments, but other commitments prevented the crew from working full time implementing the 2022 IWM plan.
- Two seasonal employees joined us this season. Both had either a current Washington State pesticide license or obtained one early in the season.
- Mobile phone apps Field Maps and WSDA iForm provided the crew access to spatial databases in the field and increased crew ability to identify adjacent ownership and boundary lines and to coordinate treatments with wider landscape goals.



RECOMMENDATIONS:

The Clallam County Integrated Weed Management Plan is intended to be annually evaluated and adapted over time in response to changing conditions and needs. Input and technical updates from federal and state agencies, tribes, universities and local partners and stakeholders are essential. For that reason, the results of control activities are monitored, evaluated and the program activities adjusted as necessary.

Program Development

- Continue to identify all county-owned parcels and inventory for noxious weeds.
- Focus on planting species that have known success on the Deer Park Overpass pollinator enhancement project. We also want to start incorporating more high elevation and rocky outcrop species that thrive in exposed, low nutrient sites.
- Begin seeding the steep slopes of Deer Park Overpass with genetically appropriate grass and forb seeds. This should lead to better establishment of native cover on the slopes.
- Add mulch around many of our plantings at the Deer Park Overpass and Old Olympic Highway/ODT pollinator sites. We hope this will decrease watering needs and increase moisture retention, leading to increased survival.
- Investigate whether fertilizer can be economically and efficiently applied to pollinator plantings. Low nutrient levels in the fill material that both sites are composed of is suspected to be a cause of high mortality and low growth rates.
- Continued outreach to volunteer organizations and utilization of volunteer help on Deer Park and the Old Olympic Highway ODT planting sites will greatly help survivorship of plants, minimize maintenance for program staff and allow the public to actively participate in increasing pollinator habitat in the county.
- Develop and expand pollinator forage and habitat enhancement projects and coordinate with Road Department, WSU Extension and other partners.
- Publicizing program efforts on our pollinator enhancement sites, for our Scotch broom pulling events, and RWMT activity can create more public engagement and highlight road department efforts at environmental stewardship. Examples include linking in with the mailing list of active organizations such as the Clallam Conservation District, Broom Busters, Peninsula Trails Coalition and the social media arm of the WSU Master Gardeners.
- FAQ page on website should be created to answer more of our common email questions. Some of those questions are: “How should we dispose of Scotch broom?” “What roads do you plan to treat and when?” “Is ---- a regulated weed?”
- “Owner Will Control Agreements” (Appendix O) have only been submitted by one property owner through the entire program’s history, and “Adopt a Patch” (Appendix P-R) have never been used. We need to reevaluate the value of these programs. “Owner Will Control” agreements may need to be highlighted on our website more and in a brochure for the courthouse. “Adopt a Patch” agreements should potentially be replaced in favor of volunteer events with specific dates and locations.
- Continue to support coordination and communication between the Noxious Weed Control Board, Road Department, Clallam Conservation District, WSU Extension, and other partners.
- Collaborate with Road Department maintenance staff and Clallam PUD to identify landscape goals and harmonize maintenance techniques wherever possible.
- Continue to support local native plant material availability. Coordinate and plan better for the private property “native plant enhancement” option with our “owner will control” contracts.
- Evaluate and revise pit plans as necessary with input from ER&R Manager, shop supervisors and engineers.
- Identify more county roads where we can implement the “light touch” mowing program.

Crew, Equipment, and Data

- Evaluate the need to create weed point/layers of our data for the Avenza App. This could potentially make it easier for the RWMT and Noxious Weed Board to navigate to past sites that are outside of reception area and access the maps on more types of electronic devices.
- Set up new mobile water tanks and pumps for use at the Deer Park Overpass and Old Olympic Highway/ODT pollinator planting sites.

- Continue communicating with RWMT to determine the best data collecting protocols that facilitate accurate monitoring.
- Recruit and train seasonal crew earlier in 2022.
- Coordinate with Clallam County GIS department to support and utilize all technical upgrades for data collection.

Weed Control

- Focus on treating regulated weeds on priority 2 roads and treating all noxious weeds and weeds of concern on priority 1 roads
- Survey priority 3 and 4 roads that have not been surveyed or treated in the past few years.
- “Special Sites” will continue to be a high priority for next year. Revegetation projects for road sites have become a larger part of our obligations and monitoring these sites and treating noxious weeds while populations are still small is crucial for the success of the projects.
- Continue inventorying Scotch broom patches for future potential volunteer events. Projects must be in low traffic areas, optimally on Olympic Discovery Trail or other county lands, where work parties can safely operate.
- Himalayan blackberry is a species of high concern along roadways and the Olympic Discovery Trail. We need to continue developing best management practices for treating infestations that are destroying infrastructure or posing a risk to safety, but that also recognizes public harvesting of berries.
- Reducing the number of priority 1 roads will free up our ability to focus on spot treatments of known regulated weed infestations.
- Provide for time and resources to walk treatment areas of roads with known infestations of priority weeds.
- Develop strategies to determine treatments of non-priority category 2 species.
- Continue to diligently map and record all new infestations of high priority, category 1 species.
- Begin to lower priorities on roads that have been treated for multiple years that have smaller, sporadic infestations.
- Increase communication with Olympic Discovery Trail Volunteers and Coordinator to find and transition areas from weed landscapes to more native vegetation corridors.

General 2023 Treatment Recommendations:

1. Treat category 1, priority weeds on roadsides.
 - a. Repeat treatment of roads in 2022 IWM Plan as necessary; identify roads to begin a 4 year maintenance cycle.
 - b. Survey known or suspected infestation areas on foot as time and resources allow.
 - c. Control noxious weeds on intersecting or adjacent roads to 2022 treatments as necessary.
2. Treat category 1 and category 2 weeds in County pits as determined by pit plans.
3. Treat species and locations with most impact to local agriculture.
 - a. Continue outreach with local farmers to identify priorities and potential concerns.
4. Treat species and locations with most impact to local forestry
 - a. Continue outreach to identify priorities and potential concerns.
5. Treat non-native weeds at Road Department identified special sites.
 - a. Consult with environmental coordinator, shop supervisors, and engineers to identify priorities.
6. Coordinate roadside treatments to support weed management goals adjacent to County land.

APPENDIX A: 2022 IWM TASK TABLE

The table below lists the tasks included in the IWM Work Plan and highlights the balanced approach to weed management. The specific tasks represent the best mix of control options chosen to address specific weed problems. The tasks are categorized by the weed management strategies: **Biological, Physical, Cultural, Preventative, and Chemical**. We completed or made substantial progress on all tasks listed below. The integral precept of the IWM Work Plan is that all treatment methods are potentially applicable to the County's management of noxious weeds. The table lists the task in **bold** and a description of 2022 activities; blue check marks indicate completed tasks, orange check marks indicate partially completed tasks, red check marks indicate not completed.

Task Status	Biological
✓	Identify release appropriate sites adjacent to County right-of-way : Not accomplished due to staffing shortages
✓	Coordinate with WSU Extension and Noxious Weed Control Board for releases as they become available : Everything is up to date
✓	Assist with research projects where possible : Providing technical advice and suggestions for Master Gardener's PUD vegetation management study
	Physical
✓	Update contact list to be shared between departments . Shared contact between Road Department Superintendents, Environmental Coordinator and ODT Volunteer Coordinator.
✓	Promote desirable native vegetation wherever possible . Coordinated Planting projects and helped develop native species list for road projects
✓	Clearly mark treatment areas, communicate location to field crews : All treatment sections were posted with Herbicide Notice during and after treatments for at least 24 hours. Unnecessary to communicate location to field crews
✓	Schedule and oversee C.R.E.W for control projects : Due to cost and availability C.R.E.W was not a part of this year's treatment projects
✓	Collaborate with Roads department and Clallam PUD to identify landscape goals and harmonize maintenance techniques : Met with PUD to learn about their vegetation management goals within their easements
✓	Create Adopt-A-Patch opportunities : Posted online and had materials available at all times. No new relationships this year.
✓	Review public involvement opportunities to ensure the available material meets program goals and is readily accessible online : Partnerships with the Master Gardeners and the Clallam Conservation District contributed to both the planting and watering of the native pollinator projects this year.
	Cultural
✓	Identify opportunities to use native plantings in the early stages of projects in the county's transport plan : Provided assistance in augmenting revegetation sites for county lands

✓	Further develop Strategic Pollinator friendly plantings and coordinate with Road Department, WSU Extension to incorporate existing volunteer programs: Evaluating what species are successful on the sites and adding new species to plant order that have the potential to do well. The Deer Park / HWY 101 interchange pollinator plantings and the Old Olympic Highway ODT pollinator plantings have been a wonderful source of volunteer projects for the Master Gardeners and Clallam Conservation District.
✓	Seek grant opportunities to implement plot projects : Not accomplished due to staffing shortages
✓	Foster relationships with partners that can provide locally sourced native plants. Update native plants list and program as necessary: Currently working with Shore Road Nursery to obtain locally sourced native plants. Lists of appropriate species are updated to reflect use on each individual site.
✓	Partner with experts from local, state and federal agencies and entities including but not limited to: Clallam County Parks, Washington State University Extension, WSU Master Gardeners, local chapter of bee keepers, the native plant and Audubon societies, the Nature Conservancy, conservation districts, Olympic National Park, Olympic National Forest, USFW Marine Refuge System, Makah, Quileute, Lower Elwha Klallam, and Jamestown S'Klallam tribes, and others who have an interest in developing local native seed and plant resources for use in government projects: Our partnerships, especially with WSU Extension and the WSU Master Gardeners, Olympic National Forest and Jamestown S'Klallam Tribe, are ongoing and continues to be a linchpin in our public operations.
✓	Encourage landowners with "Owner Will Control" agreements to undertake adjacent roadside enhancement consistent with developing a low maintenance, self-sustaining plant community to prevent weed invasion: This information is available online and available to the public for any interested parties.
✓	Identify and compile a list of sites for revegetation opportunities: Not accomplished due to staffing shortages
✓	Develop native seed mix for Road Department projects where bare ground is necessary: Projects this year did not require the use of a native seed mix. We have however worked with other county departments to create appropriate native seed mixes hat can be applied to the roadsides.
	Preventative
✓	Update rock and gravel source weed management protocols: All protocols were current and up to date
✓	Increase awareness of light mow maintenance techniques through our website and mowing personnel: This information is available on our website and the county staff met at the beginning of the season for training and continuing education
✓	Inventory, develop and implement weed management plans for all county quarries, storage areas, and spoil disposal sites (pits); update as needed as County use requirements change: Surveyed all 25 county pits for regulated noxious weeds and treated 23 pits for weeds.
✓	Implement weed free material requirements for all county projects : A“ Weed Free Material” clause is included in the county contracts
✓	Facilitate annual department native and invasive plants identification training in cooperation with weed board staff. Supply field crew with identification booklets : Not accomplished due to staffing shortages and no interest from departments.
✓	Identify equipment needs, investigate available resources , procure as resources allow: New backpack sprayers and spare parts were purchased, two new smaller water tanks and pumps were purchased to facilitate watering at pollinator enhancement sites

✓	Create county pit reference maps to include in management plans: Weed locations were mapped at each county pit and maps will be created when necessary
✓	Treat all sand piles and sand extraction zones in county pits: All piles and extraction zones were treated
✓	Provide inspection services for all privately sourced material for county projects that may be weed-contaminated: Pit inspections were completed for 12 private pits that have current contracts with the county or will be bidding on county contracts in the future.
✓	Monitor and evaluate treatments in county pits: Early season treatments for poison hemlock in eastern Clallam County pits were monitored in the late summer and found to be inadequate at controlling hemlock. Infestations of noxious weeds that were treated in previous years were surveyed and retreated if necessary.
✓	Create a road survey form, catalog weed infestations and road priority in treatment structure: Road survey form was found to be adequate and was used to survey county roads.
✓	Compile list of sources that meet weed-free standards and publish online: Updated private pit list in K:\Interdepartmental\A-Share\Roads\NoxiousWeeds_PitCertifications\Pit Inspections\ClallamPits_NoxiousWeedCertifications.xlsx
	Chemical
✓	Implement project list based on tables 4-8 and planned reduction of Category 2 weed sites: 2022 IWM Plan was implemented, though staffing shortages required crew to focus mainly on priority 1 roads and regulated weeds. In 2022, 154 roads were either surveyed or surveyed and treated, all 27 county pits were surveyed and 25 were treated for weeds and 19 special sites were treated for noxious weeds.
✓	Post annual project list and treatments online. Update during season as resources allow: Updated at the end of the season. Investigating the feasibility and need of posting during the treatment season
✓	Compile locations and instructions for special management areas. Include and update field maps as frequently as possible: No inquiries this year, not accomplished due to staffing shortages.
✓	Assess equipment and supplies, identify needs, and procure as needed: New backpack sprayers and spare parts were purchased.
✓	Ready all necessary forms, regulatory compliance paperwork and safety equipment before commencing treatment season: Accomplished
✓	Coordinate with Road Department staff to identify “special management areas” or non-native, invasive weed locations that interfere with road safety or function; outline additional management needs and strategy for weed control in these areas: Spoke to the District 3 supervisor about Himalayan blackberry infestations that are interfering with road safety and function and will compile list of potential treatment locations. Coordinated with the county’s Lead Right-of-Way agent to treat Canada thistle that was negatively affected neighboring properties.
✓	Develop and utilize regional partners to assist in weed control across the county: Staff shortages hampered partnerships, however some manual control of tansy ragwort was accomplished by partners on the west side.
✓	Complete treatment records daily. Enter data into Clallam County Noxious Weed Control Program database. Monitor at least 10% of all treatments, retreat as needed and as resources allow: Treatment records were completed daily and data was entered into the database at the end of the season. In 2022, the Roadside Weed Management Team monitored 22% of treatments.
✓	Identify any additional equipment needs and take steps to incorporate any available resources, including; vehicles, application equipment, water tanks, or technical equipment: Purchased two new tanks and pumps as well as new backpack sprayers and spare parts

