WCC and Weed Board crews combine to tackle projects in the Dosewallips watershed

Olympic Peninsula Cooperative Noxious Weed Control 2015 Project Report

A Title II Participating Agreement between
USFS Olympic National Forest
and
Clallam County and Jefferson County Noxious Weed Control Boards

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An unabridged copy of this report will be posted to our website at
http://www.clallam.net/weedcontrol/html/forest_service.htm -see 2015 Report.

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*Appendices are noted but omitted from the abridged version of this report

EXECUTIVE SUMMARY

Project Goal:
The goal of this project is to protect the natural resources of Clallam and Jefferson Counties from the negative impacts of invasive non-native plants. This goal is implemented by reducing existing weed populations and preventing the establishment of new ones across both counties. Coordinating and standardizing weed control across jurisdictional boundaries maximizes the efficiency of these efforts and minimizes the negative impacts of noxious weeds on natural resource productivity, watershed function, wildlife habitat, human and animal health, and recreational activities.

Project Overview:
This project has been a comprehensive program for noxious weed control on Forest Service (FS) lands across the North Olympic Peninsula. It includes surveying, identifying, and controlling noxious weeds through a work plan coordinated between the Forest Service and local weed control boards. This project compliments the efforts of local weed board programs which include public education, survey and monitoring of noxious weed infestations, and seeking landowner compliance with RCW 17.10. on non-federal lands. Title II of the Secure Rural Schools Act (SRS), which was designed in part to promote cooperation and collaboration between federal and local governments, funds most of the project. Additional dollars from specific FS funds have sometimes augmented additional tasks added to the work plan. Depending on funding levels in any given year, work has been accomplished by crews of varying size and expertise.

2015 Project Goals:
1. Control weeds on areas scheduled for road decommissioning or forest management.
2. Control weeds in quarries and other rock sources.
3. Control weeds in Botanical Areas and other special "critical area" sites.
4. Control weeds in campgrounds, trailheads and other heavily-used sites
5. Revisit previously controlled sites and perform necessary follow-up control work.
6. Identify and treat new populations.

2015 Resources: (All crews)
- Supervisor (20 hours/week, 5 months)
- 2-3 Project Specialists (less than 3 months each)
- Washington Conservation Corps (8 days)

2015 Accomplishments: (All crews**)**
- Examined **438** acres for invasive species, treated **312** weed-infested acres, and monitored **106** treated acres.
- Inspected and treated high priority weeds in **18** FS rock sources; inspected and identified corrective measures for **12** private, **1** state and **2** county rock sources in regard to their potential to spread invasive weeds,
- Distributed native grass seed to **45** sites.
- Compiled data and completed annual Project Report.

Observations and Recommendations:
Weed infestations negatively impact resources both within the Olympic National Forest and on adjacent lands. Restoring diversity, achieving habitat requirements and goals, while improving forest productivity and overall ecosystem functioning is the underlying purpose of this invasive plant project. Where treatments have occurred, weed infestation size and density are much reduced. Long range goals, detailed planning and consistency have been the keys to progress to date. Because of treatment success, crews can now over-seed previously infested sites with native blue wild rye provided by the Forest Service. This preventative practice can reduce the probability of weed re-infestation and will likely be expanded to include additional native species as more plant material becomes available and as long as weed populations continue to be reduced and rehabilitation opportunities develop.

The Secure Rural Schools Act (SRS) has been renewed but projects have not yet been selected for funding in 2016. Large scale multi-jurisdictional projects such as ones occurring within many north Peninsula watersheds demonstrate not only how critical cooperation is to enduring success, but also demonstrate the capacity we have forged, through this program, to work together.

Weed board staff has extensive knowledge ranging from project history and infestation locations to weed identification and best treatment practices. The county weed boards provide a relatively inexpensive, locally based work force with county wide jurisdiction and long term focus. The expertise and flexibility of locally based weed boards make us best suited to identify and control new or small weed infestations and to act upon re-seeding projects as they arise. We appreciate the opportunity to provide input on weed control strategy and to help coordinate the Forest Service's weed management plan. Intra-agency invasive species control coordination has not only become increasingly important, but also is more likely to occur. This is a direct legacy of the working relationships created on the Olympic Peninsula because of the Secure Rural School Act. We hope this spirit of partnership will endure well into the future.