✓	Provide WSU Master Gardeners Roadside Weed Monitoring Team (RWMT) with safety equipment, additional training opportunities, and technical support for monitoring projects: Met with the RWMT in early spring to discuss protocols and priorities this year. The RWMT were provided with safety equipment for the monitoring and for use during their PUD vegetation survey.
✓	Conduct a weed inventory on at least 25% of all county roads annually: Surveyed or surveyed and treated 152 county roads (30%).
✓	Identify, document and map additional species, location, size and density: Mapped and recorded information on all regulated species encountered on county roadsides, pits and special sites during 2022 activities.
✓	Update survey data of county roadsides and catalog infestations over time: All survey and treatment data has been compiled for this report. Infestations and survey results will be recorded in our database this winter.
✓	Identify and compile a list of high priority infestations for following year. Create map: In process.
✓	Support, volunteer-based projects either on or adjoining county property that protects county property from weed infestations. This may include monitoring, road-typing for re-vegetation, and re-vegetation projects: CCNWCB hosted 10 volunteer watering events at the Deer Park Overpass pollinator planting and 5 planting events, 4 at the Deer Park Overpass and one at the Old Olympic Highway/ODT site. Volunteers contributed over 122 hours and were integral in the success of our pollinator projects! The volunteer Roadside Weed Management Team volunteered 217 hours to the implementation of the 2022 IWM Plan.
✓	Promptly respond to all public inquiries. Address any public concerns regarding applications: We spoke with at least 13 individuals while treating roadsides and right-of ways. We addressed all public concerns and provided information on what species were treated and when on specific roads.
✓	Manage "Owner Will Control" agreements: No current agreements in place
✓	Review "Owner Will Control" application process and forms to ensure all public involvement opportunities are readily accessible online: The agreement was not analyzed this year due to staff shortage.
✓	Maintain current list and map of "Owner Will Control" locations for both office and field use: There are no current "Owner Will Control" agreements and locations.
✓	Review and update on-line weed control request application process and forms as necessary: The online weed control request form was updated when the county moved to a new website. Both the weed control request and knotweed sighting forms are working.
✓	Review process and forms for interdepartmental communication: Met with departmental staff in the beginning of the season to address any concerns.
✓	Compile annual report summarizing accomplishments, effectiveness, and recommendations for subsequent year. Brief the Road Department and County Commissioners by December 31st: The County Commissioners and Road Department were briefed on the 2022 season during a commissioner work session on December 5. The 2022 report will be available by the end of December.
✓	Draft IWM plan and submit to the Clallam County Noxious Weed Control Board and Road Department Supervisor for approval prior to the Weed Board's first meeting of the year. Submission of the IWM plan should occur 20 days before the meeting and should be posted online. Provide public notice that plan will be discussed, with weed board meeting announcements. The finalized plan and a map of proposed treatment locations should be posted online and made available upon public request: Currently in the process of drafting the 2023 IWM Plan and it will be complete by December 31.

APPENDIX B: WEED SPECIES TREATED ON COUNTY ROADSIDES, PITS, AND SPECIAL SITES

The table below alphabetically lists all weed species controlled in 2022 on County roadsides or rock sources/soil disposal sites (Pits). The 4-letter Weed Code is the first two letters of the genus and the first two letters of the species. Weed Category is determined in the 2022 IWM Plan to prioritize control. Definitions of headings can be found at the end of the table. Clallam County Noxious Weed List available online: <https://www.clallamcountywa.gov/1042/Roadside-Vegetation-Management>

COMMON NAME	4-LETTER WEED CODE	SCIENTIFIC NAME	LIFE CYCLE ¹	GROWTH FORM	THREAT	CATE-GORY	STATUS
burdock, common	ARMI	<i>Arctium minus</i>	B	Forb	A host for mildew and root rot that can effect cash crops, causes animal milk to smell funny and is considered toxic due to its diuretic properties	3	WW
chervil, bur	ANCA	<i>Anthriscus caucalis</i>	B	Forb	Highly adaptable, aggressive competitors, forms monocultures, toxins cause skin irritation	3	WW
mustard, birdsrape	BRRA	<i>Brassica rapa</i>	B	Forb	Can be toxic to livestock, can degrade agricultural seed production	2	WW
blackberry, evergreen	RULA	<i>Rubus laciniatus</i>	P	Shrub	Dense canopies crowd out native species; impenetrable barrier	2	NW
blackberry, Himalayan	RUAR	<i>Rubus armeniacus</i>	P	Shrub	Dense canopies crowd out native species; impenetrable barrier	2	NW
broom, Scotch	CYSC	<i>Cytisus scoparius</i>	P	Shrub	Forms dense stands; unpalatable; interferes with forest regeneration; fire hazard; scent can exacerbate human grass allergies; seeds are toxic to horses and livestock	2	NW
butterfly bush	BUDA	<i>Buddleia davidii</i>	P	Shrub	Invades natural areas; dense stands crowd out native vegetation in riparian areas and interfere with natural succession	1	NR
canarygrass, reed	PHAR	<i>Phalaris arundinacea</i>	P	Grass	Unpalatable unless young, forms dense stands that crowd out native plants; especially difficult to control; serious wetland invader; can stop the process of succession in riparian sites, impedes tree seedling establishment	2	NW
carrot, wild	DACA	<i>Daucus carota</i>	B	Forb	Damages agricultural commodity as it may cross pollinates with domestic carrot, seriously degrading the quality of commercial carrot seed production	2	NW
chicory, common	CIIN	<i>Cichorium intybus</i>	P	Forb	Only found in the Dungeness Valley where it is starting to spread	1	ISSC
comfrey, common	SYOF	<i>Symphytum officinale</i>	P	Forb	Aggressive invader, unpalatable, mildly toxic to livestock	2	WR
daisy, oxeye	LEVU	<i>Leucanthemum vulgare</i>	P	Forb	Aggressively invades fields and forms dense populations, out competes desirable plants	3	WW
hawkweed, orange	HIAU	<i>Hieracium aurantiacum</i>	P	Forb	Aggressive invader forming dense mats, unpalatable, competitor of pasture and range plants	1	NR

COMMON NAME	4-LETTER WEED CODE	SCIENTIFIC NAME	LIFE CYCLE ¹	GROWTH FORM	THREAT	CATE-GORY	STATUS
hawkweed, European	HISA	<i>Hieracium sabaudum</i>	P	Forb	Forms large infestations, is currently very limited in Washington, therefore now is the time to control it		
hawthorne, English	CRMO	<i>Crataegus monogyna</i>	O	Tree	Dense thickets can dominate shrub layer and suppress desirable vegetation	2	NR
hoary alyssum	BEIN	<i>Berteroa incana</i>	A, B	Forb	Can be toxic to horses; spreads aggressively in disturbed areas	1	NR
fox glove	DIPU	<i>Digitalis purpurea</i>	B	Forb	Can be toxic to livestock; spreads aggressively in disturbed areas	3	WW
herb Robert	GERO	<i>Geranium robertianum</i>	A, B	Forb	Rapid spreading; displaces native herbaceous plants; allelopathic, inhibits the germination of small seeded forbs in forest understory	1	NW
knapweed, meadow	CEMO	<i>Centaurea x moncktonii</i>	P	Forb	Outcompetes pasture species; degrades wildlife habitat; interferes with agriculture	1	NCR
knapweed, mountain	CEMO2	<i>Centaurea montana</i>	P	Forb	Rapidly spreading, unknown threat to habitat and infrastructure	2	WR
knapweed, spotted	CEST	<i>Centaurea stoebe</i>	B, P	Forb	Allelopathic plant that can inhibit the germination of grasses; forms dense stands that exclude desired plants and wildlife	1	NCR
knotweed, Bohemian	POBO	<i>Polygonum x bohemicum</i>	P	Shrub	Easily spreads by disturbance; dense colonies eliminate other plant species and can degrade fish habitat; causes structural damage to human structures	1	NCR
laurel, spurge	DALA	<i>Daphne laureola</i>	P	Shrub	Toxic to humans and animals; contact with plants can cause dermatitis	1	NR
lupine, tree	LUAR	<i>Lupinus arboreus</i>	P	Shrub	Aggressive invader forming dense monocultures, potentially toxic to livestock	2	WR
peavine, everlasting	LALA	<i>Lathyrus latifolius,</i>	P	Forb - vine	Forms dense thickets; seeds can be toxic to livestock; seriously interferes with forest regeneration where it invades from edges of timber units	2	ISSC
poison hemlock	COMA	<i>Conium maculatum</i>	B	Forb	Highly toxic to humans and animals; all parts of the plant are toxic; severe birth defects	1	NCR
sow-thistle, perennial	SOAR	<i>Sonchus arvensis</i>	P	Forb	Reduces crop yield, causes severe impact to native vegetation in tidal meadows and beach fringe sites	1	NCR
St. John's wort, common	HYPE	<i>Hypericum perforatum</i>	P	Forb	Causes photo-sensitization when grazed; toxic at all stages of growth	3	NW
tansy ragwort	SEJA	<i>Senecio jacobaea</i>	B	Forb	Poisonous to horses, cattle, and pigs; animals grazing tansy can produce tainted milk, may result in potentially toxic residue in honey	1	NCR
tansy, common	TAVU	<i>Tanacetum vulgare</i>	P	Forb	Dense stands degrade forage value; toxicity issues for humans and livestock	1	NR
teasel, common	DIFU	<i>Dipsacus fullonum</i>	B	Forb	Forms dense stands of prickly, unpalatable plants; degrades habitat and reduces accessibility	1	NR

COMMON NAME	4-LETTER WEED CODE	SCIENTIFIC NAME	LIFE CYCLE ¹	GROWTH FORM	THREAT	CATE-GORY	STATUS
thistle, bull	CIVU	<i>Cirsium vulgare</i>	B	Forb	Aggressive competitor, unpalatable for cattle	2	NW
thistle, Canada	CIAR	<i>Cirsium arvense</i>	P	Forb	Aggressive competitor, unpalatable; decreases forage; host species for several agricultural pests	2	NW
thistle, Italian	CAPY	<i>Carduus pycnocephalus</i>	A	Forb	Spiny, unpalatable, and excludes native vegetation and degrades habitat. Spreads quickly and can be a fire hazard in summer season.	1	NR
whitetop, hairy	LEAP	<i>Lepidium appelianum</i>	P	Forb	Monocultures displace desirable plants; unpalatable; can be form toxic to cattle	1	NR
yellow archangel	LAGA	<i>Lamiastrum galeobdolon</i>	P	Forb - vine	Aggressive invader, competes understory species, degrades wildlife habitat	1	NCR
wild basil savory	CLVU	<i>Clinopidium vulgare</i>	P	Forb	Aggressive invader, competes understory species, degrades wildlife habitat	2	WR
¹ A - annual; B - biennial; P - perennial							
ISSC = Invasive Species of Special Concern; NCR = Noxious, Control Required; NR = Noxious, Rare; NW = Noxious, Widespread							

APPENDIX C: COUNTY ROADSIDE TREATMENT ACTIVITIES

This table includes all county roadsides managed for noxious weeds in 2022 under the Clallam County Road Department IWM Plan. The table is sorted alphabetically by road name. Definitions for the headings can be found at the end of the table. Species treated are listed alphabetically by the assigned 4-letter code (see Appendix B); 4-letter codes shown in bold are regulated noxious weeds and required for control in Clallam County.

We completed **128 treatments** on **88 county roads** over **67 days** and controlled **26 species**. In total, we treated **186 miles** (including retreatments/spot treatments) and examined **278 acres** of county roadside. For retreatments, Miles Examined, Acres Examined, and Acres Treated were counted in full in order to correctly calculate application rates and Solid Acres.

ROAD NAME	TREATMENT METHOD ¹	TREATMENT DATE	MILES TREATED	ACRES EXAMINED ²	ACRES TREATED ³	SOLID CHEMICAL ACRES TREATED ⁴	SOLID MANUAL ACRES TREATED ⁵	TREATED SPECIES LIST ⁶	YEARS TREATED
3 Crabs Rd	M	10/10/22	1.40	1.70	0.001	0.000	0.0001	COMA	2018-2022
Atterberry Rd	H	05/04/22	0.20	0.40	0.20	0.003	0.0000	CYSC	2019, 2022
Bear Creek Rd	M	10/20/22	2.10	2.50	0.001	0.000	0.0001	JAVU	2020-2022
Benson Rd	H	06/29/22	1.10	2.13	2.13	0.075	0.0000	CIAR, CYSC, GERO, HIAU	2020, 2022
Black Diamond Rd	M/H	08/15/22	4.40	5.30	5.30	0.069	0.0001	CEMO , CIAR, CYSC, JAVU	2017-2022
Blue Mountain Rd	H	07/25/22	1.00	1.50	1.50	0.046	0.0000	CEMO , CYSC*, DIFU , JAVU	2017-2022
Camp Hayden Rd	M	08/16/22	3.50	6.80	6.80	0.000	0.0006	CEMO , JAVU	2018-2022
Carlsborg Rd	M	04/25/22	0.10	0.05	0.05	0.000	0.0009	COMA	2018-2022
	M	06/28/22	0.001	0.001	0.001	0.000	0.0001	COMA	
	M	07/05/22	0.001	0.001	0.001	0.000	0.0001	COMA	
Cays Rd	M	04/11/22	0.01	0.1	0.1	0.000	0.0001	COMA	2019-2022
	M	06/28/22	0.001	0.001	0.001	0.000	0.0001	COMA	
Cooper Ranch Rd	H	05/31/22	0.80	1.9	1.9	0.063	0.0000	DIPU, GERO, JAVU , RUAR	2019-2022
Coulter Rd	M	02/25/22	0.04	0.05	0.005	0.000	0.0008	COMA*	2020-2022
	M	09/28/22	0.40	0.50	0.001	0.000	0.0001	JAVU	
Crescent Beach Rd	M	08/16/22	3.50	6.80	2.40	0.000	0.0013	JAVU	2020-2022
Dawley Rd	M	03/02/22	0.01	0.60	0.01	0.000	0.0006	COMA	2020-2022

ROAD NAME	TREATMENT METHOD ¹	TREATMENT DATE	MILES TREATED	ACRES EXAMINED ²	ACRES TREATED ³	SOLID CHEMICAL ACRES TREATED ⁴	SOLID MANUAL ACRES TREATED ⁵	TREATED SPECIES LIST ⁶	YEARS TREATED
Dawley Rd (cont.)	M	04/20/22	0.70	0.85	0.85	0.000	0.0001	COMA	
Deer Park Rd	M	10/17/22	1.70	2.00	0.01	0.000	0.0003	JAVU	2018-2022
Diamond Point Rd	M	08/03/22	4.00	7.76	7.76	0.000	0.0019	JAVU	2018-2022
Dietz Rd	M	10/17/22	0.50	0.60	0.01	0.000	0.0003	JAVU	2021-2022
East Beach Rd	M/H	08/09/22	0.20	0.40	0.40	0.080	0.0001	CEMO, CIVU, CYSC, JAVU	2017-2022
East Lyre River Rd	M/H	08/30/22	0.60	1.20	1.20	0.005	0.0001	CEMO, CLVU, JAVU	2017-2022
	M/H	09/08/22	0.60	1.20	0.60	0.002	0.0001	CEMO, JAVU	
East Sequim Bay Rd	H	07/20/22	4.10	8.0	8.0	0.264	0.0000	CIAR, CYSC, GERO, JAVU, RUAR*	2019-2022
Eden Valley Rd	M	08/30/22	1.80	3.50	3.50	0.000	0.0001	CEMO, JAVU	2017-2022
Elwha River Rd	H	07/06/22	1.90	3.70	3.70	0.379	0.0000	DIPU, GERO, HYPE, JAVU, RUAR	2019-2022
Farrington Rd	M/H	07/27/22	0.90	0.70	0.23	0.011	0.0003	JAVU	2017-2022
Fasola Rd	M	04/05/22	0.10	0.01	0.01	0.000	0.0007	COMA	2019-2022
	M	04/18/22	0.002	0.01	0.001	0.000	0.0002	COMA	
	M	06/28/22	0.09	0.06	0.06	0.000	0.0019	DIFU	
	M	09/28/22	1.00	1.50	0.60	0.000	0.0009	DIFU	
Freshwater Park	M/H	08/30/22	1.30	2.50	2.50	0.023	0.0020	CYSC, JAVU	2022
Gellor Rd	H	05/04/22	0.30	0.60	0.60	0.115	0.0000	CYSC	2022
Gilbert Rd	M	04/11/22	0.10	0.20	0.20	0.000	0.0016	COMA	2020-2022
	H	05/17/22	0.03	0.10	0.10	0.003	0.0000	COMA, RUAR	
Glass Rd	M	10/17/22	1.20	1.40	0.001	0.000	0.0003	JAVU	2021-2022
Gossett Rd	M	06/15/22	0.90	1.93	1.93	0.000	0.0006	CEMO, DIPU, JAVU	2017-2022
	M	08/30/22	0.90	1.70	0.001	0.000	0.0001	CEMO	
Granite Rd	M	02/03/22	0.09	0.18	0.01	0.000	0.0003	CEMO, CYSC	2021-2022
	H	06/29/22	0.30	0.90	0.90	0.115	0.0000	CEMO, CYSC, HYPE	

ROAD NAME	TREATMENT METHOD ¹	TREATMENT DATE	MILES TREATED	ACRES EXAMINED ²	ACRES TREATED ³	SOLID CHEMICAL ACRES TREATED ⁴	SOLID MANUAL ACRES TREATED ⁵	TREATED SPECIES LIST ⁶	YEARS TREATED
Granite Rd (cont.)	H	08/03/22	0.30	1.15	1.15	0.207	0.0000	CEMO, CIAR*, CIVU*, CYSC*, GERO	
Grant Rd	H	06/01/22	0.30	0.10	0.10	0.003	0.0000	CEST	2018, 2022
Happy Valley Rd	M	07/05/22	0.001	0.001	0.001	0.000	0.0001	COMA	2017-2022
	H	07/18/22	5.70	11.00	11.00	0.057	0.0000	CEMO, DIFU, JAVU, COMA	
	M/H	08/31/22	1.20	2.50	2.50	0.057	0.0003	CEMO, DIFU, JAVU	
	M/H	09/27/22	3.00	5.00	3.00	0.069	0.0001	CEMO, CIAR, CIVU, JAVU, DIFU	
Harrison Rd	M	02/22/22	0.21	0.41	0.41	0.000	0.0009	BEIN	2021-2022
Henry Boyd Rd	M	10/17/22	0.70	0.85	0.01	0.000	0.0001	JAVU	2021-2022
Herrick Rd	M	02/03/21	0.04	0.08	0.08	0.000	0.0006	CYSC	2021-2022
Hoko-Ozette Rd	M	08/02/22	17.90	21.70	21.70	0.000	0.0125	CYSC*, JAVU	2017-2022
	M	10/20/22	8.80	10.50	0.01	0.000	0.0047	JAVU	
Hooker Rd	M	05/02/22	0.003	0.003	0.003	0.000	0.0001	COMA	2020-2022
Johnson Creek Rd	M	07/18/22	1.10	2.10	2.10	0.000	0.0001	CEMO	2017-2022
Kitchen-Dick Rd	M	04/11/22	0.01	0.10	0.10	0.000	0.0001	LEAP	2017-2022
	M	08/23/22	3.20	4.00	0.01	0.000	0.0005	COMA	
	M	10/12/22	3.20	4.00	0.001	0.000	0.0001	CEMO	
Laird Rd	H	07/06/22	0.90	1.74	1.74	0.086	0.0000	CIAR, CIVU, CYSC, JAVU	2017-2022
Little Loop Dr	M	10/17/22	0.80	1.00	0.01	0.000	0.0005	JAVU	2020-2022
Little River Rd	M/H	08/16/22	5.00	7.00	7.00	0.080	0.0001	CEMO, JAVU	2017-2022
Lost Mountain Rd	M	10/24/22	5.20	7.50	2.90	0.000	0.0018	CEMO, JAVU	2019-2022
Lotzgesell Rd	M	04/11/22	1.90	1.90	1.90	0.000	0.0021	COMA	2018-2022
	H	05/17/22	0.01	0.10	0.10	0.0003	0.0000	COMA	
Lower Elwha Rd	M	10/26/22	2.00	2.40	0.01	0.000	0.0002	JAVU	2019-2022

ROAD NAME	TREATMENT METHOD ¹	TREATMENT DATE	MILES TREATED	ACRES EXAMINED ²	ACRES TREATED ³	SOLID CHEMICAL ACRES TREATED ⁴	SOLID MANUAL ACRES TREATED ⁵	TREATED SPECIES LIST ⁶	YEARS TREATED
Madrona Way	M/H	03/31/22	0.10	0.01	0.01	0.000	0.0011	JAVU	2017, 2019-2020, 2022
Marine Dr	M	03/02/22	0.010	0.1	0.01	0.000	0.0014	COMA	2019-2022
Mary Clark Rd	H	07/12/22	2.90	4.20	4.20	0.115	0.0000	CYSC, DIPU*, JAVU	2019-2022
Mary Clark Rd	H	07/13/22	5.60	3.90	3.90	0.275	0.0000	CIAR, CIVU, CYSC, DIPU*, GERO*, JAVU	
Mina Smith Rd	M	10/18/22	3.30	4.00	3.00	0.000	0.0008	JAVU	2018-2022
Mount Pleasant Rd	M	10/17/22	4.00	5.00	0.001	0.000	0.0002	JAVU	2020-2022
N Brown Rd	H	08/23/22	0.40	1.20	0.002	0.0002	0.0000	CEMO	2020, 2022
Old Blyn Hwy	M	01/31/22	0.04	0.09	0.09	0.000	0.0029	COMA, JAVU	2018-2022
	H	07/20/22	2.10	4.07	4.07	0.321	0.0000	COMA, CIAR, CYSC, GERO, HYPE	
	M	09/27/22	2.10	3.00	0.001	0.000	0.0001	COMA, JAVU	
Old Olympic Hwy	M	09/28/22	9.60	14.00	0.03	0.000	0.0008	DIFU, JAVU	2017-2022
	M	10/19/22	0.10	0.1	0.001	0.000	0.0001	JAVU	
Oxenford Rd	M	02/03/22	0.09	0.18	0.17	0.000	0.0005	CYSC	2022
Palo Alto Rd	H	07/19/22	7.80	11.30	11.30	0.333	0.0000	CEMO, CIAR, CIVU, GERO, HYPE, JAVU	2017-2022
Pinnell Rd	M	02/08/22	0.01	0.01	0.01	0.000	0.0005	COMA	2017, 2020, 2022
	M	02/24/22	0.70	0.85	0.001	0.000	0.0005	COMA	
Place Rd	H	06/29/22	2.50	4.80	4.80	0.333	0.0000	CEMO, CIAR, CYSC, GERO, JAVU	2021-2022
Port Williams Rd	M	06/14/22	2.30	4.46	0.20	0.000	0.0001	JAVU	2020-2022
	M	09/28/22	2.30	4.00	1.13	0.000	0.0020	DIFU*, JAVU	
	M	10/10/22	0.25	0.40	0.40	0.000	0.0029	DIFU, CEMO, JAVU	
Power Plant Rd	M	02/03/22	0.80	1.00	1.00	0.000	0.0006	CYSC	2019-2022

ROAD NAME	TREATMENT METHOD ¹	TREATMENT DATE	MILES TREATED	ACRES EXAMINED ²	ACRES TREATED ³	SOLID CHEMICAL ACRES TREATED ⁴	SOLID MANUAL ACRES TREATED ⁵	TREATED SPECIES LIST ⁶	YEARS TREATED
Power Plant Rd (cont.)	H	07/11/22	0.80	0.60	0.60	0.138	0.0000	CEMO, CIVU, CYSC, GERO, JAVU, CEMO2	
Quillayute Airport Rd	M	10/18/22	0.30	0.40	0.23	0.000	0.0023	JAVU	2021-2022
Quillayute Rd	M	10/14/22	1.30	1.75	0.50	0.000	0.0008	JAVU	2020-2022
	M	10/18/22	5.60	7.00	3.00	0.000	0.0027	JAVU	
Reynolds Rd	M	09/08/22	0.40	0.78	0.35	0.000	0.0014	CEMO, JAVU	2022
Rhododendron Dr	M	10/31/22	0.86	1.00	0.001	0.000	0.0001	JAVU	2017, 2019-2020, 2022
Richwine Rd	M	10/18/22	0.40	0.50	0.01	0.000	0.0011	JAVU	2021-2022
S Airport Rd	M	08/30/22	0.50	0.80	0.40	0.000	0.0001	DIFU, JAVU	2022
S Bean Rd	M	10/26/22	0.40	0.50	0.03	0.000	0.0013	CEMO	2022
Salal Way	M	03/31/22	0.20	0.82	0.01	0.000	0.0011	JAVU	2017, 2022
Sherwood Rd	H	03/31/22	0.10	0.10	0.10	0.001	0.0000	JAVU	2017-2020, 2022
Sunshine Plz	M	03/31/22	0.23	0.45	0.003	0.000	0.0028	JAVU	2017, 2020, 2022
Thornton Dr	M	10/10/22	1.50	1.80	0.02	0.000	0.0010	JAVU	2020-2022
Towne Rd	M	04/06/22	0.10	0.01	0.01	0.000	0.0009	COMA	2018-2022
	M	07/05/22	0.001	0.001	0.001	0.000	0.0001	COMA	
Township Line Rd	M	10/17/22	1.70	2.00	0.02	0.000	0.0005	JAVU	2018-2022
Turnstone Ln	H	06/01/22	0.70	1.20	1.20	0.017	0.0000	BUDA, CEST , CRMO, CYSC, DACA*, RUAR	2017-2022
Voice Of America Rd	M	04/11/22	0.25	1.00	1.00	0.000	0.0015	COMA	2019-2020, 2022
W Edgewood Dr	M	10/12/22	2.30	3.00	0.001	0.000	0.0001	CEMO	2017-2022
W Hendrickson Rd	H	04/28/22	0.8	1.20	1.20	0.023	0.0000	COMA, CIVU, DIFU, GERO, RUAR	2018, 2020, 2022

ROAD NAME	TREATMENT METHOD ¹	TREATMENT DATE	MILES TREATED	ACRES EXAMINED ²	ACRES TREATED ³	SOLID CHEMICAL ACRES TREATED ⁴	SOLID MANUAL ACRES TREATED ⁵	TREATED SPECIES LIST ⁶	YEARS TREATED
W Washington St	M/H	06/01/22	0.30	3.40	3.40	0.207	0.0002	ANCA*, CEST, COMA, DALA, RUAR*	2017-2022
	H	08/03/22	0.40	1.80	1.80	0.046	0.0000	CEST	
	M/H	09/22/22	0.15	1.15	1.15	0.002	0.0001	CEST	
W Edwards Rd ⁷	M	02/03/21	0.02	0.04	0.04	0.000	0.0001	CEMO	2022
Ward Rd	H	03/07/22	0.10	0.07	0.07	0.001	0.0000	LAGA	2018-2022
	H	04/19/22	1.60	3.20	3.20	0.184	0.0000	CIAR*, CIVU*, COMA, GERO*, RUAR*	
	H	05/17/22	1.70	0.54	0.54	0.011	0.0000	COMA, POBO, SYOF	
Washington Harbor Rd	H	03/29/22	1.00	0.94	0.94	0.089	0.0000	COMA	2019, 2022
	H	05/05/22	0.08	0.02	0.02	0.023	0.0000	COMA	
Washington St	M	10/20/22	0.40	0.5	0.004	0.000	0.0022	JAVU	2022
Wentworth Rd	M	10/18/22	1.20	1.50	0.001	0.000	0.0001	JAVU	2018-2022
West Lyre River Rd	M/H	08/30/22	0.60	1.20	1.20	0.017	0.0000	CEMO, JAVU	2017-2022
West Sequim Bay Rd	M	03/30/22	0.10	0.12	0.05	0.000	0.0031	COMA	2019-2022
Whiskey Creek Beach Rd	M/H	07/27/22	1.60	0.70	0.64	0.017	0.0003	CIAR*, CYSC, GERO*, JAVU	2017-2022
Whitcomb-Diimmel Rd	M	10/18/22	0.50	0.75	0.01	0.000	0.0029	JAVU	2020-2022
Woodcock Rd	M	03/14/22	0.01	0.006	0.006	0.000	0.0006	COMA	2017-2022
	M	04/18/22	0.47	0.57	0.46	0.000	0.0011	COMA	
	M	09/28/22	1.75	2.50	0.005	0.000	0.0002	DIFU	
Woods Rd	H	06/16/22	0.30	1.09	1.09	0.092	0.0000	CYSC, GERO, HYPE*, JAVU, RUAR*	2018-2022
	M/H	06/21/22	1.30	3.15	3.15	0.953	0.0001	DIPU, GERO, JAVU, RUAR*	
	H	06/22/22	1.20	2.32	2.32	0.207	0.0000	DIPU, GERO, JAVU	
	H	08/01/22	1.70	3.30	3.30	0.184	0.0000	CLVU, CYSC, DIPU*, GERO, JAVU, LALA*	
Wye Rd	M	08/30/22	0.30	1.20	0.60	0.000	0.0003	JAVU	2019-2022