PROJECT SUMMARY

Project Goal:
The goal of this project is to protect the natural resources of Clallam and Jefferson Counties from the negative impacts of invasive non-native plants. This goal is implemented by reducing existing weed populations and preventing the establishment of new ones, across both counties. Coordinating and standardizing weed control efforts across jurisdictional boundaries maximizes the efficiency of these efforts and minimizes the negative impacts of noxious weeds on watershed function, wildlife habitat, human and animal health and recreational activities.

Project Overview:
Title II of the Secure Rural Schools Act (SRS), was designed in part to promote cooperation and collaboration between federal and local governments. This project has been a comprehensive program for noxious weed control on the North Olympic Peninsula, including surveying, identifying, and controlling noxious weeds, coordinating action and communication between local, state and federal jurisdictions, and raising public awareness of the impacts of noxious weeds. Additional dollars from specific Forest Service (FS) funds have sometimes augmented additional tasks added to the FS directed work plan for weed board partners. In previous years, this project has also supported the Jefferson County Noxious Weed Control Board, specifically their local education, survey, and treatment efforts. SRS was re-authorized in 2008, but the funding, as scheduled, diminished each year. A small amount of funding is left for field activities in 2016; the Resource Advisory Committee has yet to meet to allocate funding to projects submitted earlier in 2015.

On Forest Service lands the project operates under a strategy of early detection and rapid response to prevent the establishment of new infestations wherever possible. Initial work focused on surveys to identify weed baselines while performing manual control. After adopting Olympic National Forests' 2006 Environmental Impact Statement titled Beyond Prevention: Site-specific Invasive Plant Treatment, the focus shifted to treatment, using manual and herbicide methods. The emphasis has been on controlling high priority noxious weeds in areas with high potential to spread, such as rock sources or campgrounds, or in particularly sensitive environments such as Biological Areas. As the awareness of invasives has increased throughout the agency, additional tasks have been added such as treating prior to road decommissioning and timber management activities, conducting private rock source inspections to meet contract standards and seeding previously treated sites with native grass.

On adjacent-Forest Service lands, the emphasis has been on areas where uncontrolled noxious weed populations on other federal, state, county, and private land were spreading and hindering coordinated control activities. The Clallam and Jefferson County Weed Boards provide the vital link to private and public landowners whose weeds threatened federal lands. Program goals include public education, surveying for new noxious weed infestations, seeking landowner compliance with RCW 17.10 and WAC 16-750, and assisting other public agencies with their efforts to control noxious weeds.

Work on the Forest has typically been accomplished by crews of varying size and expertise to match the need on the ground with available funding. Over the years, this has included a two to four person crew, a weed specialist hired by the Clallam County Noxious Weed Control Board (CCNWCB), a larger six person Washington Conservation Corps (WCC), and briefly, an Olympic Correction Center (OCC) inmate crew, working in the west end of Jefferson and Clallam Counties. Although the Forest Service has hired contractors for certain, large scale projects, there have been no outside contracted projects for a number of years. Occasionally, other crews are made available through outside entities that have a special interest in a particular watershed.

2015 Project Description:
This year's work focused on sites designated as high priority by the Forest Service, infrequent high priority species and known herb Robert infestations. Control work at special wilderness and wildlife habitat sites have been highly successful and may not need treatment next year. Weather conditions this year were especially conducive to site rehabilitation with native grass over-seeding. *(See special spotlight)* The Forest Activity Tracking Sheet (FACTS) form was used to document manual or chemical treatment. Treatment reporting was based on a unique "Reference Number", arbitrarily assigned within 6th field watersheds. The FS requested that Weed Boards monitor at least 50% of treated areas. Crew often followed monitoring with re-treatments or over-seeding as conditions dictated.

Two seasonal crew members were hired in June. Both crew members obtained an applicator's license. The coordinator and/or another licensed applicator assisted a couple of days each week, enlarging crew

capacity and using the coordinators' greater expertise to find a wider variety of non-native plant species. This year's crew was about one-third smaller than last year because of funding constraints.

In 2015, treatments on Forest Service lands were prioritized as follows:

1. Control weeds on areas scheduled for road decommissioning or harvest management
2. Control weeds in specific quarries and other rock sources.
3. Control weeds in Botanical Areas and other special "critical area" sites.
4. Control weeds in campgrounds, trailheads and other heavily-used sites
5. Revisit previously controlled sites and perform necessary follow-up control work.
6. Identify and treat new populations, especially when seen en route to known sites.