ROAD NAME	TREATMENT METHOD ¹	TREATMENT DATE	MILES TREATED	ACRES EXAMINED ²	ACRES TREATED ³	SOLID CHEMICAL ACRES TREATED ⁴	SOLID MANUAL ACRES TREATED ⁵	TREATED SPECIES LIST ⁶	YEARS TREATED
TOTAL: 88 unique roads	128 treatments	67 days	185.97	278.05	176.35	5.401	0.0839	26 unique species; 10 regulated species	

*Non-priority species treated intermittently, meaning the entire population was not controlled during treatment

¹**M** – Manual control; **H** – Chemical control; **M/H** – Combination of manual and chemical control

²**Examined Acres** – The total area searched for noxious weeds while crew was involved in treatment activities

³**Treated Acres** – The gross area encompassing all treatments per road per day

⁴**Solid Chemical Treated Acres** – The estimated net area if the plants were “clumped” together; calculated using the tank mix volume applied and calibrated sprayer output

⁵**Solid Manual Acres** – The estimated net area controlled by any manual means (pulling, digging, cutting, etc.) if the plants were “clumped” together; calculated by number of plants removed

⁶**Species Treated** – The 4-Letter Weed codes correspond to the species’ scientific name and can be found in Appendix B. Bolded species are regulated noxious weeds required for control in Clallam County

⁷Roads that were added to the treatment list and treated for the first time this year

APPENDIX D: COUNTY ROCK SOURCE/SOIL DISPOSAL SITE TREATMENT ACTIVITIES

These tables include all County rock sources/spoil disposal sites (pits) managed for noxious weeds in 2022 under the Clallam County Road Department IWM Plan. The table is sorted alphabetically by pit name. Definitions for the headings can be found at the end of the table. Species treated are listed alphabetically by the assigned 4-letter code (see Appendix B); 4-letter codes shown in bold are regulated noxious weeds and required for control in Clallam County.

We completed treatments in **23 pits** over **36 days** and controlled **27 species**. Two pits were surveyed. In total we treated **367 acres** (including retreatments) and surveyed **390 acres**. For retreatments, Acres Examined and Acres Treated were counted in full in order to correctly calculate application rates and Solid Acres.

PIT NAME	TREATMENT METHOD ¹	TREATMENT DATE	ACRES EXAMINED ²	ACRES TREATED ³	SOLID CHEMICAL TREATED ACRES ⁴	SOLID MANUAL TREATED ACRES ⁵	TREATED SPECIES LIST ⁶
Blue Mountain Transfer Station	H	03/14/22	2.3	2.3	0.069	0.0000	CEMO , CIAR, CIVU, CYSC, PHAR
	M/H	09/12/22	2.7	2.7	0.006	0.0002	COMA , CYSC
Blyn Pit	M/H	03/02/22	16.9	16.9	0.585	0.0009	BUDA, CEMO , COMA , CYSC*, DACA, GERO, RUAR*, JAVU
	M/H	09/07/22	18.6	18.6	0.069	0.0001	COAR, COMA , LALA, DIFU , JAVU
Clallam Bay Storage Yard	Survey	10/20/22	3.6	0.0	0.000	0.0000	
District 1 Shop	H	03/03/22	3.6	3.6	0.264	0.0000	CEST , CIVU, RUAR
	H	06/01/22	1.0	1.0	0.069	0.0000	CEST , CIAR, CIVU, HYPE
District 2 Shop	M/H	03/18/22	4.7	4.7	0.574	0.0000	COMA , CYSC, GERO
Herrick Gravel	H	03/28/22	10.0	10.0	0.275	0.0000	CEMO , CIVU, CYSC, GERO, RUAR
	H	07/06/22	11.8	11.8	0.149	0.0000	CEMO , CYSC, DIPU*, HYPE*
	H	09/12/22	11.8	11.8	0.138	0.0000	CEMO , CYSC, LALA
	H	10/04/22	7.0	7.0	0.052	0.0000	CEMO , GERO*, LALA
Hogback Pit	M	08/31/22	1.8	0.0	0.000	0.0000	TAVU
Hoko-Ozette Rd MP 10	M/H	08/02/22	2.9	2.9	0.046	0.0008	GERO, JAVU
Hoko-Ozette Rd MP 13	M	08/02/22	1.4	0.0	0.000	0.0013	GERO, JAVU
Hoko-Ozette Rd MP 4.5	M	08/02/22	1.0	0.5	0.000	0.0041	GERO, JAVU
	M	10/20/22	1.0	0.5	0.000	0.0031	CYSC, GERO, JAVU
Hwy 101 Storage Yard	M	06/10/22	1.4	0.0	0.000	0.0008	COMA

PIT NAME	TREATMENT METHOD ¹	TREATMENT DATE	ACRES EXAMINED ²	ACRES TREATED ³	SOLID CHEMICAL TREATED ACRES ⁴	SOLID MANUAL TREATED ACRES ⁵	TREATED SPECIES LIST ⁶
Kirner Pit	M/H	02/07/22	30.0	30.0	0.321	0.0004	ARMI*, CEMO, COMA, CYSC*, RUAR*
	H	04/06/22	30.0	30.0	0.253	0.0000	CEST, CIVU, COMA, CYSC, RUAR
	H	04/19/22	15.0	15.0	0.253	0.0000	CEST, COMA, CYSC, RUAR*, VIMI
	H	05/10/22	0.1	0.1	0.057	0.0000	LAGA
	H	06/08/22	0.2	0.2	0.003	0.0000	LAGA
	M/H	08/31/22	1.0	1.0	0.029	0.0005	COMA, EULA
	H	09/13/22	13.0	13.0	0.046	0.0000	COMA, CEST, CIIN, CYSC, RUAR, LUAR*
La Push "Ballard" Pit	M/H	08/29/22	3.0	3.0	0.080	0.0009	CIAR*, CYSC*, JAVU, LALA, RUAR, RULA
Lake Creek Pit	M/H	08/29/22	15.1	15.1	0.333	0.0025	CIAR, CIVU, CYSC*, JAVU, RUAR*, RULA*
Little River Pit	H	08/16/22	1.0	1.0	0.040	0.0000	CEMO, CIAR
Lower Elwha Pit	Survey	10/26/22	2.0	0.0	0.000	0.0000	
McInnes Pit	H	02/25/22	5.5	5.5	0.298	0.0000	ANCA*, BRRA*, CEMO, COMA, RUAR
	H	04/19/22	5.5	5.5	0.413	0.0000	BRRA, CAPY, CEMO, CIIN, CIAR, CIVU, COMA, CYSC, DIFU, GERO, RUAR
	M/H	08/31/22	5.5	5.5	0.230	0.0038	CEMO, CEST, COMA, DIFU
	H	09/13/22	5.5	5.5	0.092	0.0000	CIAR, CIIN, CIVU, COMA
Morse Creek Pit	M/H	02/03/22	1.0	1.0	0.001	0.0045	COMA
	H	02/14/22	5.0	5.0	0.275	0.0000	CIVU, COMA, CYSC*, GERO, RUAR*
	H	03/08/22	10.0	10.0	0.390	0.0000	CIAR*, COMA*, CYSC*, RUAR*
	M/H	03/09/22	19.9	19.9	0.413	0.0009	CIVU, CYSC, DIPU, HYPE*, RUAR*
	H	03/10/22	1.0	1.0	0.138	0.0000	CIAR, CIVU, CYSC, RUAR, TAVU
	H	04/26/22	2.0	2.0	0.046	0.0000	CIVU*, COMA, PHAR*, RUAR*, TAVU
Piedmont Pit	M/H	08/09/22	5.4	5.4	0.121	0.0004	CEMO, CIAR*, CIVU*, CYSC, DIPU*, GERO, JAVU
Place Pit	H	02/10/22	7.2	7.0	0.413	0.0000	CYSC, DIFU, GERO, RUAR, JAVU
	M/H	09/19/22	4.9	4.9	0.115	0.0000	CIAR, CYSC, DIFU, LALA, PHAR

PIT NAME	TREATMENT METHOD ¹	TREATMENT DATE	ACRES EXAMINED ²	ACRES TREATED ³	SOLID CHEMICAL TREATED ACRES ⁴	SOLID MANUAL TREATED ACRES ⁵	TREATED SPECIES LIST ⁶
Quillayute Pit	H	05/03/22	13.5	11.4	1.033	0.0000	CYSC* , DIPU* , HYPE* , JAVU , RUAR*
	M/H	08/29/22	13.5	13.8	0.023	0.0027	CYSC* , JAVU
Ranger Pit	M/H	02/10/22	14.3	14.3	0.643	0.0008	CIVU , CYSC , DIFU* , PHAR* , RUAR*
	M/H	09/19/22	25.0	25.0	0.310	0.0003	BUDA , CEMO , CIAR , COAR , CYSC , JAVU , LALA , LUAR , PHAR , RUAR* , VIMA
	M/H	10/26/22	10.0	2.0	0.069	0.0002	CEMO , CIAR , CYSC , DIFU , LUAR , PHAR , RUAR/RULA
Sequim Storage Yard	H	03/03/22	2.7	2.1	0.172	0.0000	BRRA , CIIN , COMA , PHAR , RUAR
	H	06/01/22	2.4	2.4	0.138	0.0000	CEMO , CEST , CIIN* , CIAR , CIVU , COMA , DIFU , LEVU* , RUAR*
	M/H	08/03/22	2.7	2.7	0.002	0.0000	CEMO , CEST , COMA
Umbrella Creek Pit	M/H	08/02/22	3.0	2.1	0.172	0.0001	GERO , JAVU , RUAR/RULA*
Whitcomb-Diimmel Pit	H	05/17/22	10.8	10.8	0.488	0.0000	CIVU , CYSC , DIPU* , HYPE , JAVU , RUAR*
TOTAL: 25 unique pits	52 Treatments	36 days	390.2	367.5	9.706	0.0293	27 unique species; 10 regulated species

*Non-priority species treated intermittently, meaning the entire population was not controlled during treatment

¹M – Manual control; H – Chemical control; M/H – Combination of manual and chemical control

²Examined Acres – The total area searched for noxious weeds while crew was involved in treatment activities

³Treated Acres – The gross area encompassing all treatments per pit per day

⁴Solid Chemical Treated Acres – The estimated net area if the plants were “clumped” together; calculated using the tank mix volume applied and calibrated sprayer output

⁵Solid Manual Acres – The estimated net area controlled by any manual means (pulling, digging, cutting, etc.) if the plants were “clumped” together; calculated by number of plants removed

⁶Species Treated – The 4-Letter Weed codes correspond to the species’ scientific name and can be found in Appendix B. Bolded species are regulated noxious weeds required for control in Clallam County

APPENDIX E: COUNTY SPECIAL SITE TREATMENT ACTIVITIES

This table includes all “Special Sites” managed for noxious weeds in 2022 under the Clallam County Road Department IWM Plan. This table is sorted alphabetically by site name. Definitions for the headings can be found at the end of the table. Species treated are listed alphabetically by the assigned 4-letter code (see Appendix B); 4-letter codes shown in bold are regulated noxious weeds and required for control in Clallam County.

We completed **18 treatments** on **14 Special Sites** over **15 days** and controlled **14 species**. In total we treated **22.51 acres** (including retreatments) and examined **23.61 acres**. For retreatments, Acres Examined and Acres Treated were counted in full in order to correctly calculate application rates and Solid Acres.

SITE NAME	TREATMENT METHOD ¹	TREATMENT DATE	ACRES EXAMINED ²	ACRES TREATED ³	SOLID CHEMICAL TREATED ACRES ⁴	SOLID MANUAL TREATED ACRES ⁵	TREATED SPECIES LIST ⁶
Blake Sand & Gravel Ridge	M	02/15/22	0.25	0.250	0.000	0.0351	CAPY , CIVU
	M	03/31/22	1.0	1.000	0.000	0.0057	CAPY
Carlsborg Road Fire District ⁷	H	03/11/22	0.34	0.34	0.046	0.0000	COMA , RUAR*
Cays & Lamar Intersection	M	02/15/22	0.5	0.500	0.000	0.0103	CAPY , CIVU*, RUAR*
	M	03/31/22	0.75	0.750	0.000	0.0108	CAPY
	H	04/22/22	0.80	0.800	0.069	0.0000	CAPY
Dungeness Dike (West of School House)	M	01/20/22	6.25	6.250	0.000	0.0396	COMA
	H	04/06/22	2.2	2.200	0.115	0.0000	COMA
E Ennis Creek Rd ⁷	H	03/08/22	0.66	0.07	0.046	0.000	LAGA
E Greentree Ln ⁷	H	03/08/22	0.05	0.046	0.023	0.000	LAGA
Hoko-Ozette Culvert (MP 8.8)	M	10/20/22	0.75	0.340	0.000	0.0061	CYSC
Lower Dam Interpretive Center	H	03/18/22	0.90	0.900	0.138	0.0000	CIVU, COMA
O'Brien Rd ROW Parcel ⁷	H	09/13/22	1.40	1.400	0.367	0.0000	CIAR, HYPE
ODT -- Hwy 101 crossing in Sol Duc ⁷	H	06/30/22	0.36	0.360	0.069	0.0000	HISA
ODT -- Gossett Rd to Gossett Bridge	M/H	06/15/22	4.80	4.800	0.172	0.0032	GERO, JAVU , RUAR*
ODT -- Priest Rd	M	04/15/22	0.10	0.005	0.000	0.0006	COMA
ODT -- Berm on Old Olympic Highway	H	02/04/22	1.50	1.500	0.275	0.0000	ANCA*, BRRA*
Ward Bridge Restoration	H	05/04/22	1.0	1.000	0.029	0.0000	BUDA, COMA , CYSC, GERO, RUAR

SITE NAME	TREATMENT METHOD ¹	TREATMENT DATE	ACRES EXAMINED ²	ACRES TREATED ³	SOLID CHEMICAL TREATED ACRES ⁴	SOLID MANUAL TREATED ACRES ⁵	TREATED SPECIES LIST ⁶
TOTAL: 14 unique sites	18 treatments	15 days	23.61	22.51	1.349	0.1113	14 unique species; 5 regulated species

*Non-priority species treated intermittently, meaning the entire population was not controlled during treatment

¹**M** – Manual control; **H** – Chemical control; **M/H** – Combination of manual and chemical control

²**Examined Acres** – The total area searched for noxious weeds while crew was involved in treatment activities

³**Treated Acres** – The gross area encompassing all treatments per site per day

⁴**Solid Chemical Treated Acres** – The estimated net area if the plants were “clumped” together; calculated using the tank mix volume applied and calibrated sprayer output

⁵**Solid Manual Acres** – The estimated net area controlled by any manual means (pulling, digging, cutting, etc.) if the plants were “clumped” together; calculated by number of plants removed

⁶**Species Treated** – The 4-Letter Weed codes correspond to the species’ scientific name and can be found in Appendix B. Bolded species are regulated noxious weeds required for control in Clallam County

⁷Sites that were added to the treatment list and treated for the first time this year

APPENDIX F: HERBICIDE VOLUMES BY COUNTY ROADS

The table alphabetically lists the County roads that received chemical treatment in 2022. The table includes the trade name of herbicides used and amounts applied in ounces or grams per treated road section (Note: 1 oz. equals 2 tablespoons). The **Treated Road Section** lists the portions for each road where herbicide application may have occurred. Herbicide applications within the listed boundaries were only made to noxious weeds and exact treatment locations varied with individual plant locations.

In 2022 we applied a total of **3.89 gallons** of liquid herbicide on County roadsides. A combination of Milestone® and Vastlan® or Element 3A® was used on roads included in chemical treatment, a mix that was chosen for its efficacy on expected weed species. All treatment locations were posted and signs left in place for at least 24 hours.

ROAD NAME	TREATMENT DATE	TREATMENT LOCATION	MILES TREATED	MILESTONE (oz) ¹	VASTLAN (oz) ²	ELEMENT 3A (oz) ³
Atterberry Rd	05/04/22	Rilla Rd Intersection and 824 Atterberry	0.2			0.30
Benson Rd	06/29/22	Entire Rd	1.1	0.52		6.24
Black Diamond Rd	08/15/22	Entire Rd	4.4	0.50		5.70
Blue Mountain Rd	07/25/22	Entire Rd	1.0	0.30		3.80
Cooper Ranch Rd	05/31/22	Partial - RM 0 - 0.8	0.8	0.44		5.23
East Beach Rd	08/09/22	Entire Rd	0.2	0.60		6.70
East Lyre River Rd	08/30/22	Entire Rd	0.6	0.03		0.38
	09/08/22	Entire Rd	0.6	0.02		0.19
East Sequim Bay Rd	07/20/22	Entire Rd	4.1	1.84		22.10
Elwha River Rd	07/06/22	Entire Rd	1.9	2.60		31.70
Farrington Rd	07/27/22	Entire Rd	0.9	0.08		0.96
Freshwater Park	08/30/22	Entire Rd	1.3	0.16		1.92
Gellor Rd	05/04/22	0.7 mi from Blue Mountain to S McCrorie Rd	0.3			12.80
Gilbert Rd	05/17/22	Partial Rd	0.0	0.02		0.32
Granite Rd	06/29/22	Entire Rd	0.3	0.80		9.60
	08/03/22	Entire Rd	0.3	1.40		17.30
Grant Rd	06/01/22	Spot - south of County school	0.3	0.02		0.25
Happy Valley Rd	07/18/22	Entire Rd	5.7	0.40		4.80
	08/31/22	MP 2.9 to intersection with 3rd Ave - MP 4.2	1.2	0.40		4.80
	09/27/22	Haven Heights Dr to Hwy 101	3.0	0.48		5.76
Laird Rd	07/06/22	Entire Rd	0.9	0.60		7.20
Little River Rd	08/16/22	Partial Rd	5.0	0.60		6.70
Lotzgesell Rd	05/17/22	Spot	0.0	0.00		0.04
Madrona Way	03/31/22	Spot	0.1	0.01		0.06
Mary Clark Rd	07/12/22	Partial Rd - RM 3.9-6.8	2.9	0.80		9.60
	07/13/22	Partial Rd - RM 7.7-6.8 and 3.9-2.1	5.6	1.90		23.00
N Brown Rd	08/23/22	Spot	0.4	0.00		0.02

ROAD NAME	TREATMENT DATE	TREATMENT LOCATION	MILES TREATED	MILESTONE (oz) ¹	VASTLAN (oz) ²	ELEMENT 3A (oz) ³
Old Blyn Hwy	07/20/22	Entire Rd	2.1	2.23		26.70
Palo Alto Rd	07/19/22	Entire Rd	7.8	2.30		27.80
Place Rd	06/29/22	Entire Rd	2.5	2.30		27.80
Power Plant Rd	07/11/22	Entire Rd	0.8	0.96		11.50
Sherwood Rd	03/31/22	Spot	0.1	0.01		0.06
Turnstone Ln	06/01/22	Entire Rd	0.7	0.13		1.50
W Hendrickson Rd	04/28/22	Partial - Priest Rd to Nature Center	0.8	0.16		1.92
W Washington St	06/01/22	Entire Rd	0.3	1.50		18.00
	08/03/22	Entire Rd	0.4	0.30		3.80
	09/22/22	Berm by District 1 shop, both sides	0.2	0.02		0.19
Ward Rd	03/07/22	West bank of Dungeness	0.1	0.01	0.12	
	04/19/22	Entire Rd	1.6	0.80		20.50
	05/17/22	Entire Rd	1.7	0.08		1.28
Washington Harbor Rd	03/29/22	Partial Rd	1.0	0.62		7.40
	05/05/22	Just south of Cascade Bark	0.1			2.56
West Lyre River Rd	08/30/22	Entire Rd	0.6	0.12		1.44
Whiskey Creek Beach Rd	07/27/22	Entire Rd	1.6	0.10		1.40
Woods Rd	06/16/22	Partial Rd - 101 south	0.3	0.64		7.68
	06/21/22	Partial Rd - RM 0.3-1.6	1.3	6.70		80.30
	06/22/22	Partial Rd - RM 1.6-2.8	1.2	1.40		17.30
	08/01/22	Entire Rd	1.7	1.30		15.40
TOTALS: 35 roads	34 days		69.97 mi	36.18 oz	0.12 oz	462.01 oz

¹Milestone® - Active ingredient: aminopyralid; in 0.125% solution.

²Vastlan® - Active ingredient: triclopyr; in 1.5-2% solution, 25-50% solution for cut-stump application only.

³Element 3A® - Active ingredient: triclopyr; in 1.5% solution on roadsides, 25-50% solution for cut stump only.

APPENDIX G: HERBICIDE VOLUME USED IN COUNTY ROCK SOURCES

The table alphabetically lists the County rock sources and spoil sites that received chemical treatment in 2022. The table includes the trade name of herbicides used and amounts applied in ounces or grams per treatment date (Note: 1 oz. equals 2 tbsp). Herbicide was only applied within County pit boundaries to designated noxious weeds and exact locations of applications varied with individual plant locations.

In 2022 we applied a total of **14.73 gallons** of liquid herbicide and **0.34 kg** of dispersible granules in County pits. A combination of Milestone® and Vastlan® or Element 3A® was used in most pits included in chemical treatment, a mix that was chosen for its efficacy on expected weed species. Polaris® was used almost exclusively for knotweed species and reed canarygrass. Oust XP® was used as an early season treatment on poison hemlock.

PIT NAME	TREATMENT DATE	ACRES TREATED	MILESTONE (OZ) ¹	VASTLAN (OZ) ²	POLARIS (OZ) ³	ELEMENT 3A (OZ) ⁴	GARLON 3A (OZ) ⁵	RANGER PRO (OZ) ⁶	TRANSLINE (OZ) ⁷	GARLON 4 (OZ) ⁸	OUST XP (GRAMS) ⁹
Blue Mountain Transfer Station	03/14/22	2.3						15.40			9.00
	09/12/22	2.7	0.04			0.48					
Blyn Pit	03/02/22	16.9	4.00				65.20	163.20			
	09/07/22	18.6	0.32		1.28	3.84					
District 1 Shop	03/03/22	3.6			14.70			58.90			
	06/01/22	1.0	0.48			5.76					
District 2 Shop	03/18/22	4.7			16.70			128.00			
Herrick Gravel	03/28/22	10.0			15.40			20.50			3.00
	07/06/22	11.8	1.00			12.50					
	09/12/22	11.8	0.96			11.52					
	10/04/22	7.0							2.88		
Hoko-Ozette Rd MP 10	08/02/22	2.9	0.32			3.84					
Kirner Pit	02/07/22	30.0			2.60			89.60		11.50	12.00
	04/06/22	30.0	1.76			28.16		56.32			33.00
	04/19/22	15.0	0.16		6.40	2.60		25.60	0.60		12.00
	05/10/22	0.1	0.40			6.40					
	06/08/22	0.2	0.02			0.24					
	08/31/22	1.0	0.20			2.40					
	09/13/22	13.0	0.32			3.84					
La Push "Ballard" Pit	08/29/22	3.0	0.60			6.70					
Lake Creek Pit	08/29/22	15.1	2.32			27.84					
Little River Pit	08/16/22	1.0	0.28								
McInnes Pit	02/25/22	5.5			1.28		1.90				36.00
	04/19/22	5.5	1.00			15.40		61.40			36.00
	08/31/22	5.5	1.60			19.20					
	09/13/22	5.5	0.64			7.68					
Morse Creek Pit	02/03/22	1.0									
	02/14/22	5.0					5.70	38.40		17.30	18.00
	03/08/22	10.0	0.30	5.10	19.20			76.80			
	03/09/22	19.9			23.00			92.00			

PIT NAME	TREATMENT DATE	ACRES TREATED	MILESTONE (OZ) ¹	VASTLAN (OZ) ²	POLARIS (OZ) ³	ELEMENT 3A (OZ) ⁴	GARLON 3A (OZ) ⁵	RANGER PRO (OZ) ⁶	TRANSLINE (OZ) ⁷	GARLON 4 (OZ) ⁸	OUST XP (GRAMS) ⁹
Morse Creek Pit (cont.)	03/10/22	1.0			7.70						18.00
	04/26/22	2.0						10.20			6.00
Piedmont Pit	08/09/22	5.4	0.84			10.08					
Place Pit	02/10/22	7.0						115.20		34.56	
	09/19/22	4.9			6.40						
Quillayute Pit	05/03/22	11.4	2.50		7.70		38.40	115.20			90.00
	08/29/22	13.8	0.16			1.90					
Ranger Pit	02/10/22	14.3		2.84	14.08			96.00			
	09/19/22	25.0	1.80		2.60	22.10					
	10/26/22	2.0	0.24	1.92	1.92						
Sequim Storage Yard	03/03/22	2.1	0.30	2.90	7.70			15.30			
	06/01/22	2.4	1.00			11.50					
	08/03/22	2.7	0.02			0.19					
Umbrella Creek Pit	08/02/22	2.1	1.20			14.40					
Whitcomb-Diimmel Pit	05/17/22	10.8			27.20			96.96			63.75
TOTALS		233.04 acres¹⁰	24.8 oz	12.8 oz	175.9 oz	218.6 oz	111.2 oz	1275.0 oz	3.5 oz	63.4 oz	336.8 grams

¹Milestone® - Active ingredient: aminopyralid; in 0.125% solution.

²Vastlan® - Active ingredient: triclopyr; in 1.5-2% solution, 25-50% solution for cut-stump application only

³Polaris® - Active ingredient: imazapyr in 1% solution, 10% for cut stump only

⁴Element 3A® - Active ingredient: triclopyr in 1.5% solution, 25-50% solution for cut stump only

⁵Garlon 3A® - Active ingredient: triclopyr in 1.5% solution

⁶Ranger Pro® - Active ingredient glyphosate in 4% solution

⁷Transline® - Active ingredient: clopyralid in .5% solution

⁸Garlon 4® - Active ingredient: triclopyr in 1.5% solution

⁹Oust XP® - Active ingredient: sulfometuron at 3 grams per gallon of solution

¹⁰If pits were treated multiple times, acres treated were not double counted

APPENDIX H: HERBICIDE VOLUME USED IN COUNTY “SPECIAL SITES”

The table alphabetically lists the County-owned “Special Sites” that received chemical treatment in 2022. The table includes the trade name of herbicides used and amounts applied in ounces or grams per treatment date (Note: 1 oz. equals 2 tablespoons). Special Site boundaries include only Clallam County owned lands or lands with county maintenance obligations.

In 2022 we applied a total of **1.63 gallons** of liquid herbicide and **0.018 kg** of dispersible granules on “Special Sites”. A combination of Milestone® and Vastlan® or Element 3A® was used on most sites included in chemical treatment, a mix that was chosen for its efficacy on expected weed species. Polaris® or Oust XP® were used as early season treatments on poison hemlock.