2015 Project Resources and Roles:
The number of staff, the amount of time devoted to this project, and tasks completed were:

- **CCNWCB**

  Coordinator: 20 hours/week, for 5 months, licensed aquatic applicator
  - Supervised and administered the project
  - Provided technical information and support, crew training, and field treatments
  - Planned and coordinated WCC
  - Participated in planning meetings with Forest Service staff
  - Reviewed crew FACTS, Monitor, and Rock Source Inventory forms, submitted to the FS
  - Compiled data, prepared end-of-season report and planned for 2016 field season

  Field team: 2-3 project specialists, (licensed, aquatic applicators), less than 3 months each,
  - Treated **254** acres; retreated **35** acres; completed **116** FACTS forms for all treated sites
  - Examined **438** acres, surveyed **125** miles of roads,
  - Inspected, treated, and documented the status of **18** FS, **I** state, **2** county, and **12** private rock sources
  - Monitored **106** acres, and completed **40** Monitor forms

- **Washington Conservation Corps (WCC)-8 days**
  - Treated a total of **23** acres

- **Puget Sound Corp (PSC)-4 days**
  - Treated a total of **15** acres **bordering** Forest Service land

- **Clallam County Sheriff's Chain Gang**
  - Treated **17,797** Scotch broom within County pits and roads.
  - (No treatments were reported for the Title II FS funded Gang)

2015 Project Accomplishments:
Through the efforts of the Clallam County NWCB and the WCC, crews treated **312** acres of noxious weeds and surveyed **125** miles of roads. Weed board re-treatments (**35** acres) are included in this total.

The table on the following page provides some prospective on 2015 accomplishments by summarizing yearly crew activities since 2002. Yearly comparisons are complex and inconsistent because of changes in focus, crew resources and FS reporting protocols from 2002-2013. From 2002 to 2006, herbicides use was limited or disallowed. Manual treatments for those 5 years have been consolidated and acres treated estimated. When herbicide treatments were allowed, the CCNWCB was able to cover at least triple the amount of acres. (note how focus on surveys corresponds to number of new discoveries). This increased capacity to cover ground has been instrumental in getting ahead of, and reducing the spread and impacts of invasive plant species. For more detail, please see the end of Appendix C for a brief history of FS policies, program focus and available resources which shaped overall program direction and accomplishments in different years. Appendix A provides detailed information about treatments at each site in the 2015 project list.

2002-2014 ACCOMPLISHMENT SUMMARY TABLES

Acres Treated by Crew-rounded to the nearest whole number

CREW[A]	2002-2006[1] manual/baselines	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
NWCB manual	8.61		55	27	21	33	33	7	10	30	
NWCB chemical			131	195	316	286	338	360	248	259	
NWCB total	8.61[1]	60[2]	186[2]	222[2]	337[2]	319	371	367	258	289	**2,130**
OCC-manual	None	337[2*]	75[2]	78[2]	None	None	None		None	None	**489**[2]
WCC[5] manual	58.83	22	None		None		2	7			
chemical				54		38	26	8	15	23	
WCC total	58.83[1]	22[2]		54[2]		38[2]	28[2]	15	15	23	**225**
PSC manual								4			
chemical	N/A	N/A	N/A	N/A	N/A	N/A	N/A	80	N/A	N/A	
PSC total								84	None	None	
Chain Gang	38.68[1]	7[1]	2[1]	7[1]	0.16[1]	6[2]	25[1]	5	None	None	**87**
TOTAL Acres Treated	**106.12**[1]	**426**[2*]	**263**	**361**	**337**	**338**	372	418	273	312	**2,515**

[A]Crew acronyms: **NWCB**=Noxious Weed Control Board, **OCC**=Olympic Correctional Crew, **WCC**=Washington Conservation Corps, **PSC**=Puget Sound Corps

Number of New/Existing Sites Reported Each Year by NWCB Crews

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
New Sites/Total	**122**	**497/**619	**147/**766	**74/**840	**147/**986	**12/**998	**1/**999	**3/**1,002	**29/**1,031	**56/**1,060	**22/**1082	**63/**1145	**12/**1157	**25/1182**	**1,182**