Site Name	Treatment Date	Acres Treated	Milestone (oz) ¹	Vastlan (oz) ²	Polaris (oz) ³	Element 3A (oz) ⁴	Transline (oz) ⁵	Ranger Pro (oz) ⁶	Oust XP (grams) ⁷
Carlsborg Road Fire District	03/11/22	0.30			2.56				6.00
Cays & Lamar Intersection	04/22/22	0.80					1.90		
Dungeness Dike (W of School House)	04/06/22	2.20					3.20		
E Ennis Creek Rd	03/08/22	0.070	0.32			3.84			
E Greentree Ln	03/08/22	0.046	0.16			1.92			
Lower Dam Interpretive Center	03/18/22	0.90			7.68			30.70	12.00
O'Brien Rd ROW Parcel	09/13/22	1.40	2.56			30.72			
ODT -- Berm on Old Olympic Highway	02/04/22	1.50		23.00				76.80	
ODT -- crossing 101 in Sol Duc	06/30/22	0.36					3.84		
ODT -- Gossett Rd to Gossett Bridge	06/15/22	4.80	1.20			14.40			
Ward Bridge Restoration	05/04/22	1.00	0.20			3.20			
TOTALS		13.42 acres	4.40 oz	23.00 oz	10.24 oz	54.08 oz	8.94 oz	107.5 oz	18.00 g

¹Milestone® - Active ingredient: aminopyralid; in 0.125% solution.

²Vastlan® - Active ingredient: triclopyr; in 1.5-2% solution, 25-50% solution for cut-stump application only

³Polaris® - Active ingredient: imazapyr in 1% solution, 10% for cut stump only

⁴Element 3A® - Active ingredient: triclopyr in 2-2.5% solution, 25-50% solution for cut stump only

⁵Transline®- Active ingredient: clopyralid in .5% solution

⁶Ranger Pro® - Active ingredient glyphosate in 4% solution

⁷Oust XP® - Active ingredient: sulfometuron at 3 grams per gallon of solution

APPENDIX I: PILOT POLLINATOR PLANTINGS

The table below shows all plants included in Pollinator Planting projects this year. The table is arranged alphabetically by the scientific name. All plants were native and locally sourced, grown from seed collected on the Olympic Peninsula. The species were selected to provide high quality native pollinator forage with a continuous bloom period ranging from late February to late October. The species represent a mixture of native shrubs and forbs that meet roadside criteria, provide desirable habitat, and through competition, help prevent the establishment of noxious weeds and undesirable vegetation.

2022 Kugel Creek		
Scientific Name	Common Name	Quantity
<i>Acer circinatum</i>	vine maple	50
<i>Achillea millefolium</i>	common yarrow	50
<i>Aquilegia formosa</i>	crimson columbine	46
<i>Arnica latifolia</i>	broadleaf arnica	50
<i>Carex pachystachya</i>	chamisso sedge	50
<i>Festuca rubra</i>	red fescue	250
<i>Gaultheria shallon</i>	salal	100
<i>Holodiscus discolor</i>	oceanspray	25
<i>Mahonia nervosa</i>	oregon grape	50
<i>Oxalis oregana</i>	redwood sorrel	100
<i>Physocarpus capitatus</i>	pacific ninebark	25
<i>Pseudotsuga menziesii</i>	douglas fir	30
<i>Rubus parviflorus</i>	thimbleberry	25
<i>Rubus spectabilis</i>	salmonberry	25
<i>Sambucus racemosa</i>	red elderberry	50
<i>Solidago lepida</i>	western goldenrod	91
<i>Solidago multiradiata</i>	alpine goldenrod	50
<i>Symphoricarpos albus</i>	common snowberry	50
<i>Symphotrichum subspicatum</i>	douglas aster	50
<i>Tellima grandiflora</i>	fringe cups	100
<i>Thuja plicata</i>	western redcedar	50
<i>Tiarella trifoliata</i>	foam flower	50
Total Species: 21		Total Quantity : 1267

2022 Deer Park Overpass

Scientific Name	Common Name	Quantity
<i>Abronia latifolia</i>	yellow/costal sand verbena	20
<i>Achillea millefolium</i>	common yarrow/old man's pepper	500
<i>Allium cernuum</i>	nodding onion/ lady's leek	300
<i>Anaphalis margaritacea</i>	pearly everlasting	450
<i>Atennaria microphylla</i>	little leaf pussy toes	27
<i>Arbutus menziesii</i>	pacific madrone	50
<i>Canadanthus modestus</i>	giant mountain aster	108
<i>Chamaenerion angustifolium</i>	fireweed	50
<i>Dasiphora fruticosa</i>	shrubby cinquefoil	18
<i>Erigeron flettii</i>	Olympic mountain/ Flett's fleabane	72
<i>Erigeron speciosus</i>	showy fleabane	550
<i>Erysumum arenicola</i>	Cascade wallflower	16
<i>Festuca spp.</i>	fescue	2500
<i>Fragaria chiloensis</i>	beach strawberry	12
<i>Geum triflorum</i>	prairie smoke / old man's whiskers	216
<i>Grindelia integrifolia</i>	Puget Sound gumweed	300
<i>Heuchera chlorantha</i>	green-flowered alumroot	19
<i>Lathyrus japonicus</i>	sea / beach pea	3
<i>Lupinus polyphyllus</i>	big-leafed lupine	320
<i>Penstemon ovatus</i>	broadleaf beardtongue	152
<i>Penstemon procerus</i>	litteflower beardtongue	129
<i>Penstemon serrulatus</i>	coast penstemon	768
<i>Phacelia hastata</i>	silverleaf scorpionweed	93
<i>Phacelia sericea</i>	silky scorpionweed	100
<i>Pinus contorta</i>	lodgepole pine	36
<i>Prunus emarginata</i>	bitter cherry	20
<i>Quercus garryana</i>	Garry oak / Oregon white oak	20
<i>Rupertia physodes</i>	California tea/ forest surfpea	370
<i>Sedum oregonum</i>	Oregon stonecrop	124
<i>Sedum spathuylifolium</i>	broadleaf stonecrop	50
<i>Solidago lepida</i>	western goldenrod	500
<i>Solidago multiradiata</i>	Alpine goldenrod	111
<i>Symphotrcihum subspicatum</i>	Douglas aster	665
Total Species: 33		Total Quantity: 8,669

3 Crabs Planting Berm		
Scientific Name	Common Name	Quantity
<i>Eriophyllum lanatum</i>	oregon sunshine	10
<i>Grindella intergrifolia</i>	puget sound gumweed	10
<i>Ribes sanguineum</i>	red flowering currant	10
Total Species: 3		Total Quantity: 30

2022 Dawley Slump		
Scientific Name	Common Name	Quantity
<i>Aruncus dioicus</i>	goat's beard	18
<i>Gaultheria shallon</i>	salal	100
<i>Rosa gymnocarpa</i>	baldhip rose / wood rose	18
<i>Rubus spectabilis</i>	salmonberry	25
<i>Tellima grandiflora</i>	fringe cup	50
<i>Tolmeia menziesii</i>	pick-a-back plant	14
Total Species: 6		Total Quantity 225

Sequim-Dungeness & Woodcock		
Scientific Name	Common Name	Quantity
<i>Juncus communis</i>	common juniper	20
Total Species: 1		Total Quantity: 20

2022 Old Olympic HWY/ ODT Berm

Scientific Name	Common Name	Quantity
<i>Anaphalis margaritacea</i>	pearly everlasting	14
<i>Grindella intergrifolia</i>	puget sound gumweed	40
<i>Heuchera cholrantha</i>	green flowered alumroot	20
<i>Holodiscus discolor</i>	oceanspray	20
<i>Lupinus polyphyllus</i>	bingleaf lupine	150
<i>Penstemon serrulatus</i>	cascade penstemon	100
<i>Philadelphus lewisii</i>	mock-orange	12
<i>Physocarpus capitatus</i>	pacific ninebark	20
<i>Ribes saguineum</i>	red flowering currant	30
<i>Rubus parviflorus</i>	thimbleberry	48
<i>Solidago lepida</i>	western goldenrod	50
<i>Symphoricarpos albus</i>	snowberry	18
Total Species: 12		Total Quantity 522

Grand Total Of Species: 62		Grand Total Quantity: 10,733
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APPENDIX J: PROTOCOLS

Project selection:

The focus of the Clallam County Road Department 2021 IWM was the control of regulated noxious weeds and invasive, non-native weeds of special concern on Clallam County rights-of-way. The 2021 IWM Plan treatment priorities were:

1. Control of Category 1 regulated weeds on county roadsides in accordance with state law.
2. Control of Category 1 regulated weeds and select weeds in all county rock sources.
3. Control of Category 1 and 2 weeds at locations with most impact to local agriculture.
4. Control of Category 1 and 2 weeds at locations with most impact to local forestry.
5. Control of non-native, invasive weeds that interfere with the safety or function of County roadsides or additional non-roadside management areas
6. Control of Category 1 and 2 weeds at locations requested by the public and local agencies.

In addition to the prioritized locations listed in the 2021 Plan, locations suitable for manual control during periods of inclement weather and locations discovered to fit “early detection, rapid response” criteria were added to 2021 projects.

Control Methods:

Chemical:

- Used only EPA and WSDA approved formulation herbicides; all are aquatically approved formulations, with the exception of Transline, Garlon 4 and Oust XP. The products chosen offered the greatest weed selectivity, maximized worker and public safety, offered lowest application rates, and posed the lowest risk for wildlife and environment.
 - Milestone® - Active ingredient: aminopyralid; in 0.125% solution.
 - Vastlan®- Active ingredient: triclopyr; in 0.5-1.5% solution foliar application, 25-50% Cut-Stump application ONLY
 - Element 3A®- Active ingredient: triclopyr; in 1-2.5% solution
 - Polaris® - Active ingredient: imazapyr in 1% solution
 - AquaNeat® - Active ingredient: glyphosate in 0.5% solution at select locations; 25-50% Cut-Stump application ONLY
 - Transline®-Active ingredient: clopyralid in 0.5% solution
 - Round Up Pro® - Active ingredient: glyphosate; in 2-3% solution
 - Garlon 4® - Active ingredient triclopyr; in 1-2.5% solution
 - Oust XP® – Active ingredient sulfometuron methyl; 3g per acre
- Control on all proposed roadside application locations included in Plan, the plan was published online, and notice placed in local newspaper in advance of treatments.
- Offered adjacent landowner agreements/volunteer alternatives to herbicide applications.
- Posted Herbicide Application Notices (Appendix M) to clearly mark treatment areas prior to all herbicide activity. Posted at most public intersections and at intervals of approximately ½ mile depending on the road’s length.
- Herbicide Application Notices included name and mobile work contact number to contact control crew in the field during treatments.
- All roadside applications completed by licensed applicators and were conducted on foot without the use of any mechanized equipment
- Used spot treatments ONLY (no broadcast treatments), for specific weeds and included marker dye to aid in identification of treatment areas.
- Prepared herbicides in locations that minimized risk of public exposure to concentrated chemicals and potential for spills.
- Observed strict compliance to product labels and to state and local regulations; including the use of appropriate personal protective equipment as described by product labels.

Physical:

- Dug up newly established infestations of plants wherever practical and conditions favorable.
- Cut and bagged heads of flowering biennial plants wherever feasible.

Spatial Data collection and Mapping:

- NWCB staff carried a Garmin 78 pre-loaded with Montana Hunt Chip, which identified landowners (Meta data was set to NAD83 Harn, State Plane North 4601, and statue feet).
- GPS points were taken for all regulated weed species, priority species, or significant observations.
- Carried an iPhone 8 Plus (provided by WSDA) with ArcCollector Application with current Clallam County Parcel data, spatial notes and past infestation information.
- Data was mapped and symbolized to Treatment Area Maps (Pages 11-20).

Data Reporting and Monitoring:

- Supported WSU Master Gardener’s RWMT with completed Herbicide/Manual Treatment Form and details.
- Published and updated herbicide application information by road section to NWCB website once. Detailed activity data published in the appendices to this report.

APPENDIX K: WSU EXTENSION MASTER GARDENER ROADSIDE WEED MANAGEMENT MONITORING REPORT

The following report document is a copy of the report created by WSU Extension program's Master Gardeners Roadside Weed Monitoring Team (RWMT). The WSU Master Gardener program was established in 1971 to assist Extension professionals in the delivery of research-based horticultural information to communities. Today, Master Gardeners undergo 100 hours of training in topics such plant biology and species identification training to become certified Master Gardeners and provide for a variety of community services including educational programs, diagnostic services and answers to home gardening questions.

The RWMT are Master Gardeners engaged as citizen scientists to collect data and provide an independent assessment of the IWM Program and its treatment activities. Master Gardener's unique qualities as an educated, highly-trained volunteer group make the RWMT an extremely valuable asset to the IWM Program.

The 2022 RWMT consisted of seven certified Master Gardeners with a particular interest in environmental stewardship and research. Individually, the team members come from a variety of professional and academic backgrounds, including, resource management, applied sciences and natural science. The team volunteered 217 hours during which they assessed 22% of the treatments as well as assisted in the development and implementation of a variety of research projects, each of which is described in the following report.



2022

ROADSIDE WEED MANAGEMENT REPORT



CLALLAM COUNTY MASTER
GARDENERS

Clallam County Master Gardener Roadside Weed Monitoring Report – 2022

EXECUTIVE SUMMARY:

The Washington State University Clallam County Extension Master Gardener's Roadside Weed Monitoring Team (RWMT) continued its Clallam County roadside monitoring activity in 2022, surveying twenty-three (23) roadsides in the East and Central Clallam Road Commission Districts. Twenty-eight (28) Herbicide/Manual treatment forms were analyzed. Nineteen (19) weed species were evaluated for efficiency. All treatment numbers were significantly lower this year. The five (5) weeds of emphasis had an efficacy rating of 77% (Good). Overall, 2022 weed control efficacy was down to 69% (Fair). Personnel change in the Noxious Weed Office required some procedural adjustment.

Two (2) additional projects initiated in 2019 by RWMT were continued this year; one was discontinued. A new project was inaugurated. Project reports have been delivered to the Noxious Weed Office and are available upon request.