Road Miles and Acres Surveyed and/or Treated by NWCB Crews

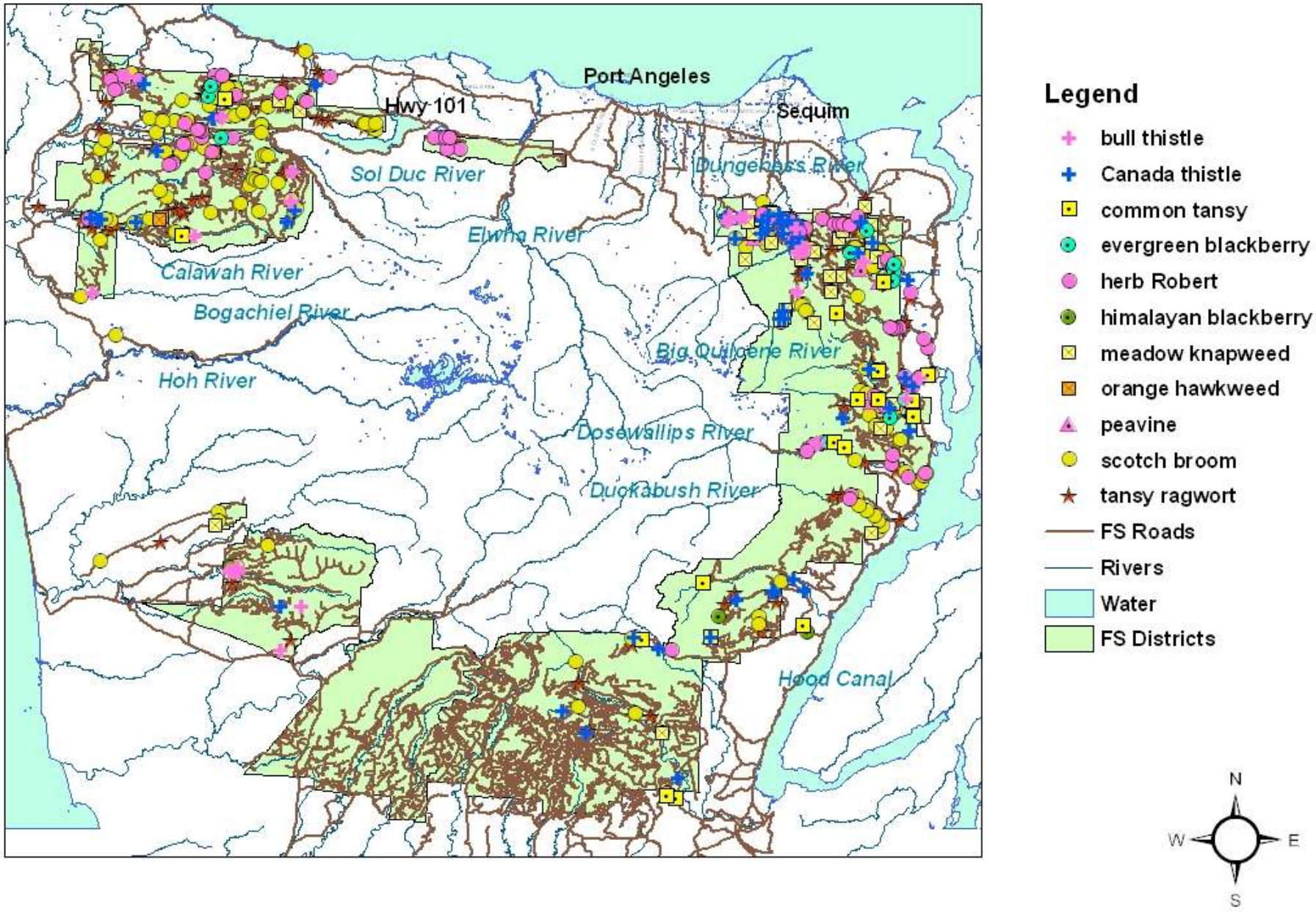
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Miles of Roads Surveyed/Treated	192	702	265	113	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**1,272**
Acres Surveyed/Treated	233[3]	851[3]	321[3]	137[3]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**1,542**[4]
Miles of Roads Surveyed	N/A	N/A	N/A	N/A	391	369	423	299	222	237	309	149	359	**125**	**2,883**
Acres Surveyed[b]	N/A	N/A	N/A	N/A	947[4]	894[4]	1,025[4]	724[4]	626[5]	575[5]	613[5]	776[5]	483[5]	**438**[5]	**7,101**

1. Only manual treatments were allowed during 2002-2006. Acreage was estimated based on reported number of plants pulled; 1000=one/tenth acre. NWCB directive was to locate and document as many infestations as possible. For the Chain Gang reporting inconsistencies were difficult to reconcile with FS protocols.
2. "Acres Treated" include chemical and manual treatment and are taken from the FACTS forms filled out by crew. *The figure of **337 acres** reported for the **OCC** crew in 2007 is **considerably inflated**, due to a change, and subsequent misunderstanding of newly instituted FS reporting protocols. It is shown here as reported.
3. Derived from miles surveyed/treated, but not used in the estimate of acres in the top table.
4. Derived from miles surveyed-Recorded as a separate value from 2006 to 2009. Previously combined in miles treated/surveyed and acres treated/surveyed
5. Taken from FACTS sheets—"Area Examined for Weeds"-from 2010-2102. This addition to the sheet gives perspective to infestation density and area covered.