1. The No-Mow Pilot Area Project involving forested roadsides along Place and Diamond Point Roads was discontinued and did demonstrate some modest tree suppression.
2. The Olympic Discovery Trail weed species evaluation, with a survey of the noxious weed locations is in hiatus.
3. Pollinator plantings continue this year at the Deer Park interchange.
4. The new project involved twenty-one and a half miles of U S Highway 101 right-of-way (ROW) which were surveyed for specified vegetational characteristics on the north side of the highway

We are enjoying the projects, expanding our knowledge base, and look forward to further research opportunities. With six (6) years of monitoring, some distribution and eradication trends are noticeable. With the new personnel in the Noxious Weed Office, we anticipate more learning and research opportunities.

MONITORING PROJECT OVERVIEW:

Entering the sixth year of the Clallam County Integrated Weed Management Plan, Master Gardeners continued our role as an impartial monitor of the weed control efficacy along Clallam County roadsides. Master Gardeners have been monitoring Clallam County roadsides since 2012, noting specific noxious weeds. In 2017, the objective changed to monitoring undesirable weeds that were treated with herbicide and/or manually removed by the noxious weed staff. The primary purpose of the monitoring was and is to evaluate the efficacy of treatment. This emphasis continues. In this report; there will be minimal numerical analysis this year. While it may be generally useful, data for analysis was limited since the roadsides monitored, the weed species viewed and the number of efficacy ratings were significant lower. We acknowledge that the collected data are not designed for statistical treatment as they are subjective and not normally distributed.

METHODOLOGY for 2022:

The year 2022 produced minor changes in our operational procedures.

1. The pandemic: Because of the possible transmission of SARS CoV-2, we continued to follow the State and County safety guidelines.
2. The use of a data collection device (DCD): Availability and usefulness of previously enter data was limited.

Thus, we mainly relied on our standard manual method of roadside surveillance to determine efficacy. If we found sites with poor efficacy ratings or other pertinent information, it was punctually relayed to the Noxious Weed Office.

MONITORING:

Commencing early in May, seven (7) Master Gardeners launched the 2022 treatment site monitoring. During the season, the team was given sixty-one (61) completed in season Herbicide/Manual Treatment Data Forms (TDF; Table1).

Table 1: Treatment Forms

- Treatment forms received: ----- 61
- Herbicide treatment: ----- 32
- Manual treatment: ----- 29
- Treatment forms monitored: -----28

Twenty-three (23) roadsides were monitored during the 2022 season (Appendix A) with 17 in the East Clallam Road Department District and 7 in the Central District. Only one new roadside (Grant) was evaluated, and only two roadsides (Happy Valley & Palo Alto) were monitored for the sixth consecutive year.

Nineteen (19) Clallam County noxious weed species were monitored and received efficacy ratings (Appendix B). Category 1 weeds remained the highest priority for control in 2022. Most of the commonly monitored weeds of 2017 were still being monitored in 2022 (Table 2). The knapweeds (meadow and spotted) were a high priority in 2017 and remained such for 2022. Additionally, Italian thistle, poison hemlock and tansy ragwort were included in the list of five (5) for 2022.

Over the last few years, we have typically given over 200 efficacy ratings and viewed over 100 partial treatments, but in 2022 only 64 efficacy ratings were given. Therefore, it is difficult to viably analyze this year’s data. A few statements can be made.

The primary concern in the monitoring process is the efficacy of the noxious weed treatments. The developed efficacy data from our monitoring corresponds to the prescribed codes found on the weed treatment monitoring form (WTMF) provided by the Noxious Weed Office. Monitoring of herbicide treated sites was done at least 4 weeks after treatment but usually within six weeks after treatment.

While efficacy ratings are somewhat subjective, they are determined by consensus. Efficacy ratings vary noticeably from road to road and weed to weed. The developed efficacy data from our monitoring evaluation corresponds to the prescribed codes found on the WTMF (Table 2).

Table 2: Code for Percent Efficacy of Treatment & Monitoring Evaluations for 2021

Code	% Efficacy	Rating	Monitoring Evaluation Total
0	0	No effect	1
03	1 – 5	Failure	3
15	6 – 25	Poor	2
35	26 – 50	Marginal	13
65	51 – 75	Fair	9
85	76 – 90	Good	7
95	91 – 99	Excellent	8
100	100	Complete	21
UN	UNK	Unknown	3
M	Un	No entered data	3

A total of 64 efficacy ratings were given with 42 in the East District down from 154 in 2021 and 22 in the Central District. Central District efficacy monitoring activity was down by 50 following a drop of over 25% in 2021. The RWMT monitored mainly herbicide treatment sites. Manual application sites were monitored early in the year and involved predominately poison hemlock. The combined overall average efficacy was 69% (Fair). The high priority weeds (Italian thistle, poison hemlock, meadow knapweed, spotted knapweed and tansy ragwort) had an efficacy rating of 77% (Good).

There were 21 partial treatments listed on the TDFs down from 151 in 2021. Unknowns and partial treatment applications are not reflected in the overall efficacy ratings. Overall, efficacy ratings showed a wide range for individual species (Appendix C).

HERBICIDE RETREATMENT NEEDS:

Other data gathered by the monitoring team on the WTMF included retreatment needs for this year and next. Retreatment needs for this year were communicated to the Noxious Weed staff shortly after monitoring. Any priority weed noted for treatment that had less than half of the target population controlled was promptly reported.

ENVIRONMENTAL SITE TYPING:

Environmental site typing characterizes the immediate surroundings along the roadside and classifies the section into areas that are open, wet/dry, forest, or other. Grant Road was the one new road surveyed in 2022 exhibiting an open environment.

Roadside survey summary US HWY 101

- Completed in early June 2022 by the Master Gardener Roadside Vegetational Management Team.
- Twenty-one and a half miles of U S Highway 101 right-of-way (ROW) were surveyed for specified vegetational characteristics on the north side of the highway.

OFF-TARGET DAMAGE:

Assuring chemical weed control activities do not impact native plants is an important role for our impartial RWMT. Immediate feedback helps determine if chemicals or application methods need to be modified. We continue to assess this on every WTMF. No off-target damage sites were noted in 2022.

OLYMPIC DISCOVERY TRAIL SURVEY PROJECT:

The Olympic Discovery Trail Survey project was in hiatus for 2022.

NO-MOW PILOT:

The No-mow project was discontinued.

NATIVE PLANTING PROJECT:

The cultural weed control aspect of the Integrated Weed Management Plan is to foster native plant communities built off the RWMT's environmental site typing data. To date, plantings at four sites have commenced (Table 3).

Table 3: Native Planting Sites

Planting Site	Planting Year
Olympic Discovery Trail – Agnew Berm	2018, 2019, 2020, 2021
Black Diamond Road @ Hillside Baptist Church	2018
Deer Park Interchange Loop	2019, 2020, 2021, 2022
Master Gardener Woodcock Demonstration Garden Roadside	2019

To monitor changes of the new pollinator habitats over time, a series of photo stations has been established. This will allow us to visually note the occurring changes. The native plantings should reduce mowing costs and provide habitat and food for pollinators.

MONITORING OBSERVATIONS AND CONCLUSIONS:

With the completion of the 2022 fieldwork, the RWMT now has multi-year data for most of the roadsides monitored. Only one new roadside was monitored in 2022. Most of the following text will refer to the five (5) high priority weed species of 2022.

Italian thistle and poison hemlock are commonly monitored early in the season and treated both manually and with herbicide. Italian thistle, found only near the intersection of Cays and Lamar, is the first weed monitored in the year. Poison hemlock is a late spring/early summer weed of observation. Tansy ragwort is found through late spring into fall treated both manually and with herbicides. The knapweeds, meadow and spotted, commonly observed by the RVMT in full summer continuing into September, are typically treated with herbicides.

Italian thistle is an early bloomer and captures attention in late winter. In determining efficacy, the RVMT walked the entire public lands area with the whole group fine tooting the infected site. Efficacy was 100% though we did find some new growth which was reported to the Noxious Weed office.

Poison hemlock has become a point of attention in the monitoring process, first monitored in 2018. It currently seems to be confined to the East District but is persistent. Most of the sites are manually treated early in the growing season. Eight (8) out of the 10 sites monitored had excellent efficacy ratings (100%) this year. One locale that seems to pose a problem – Woodcock Road near the Dungeness River and the crossing Towne Road. Both had fair (65%) efficacy ratings. Fasola Road efficacy, which is in the area, improved. Nearby, Ward Road, which has been part of the problem was not monitored this year, but should be checked in 2023. The Voice of America site, which has had an abundance of the plant the previous three years, did not have any plants when checked. Even with so many complete removals each year, the seed bank does replenish the plant in many locations. Carlsborg Business Park provides a prime example. Overall efficacy for poison hemlock was 93%.

The areas infested with tansy ragwort are not large but numerous. It proved difficult to find small unmarked patches along long stretches of roadside. Efficacy ratings are general high, and several spots have shown improvement, such as Happy Valley Road and nearby Palo Alto Road. West of Joyce, several hot spots, such as Schmitt Road and Whiskey Creek Beach Road were not viewed this year. Several roadsides that were treated in early years and received low ratings, such as Fors Road, have not been monitored recently. The Diamond Point area has its share of tansy ragwort but is usually treated manually and RVMT found that it is not efficient to view manually treated tansy ragwort sites. Overall, for the nine (9) sites that were rated the average efficacy was 77%. Dropping the high and low scores raised the efficacy rating to 85%.

The knapweed species have remained high priority weeds over the survey period. Meadow knapweed appears to be the prevalent knapweed species currently monitored. It is cosmopolitan in its distribution in the East and Central districts, but there are several troublesome locations that need to be highlighted. The Happy Valley area is one of the prime locations, mainly west of Johnson Creek Road. There have been a number of repeat applications in this area. Another location that has an overabundance is the area just east of the Elwha River which includes unvisited in 2022 Olympic Hot Springs Road. On the roads around Lairds Corner, meadow knapweed plants are found in abundance.

Efficacy ratings were bi-modal for the knapweeds. Of the six (6) monitored sites for meadow knapweed 3 had efficacy ratings of 100% and 3 were marginal (35%). The Four (4) sites monitored for spotted knapweed were split, two (2) complete (100%) and two (2) poor (15%). The marginal and poor sites were reported to the weed office and retreated. The retreated sites were not reevaluated by RVMT, due to circumstances, but no doubt would have resulted in improved efficacy ratings for the knapweeds.

Noting a few of the other monitored weeds, only two (2) species, Scotch broom and herb Robert had significant efficacy numbers. Scotch broom was its usually self, stubborn and well dispersed. Efficacy ratings for the eight (8) monitored sites were scattered across the rating system. Herb Robert, more commonly a prevalent shade loving species, was and is more easily removed from the landscape only to appear the next year. The nine (9) monitored sites averaged an 83% efficacy rating.

Since the Integrated Weed Management Plan has only been in effect since 2017 and noxious weed seeds can survive years, even decades, it is important to continue to appropriately resource the County's efforts in order to comply with Washington State weed laws. Supported activity by the Clallam County Road Commission and the Clallam County Commissioners illustrates an awareness of the "big picture" and a view to a sustainable future.

RWMT:

In 2022, seven (7) Master Gardeners continued in the activities associated with the Noxious Weed Office. They were: Lorraine Eckerd, Peggy Goette, Bev Hetrick, Nancy Kohn, Brenda Lasorsa, John Viada, and Bruce Pape.

Monitoring was mainly accomplished from a slow-moving vehicle, but, when necessary, sites were examined on foot. Safety was always a priority. Activities were limited to the East and Central Clallam Road District areas. During the monitoring, the teams documented post-treatment live noxious weeds and provided point notations for the Noxious Weed Office staff.

Being out and about, we occasionally had people inquire about our purpose. Contacts, again, were all positive. Monitoring commenced early in May and ended in mid-September.

APPENDIX A: Roadsides Monitored

	East	Central
Cays	Marine	Benson
East Sequim Bay	Old Blyn	Elwha River
Fasola	Palo Alto*	Granite
Gilbert	Towne	Laird
Grant^	Turnstone	Place
Happy Valley*	West Washington	Power Point
Kitchen Dick	Woodcock	
Lotzgesell	Woods	Voice of America

^ First year monitored

*Sixth year monitored

APPENDIX B: Noxious Weeds Monitored

Code	Scientific name	Common name
ANCA	<i>Anthriscus caucalis</i>	bur chervil
BUDA	<i>Buddleja davidii</i>	butterfly bush
CAPY	<i>Carduus pycnocephalus</i>	Italian thistle
CEMO	<i>Centaurea x moncktonii</i>	meadow knapweed*
CEST	<i>Centaurea stoebe</i>	spotted knapweed *
CIAR	<i>Cirsium arvense</i>	Canada thistle*
CIVU	<i>Cirsium vulgare</i>	bull thistle*
COMA	<i>Conium maculatum</i>	poison hemlock
CRMO	<i>Crataegus monogyna</i>	English hawthorn
CYSC	<i>Cytisus scoparius</i>	Scotch broom*
DALA	<i>Daphne laureola</i>	spurge laurel*
DIFU	<i>Dipsacus fullonum</i>	common teasel*
DIPU	<i>Digitalis purpurea</i>	common foxglove
GERO	<i>Geranium robertianum</i>	Herb Robert*
HIAU	<i>Hieracium aurantiacum</i>	orange hawkweed
HYPE	<i>Hypericum perforatum</i>	St Johnswort*
JAVU	<i>Jacobaea vulgaris</i>	tansy ragwort*
LEAP	<i>Lepidium appelianum</i>	hairy whitetop
RUAR	<i>Rubus armeniacus</i>	Himalayan blackberry*

* Treated 2017 through 2022

APPENDIX C: Efficacy Ratings

WEED	EFFICACY	ROAD
CAPY	100	Cays
	100	Cays and Lamar
CEMO	35	Happy Valley
	35	Palo Alto
	100	Towne 21
	35	Granite
	100	Place
	100	Power Plant
CEST	95	Grant
	15	Turnstone
	15	West Washington
	100	Power Plant
CIAR	65	E Sequim Bay
	85	Old Blyn
	3	Palo Alto
	35	Benson
	35	Laird
	35	Place
CIVU	3	Palo Alto
	35	Laird
COMA	100	Cays 24

100	Fasola
100	Lotzgesell
100	Marine
100	Old Blyn
65	Towne 20
100	Towne 21
100	Voice of America
100	West Washington
65	Woodcock

Number indicates TDF on segmented or multi-treated roadsides

APPENDIX C, *continued*

WEED	EFFICACY	ROAD
CEST	95	Grant
	15	Turnstone
	15	West Washington
	100	Power Plant
<hr/>		
CIAR	65	E Sequim Bay
	85	Old Blyn
	3	Palo Alto
	35	Benson
	35	Laird
	35	Place
<hr/>		
CIVU	3	Palo Alto
	35	Laird
<hr/>		
COMA	100	Cays 24
	100	Fasola
	100	Lotzgesell
	100	Marine
	100	Old Blyn
	65	Towne 20
	100	Towne 21
	100	Voice of America
	100	West Washington
	65	Woodcock
<hr/>		

Number indicates TDF on segmented or multi-treated roadsides

APPENDIX C, *continued*

WEED	EFFICACY	ROAD
CYSC	35	East Sequim Bay
	65	Old Blyn
	35	Turnstone
	85	Woods 25
	35	Granite
	85	Laird
	95	Place
	65	Power Plant
DALA	65	West Washington
DIFU	65	Happy Valley
DIPU	35	Woods 26
	95	Elwha River
GERO	95	East Sequim Bay
	95	Old Blyn
	95	Palo Alto
	35	Woods 25
	65	Woods 26
	85	Woods 27
	85	Elwha River
	95	Place
100	Power Plant	
HIAU	100	Benson
HYPE	95	Old Blyn
	65	Granite

JAVU	95	East Sequim Bay
	85	Happy Valley
	85	Palo Alto
	100	Woods 25
	65	Woods 26
	65	Elwha River
	100	Laird
	100	Place
	0	Power Plant
LEAP	100	Kitchen Dick/Buckthorn 41
RUAR	35	East Sequim Bay
	3	Turnstone

Number indicates TDF on segmented or multi-treated roadsides

CLASSIFIED PROOF

PUBLIC HEARING NOTICE

Clallam County is beginning the 2022 Integrated Weed Control program which may include spot treatments of herbicide to control specific noxious weeds and invasive species of special concern along selected portions of county right-of-way. Notices indicating which herbicide has been applied, the application date, and the target weed species will be posted onsite. The Integrated Weed Management Plan, which contains information about target weeds, locations, and treatment methods, can be viewed online at <http://www.clallam.net/weed/>

Property owners who do not wish to have their adjoining right-of-way treated with herbicide have the option of keeping the right-of-way abutting their property weed free by applying for an Owner Will Control Agreement with Clallam County available online. Contact the County for further information at 360-417-2442.

SG.: March 16, 2022

Legal No. 950564

NOTICE

The herbicides aminopyralid, imazapyr, triclopyr, clopyralid or _____ will be applied to this site to control noxious weeds, which threaten native vegetation and habitat in this area.

Planned / Actual Application Date*: _____

*Actual date of application contingent upon weather conditions.

Targeted Noxious Species**: _____

**Other weed species in this area may also be treated at this time.

NO USE RESTRICTIONS ARE IN PLACE

Avoid contact with treated vegetation until after it has dried.

Clallam County Noxious Weed Control Board
223 East Fourth Street, Suite 15
Port Angeles, WA 98362
(360) 417-2442
(360) 460-1842

APPENDIX N: SAMPLE HERBICIDE/MANUAL TREATMENT DATA FORM (SIDE 1)

**2022 CLALLAM COUNTY-ROADS
Herbicide/Manual Treatment Data Form**

Project ID #: _____

Project Complete? **Y** or **N** (add notes)

Name of Entity/Person for whom Treatment was applied: Clallam County
 Street Address: 223 E 4th St City: Port Angeles State: WA Zip: 98362
 Address or Exact Location of Site: _____
 PIN#: _____

General Activity Fields

County (circle one)	WRIA (circle one)	Project Name (from project list)	Department (circle one)	Workforce**
Clallam	15 16 17 18 19		Roads DCD Parks Other	

**Workforce: County Name, WCC Crew Name, County Weed Board

Crew Members Present: _____

Site/Inventory Fields

Start Date	Stop Date	acres examined for weeds	Treatment Site (circle one)	Treatment Method (circle one)	Total Manual Infested Area Treated: (DO NOT lump plants together) acres
			Road edge/ROW Park Other	Spot Complete Retreatment	
Weeds Treated (Just the PLANTS code is OK)		Infested Area Treated (DO NOT lump plants together)		% of area examined for weeds infested with this species (lump plants together – use cover classes 1 - 9 listed below)	Manual/Herbicide or Survey
				sq ft	
				sq ft	
				sq ft	
				sq ft	
				sq ft	

* Cover Classes: 1 = Trace, 2 = 1 – 3%, 3 = 3 – 5%, 4 = 5 – 10%, 5 = 10 – 25%, 6 = 25 – 50%, 7 = 50 – 75%, 8 = 75 – 95%, 9 = 95 – 100%
 Note: Cover classes are meant to be approximations only.

APPENDIX N: SAMPLE HERBICIDE/MANUAL TREATMENT DATA FORM (SIDE 2)

All Licensed Applicators: Name and License # _____

Firm Name: Clallam County Noxious Weed Control Board Phone # 360-417-2442

Firm Address: 223 E 4th St, Suite 15 City: Port Angeles State: WA Zip: 98362

Application Date	Time Start	Time Stop	Temp (F)	Wind Speed (MPH)	Wind Direction	Cloud Cover	Remarks – Weather forecast

Application Area (acre)	Total Volume of Mix Applied (gal)	Diluent	Special comment
		Water	

Product Name	EPA Registration #	Amount of herbicide used (oz)	Herbicide Applied/Acre or other measure	Concentration Applied
<input type="checkbox"/> Element 3A	62719-37			
<input type="checkbox"/> Milestone	62719-519			
<input type="checkbox"/> Vastlan	62719-687			
<input type="checkbox"/> Transline	62719-259			
<input type="checkbox"/> Competitor	WA-2935-04001			
<input type="checkbox"/> Blazon Blue				
<input type="checkbox"/> Oust XP	432-1552			
<input type="checkbox"/> Ranger Pro	524-517			

Was this application made as a result of a permit? **Yes No**
 If yes, Permit # _____

WA State NPDES Acres:

Notes: _____

Interactions: _____

APPENDIX O: SAMPLE OWNER WILL CONTROL



OWNER WILL CONTROL AGREEMENT

By entering into this agreement an adjacent property owner (hereinafter referred to as "Owner") will agree to control noxious weeds and other weeds of concern as described in Appendix A of this agreement on county right-of-way adjacent to property located at:

_____ (Street) _____ (City) _____ (Zip)

The County will send a confirmation email upon receiving a completed application and return a copy of the finalized Owner Will Control Agreement (hereinafter referred to as "Agreement").

For the purpose of this Agreement, 'control' will consist of complete removal of all above ground biomass and as much of the root system as is feasible of weeds listed in your packet, as well as any additional weeds of concern as determined by the County.

If noxious or other weeds of concern are observed on right-of-way adjacent to above named address, County will notify property owner of their presence. Owner will then have ten (10) days to completely remove weeds as required by this Agreement. If Owner fails to control weeds in that timeframe, this Agreement will be terminated and weeds will be controlled as determined by the County, including the use of herbicides.

This Agreement is valid from the date signed by both parties until December 31 of the same year.

If the Owner Will Control Agreement is terminated as described above the Owner may apply to re-enter into a new Owner Will Control Agreement the following calendar year.

* _____ * _____ * _____

Owner Name (Print) (Signature) Date

* _____ * _____

(Owner Email) (Owner Phone #)

Interested in Native Plant Enhancement Program? (circle one) **YES NO**

* _____ * _____ * _____

County Representative (Signature) Date

*Required Field

APPENDIX P: SAMPLE ADOPT-A-PATCH PERMIT

Clallam County Public Works Department
 223 East Fourth Street, Suite 15 Port Angeles, WA 98362
 360-417-2703 Phone 360-417-2414 Fax

\$160 plus all costs beyond public use**

**See C.C.C. 5.100.245 – Fee Schedule 245-A

PROJECT NO. _____
ROAD NAME _____
PERMIT NO. _____
COUNTY USE ONLY

APPLICATION FOR SPECIAL USE OR EVENT ALONG CLALLAM COUNTY RIGHT OF WAY

In Clallam County, a "Right-of-Way" permit is required to work along a county-owned road within the county right of way.

PLEASE PRINT

Name of Applicant: _____	County Road: _____
Mailing Address: _____ _____ _____	Address/ Milepost of Project Site: _____
Phone: _____	<u>When the project is approved.</u> (check one item below) <input type="checkbox"/> Mail permit when approved <input type="checkbox"/> Call when approved <input type="checkbox"/> Fax when approved
Cell Phone: _____	
Fax: _____	

USE PROPOSED & PURPOSE

Special Use: NOXIOUS WEED CONTROL

Name of Event Coordinator: _____

Start Date _____
 End Date _____

IMPORTANT:

Project Location Description: _____
 (Reference "Adopt-A-Patch Site List" for location")

THE EXACT LOCATION OF THE ENTIRE EVENT/USE AREA MUST BE CLEARLY MARKED SO AS TO BE EVIDENT TO COUNTY PERSONNEL. FAILURE TO COMPLY WILL RESULT IN A DELAY OF THE PROCESSING OF THIS PERMIT.

It is the responsibility of the applicant to notify all utilities and private property owners when such property is liable to injury or damage through the performance of the permitted work. The applicant shall make all necessary arrangements relative to the protection of such property and/or utilities.

By signing this permit, the applicant agrees to comply with all conditions as stated on the PERMIT, Form RWPCOND041604, Permit Conditions Addendum and C.C.C. 5.100.245 – Fee Schedule 245-A. Applicant has 10 days from permit approval date to request clarification or modification to permit conditions attached.

Signed _____ Date _____

COUNTY USE ONLY

PERMISSION IS HEREBY GRANTED DENIED
 Call 360-417-2703 for the following:
 Start Date _____ _____ Final

The Approved Permit Must be Posted on Site Until Final Inspection.

COMMENTS: _____

FEE CALCULATION

AMT WAIVED: _____
NET FEE: _____
DATE: _____
RECEIPT#: _____
CHECK#: _____
REC'D BY: _____

This permit shall be void unless the work herein contemplated is completed before the following date: _____

Area Supervisor/Design Review Engineer _____ Date _____ Final Inspection By: _____ Date: _____

Program details and forms available online at <https://www.clallamcountywa.gov/1042/Roadside-Vegetation-Management>

APPENDIX Q: SAMPLE ADOPT-A-PATCH ACTIVITY REPORT



Adopt-A-Patch Activity Report

Permit#: _____ **Permittee Name:** _____

Permittee Phone #: _____

Dates included in this report: _____ (mm/dd/yy)

_____ (mm/dd/yy)

_____ (mm/dd/yy)

_____ (mm/dd/yy)

Target Species: _____

Estimated Total Removed:

Species 1 _____ **#plants** _____ **lbs of flowers/seeds** _____

Species 2 _____ **#plants** _____ **lbs of flowers/seeds** _____

Species 3 _____ **#plants** _____ **lbs of flowers/seeds** _____

Species 4 _____ **#plants** _____ **lbs of flowers/seeds** _____

Total Distance Covered: shoulder 1 _____ **miles/feet shoulder 2** _____ **miles/feet**

Total # in Workforce: _____ **Total # Hours Worked:** _____

Comments? _____

Submit reports as often as desired, but submit no later than October 31.

Email to Noxiousweedcontrol@clallamcountywa.gov or Mail to: Clallam County Noxious Weed Board
223 E Fourth St, Suite 15
Port Angeles, WA 98362

Program details and forms available online at: <https://www.clallamcountywa.gov/1042/Roadside-Vegetation-Management>

APPENDIX R: SAMPLE ADOPT-A-PATCH WAIVER

Adopt-A-Patch Waiver

Name of Grantee		Permit #	
Name of Volunteer/Assignee			
Address	City	Zip Code	Telephone Number
Person to notify in case of emergency		Relationship	
Address	City	Zip Code	Telephone Number
<p>Clallam County's Adopt-a-Patch Program issues permits that allow permit holders, hereinafter known as "Grantees" to enter onto County owned lands for the purpose of controlling noxious and invasive plants of special concern. Grantees and their participants, hereinafter known as "Volunteers" or "Assignees" are advised that working adjacent to a county road can be hazardous and shall exercise due care in performing weed control activities. Grantees and their Assignees must receive safety training prior to participating in any weed control activities.</p> <ol style="list-style-type: none"> 1. I understand that working within right-of-ways and performing noxious weed control can be hazardous. 2. I hereby verify that I am 18 years of age or older, have viewed the Adopt-a-Highway Safety Video and read the Adopt-a-Patch Safety Tips. I understand the conditions, responsibilities, and privileges of participation in the Adopt-a-Patch Program. 3. By signature below I verify that I am operating on Clallam County right-of-way as a Volunteer/Assignee for Grantee _____ under a valid Clallam County permit and therefore agree to defend, indemnify, and save harmless the County from all claims, actions or damages of every kind and description which may accrue to or be suffered by any person or persons, corporation or property by reason of the performance of any such work, character of materials used or manner of installation, maintenance and operation or by the improper occupancy of rights of way or public place or public structure, and in case any such suit or action is brought against said County for damages arising out of or by reason of any of the above causes, the grantee, his agents, successors, assigns, or volunteers will upon written notice to him or them or commencement of such action defend the same at his or their sole cost and expense and will fully satisfy any judgment after the said suit or action shall have finally been determined if adversely to the County. 			
Signature of Assignee		Date	
<input type="text"/>			
Number of hours worked			
<input type="text"/>			

Program details and forms available online at: <https://www.clallamcountywa.gov/1042/Roadside-Vegetation-Management>