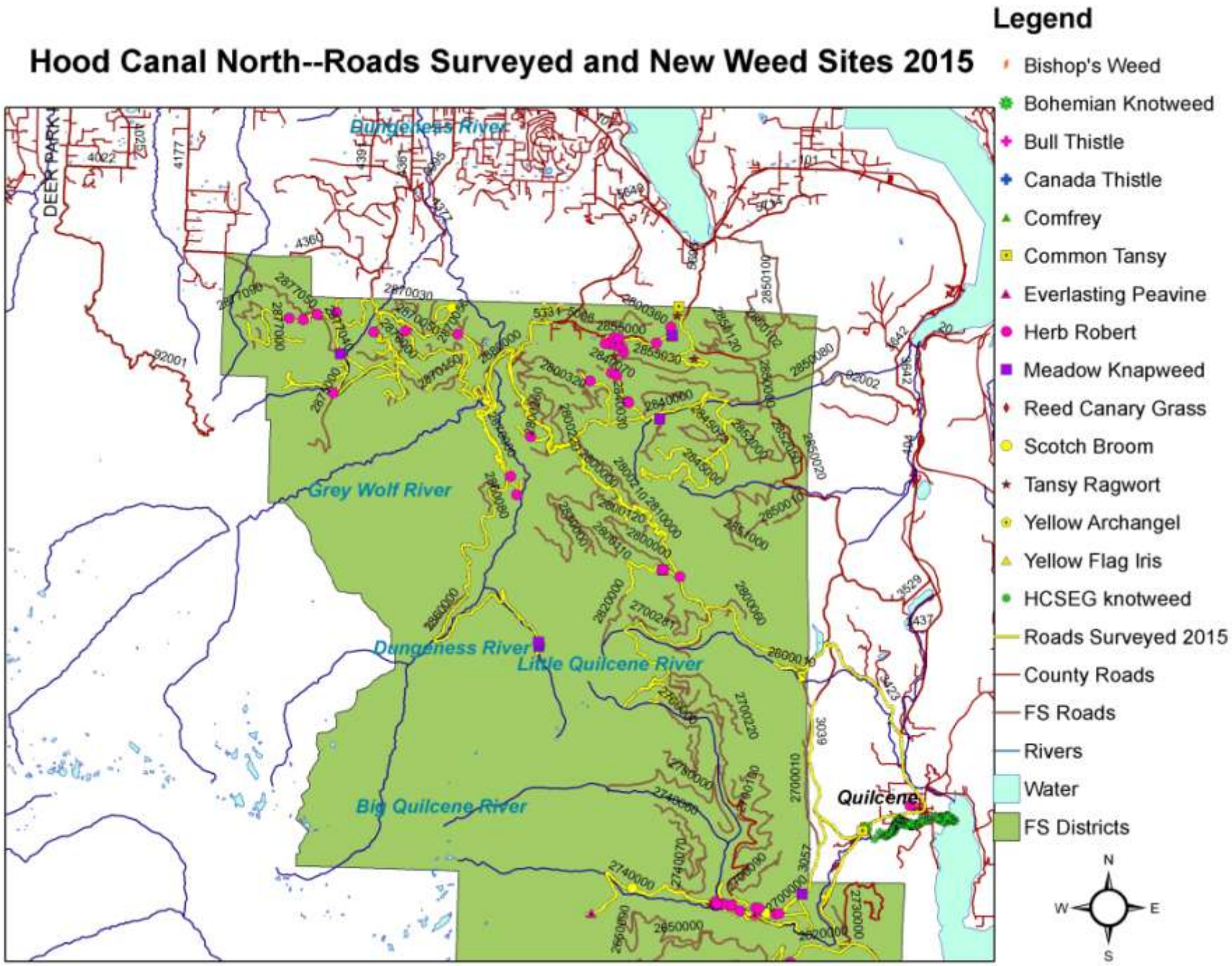
MAPS

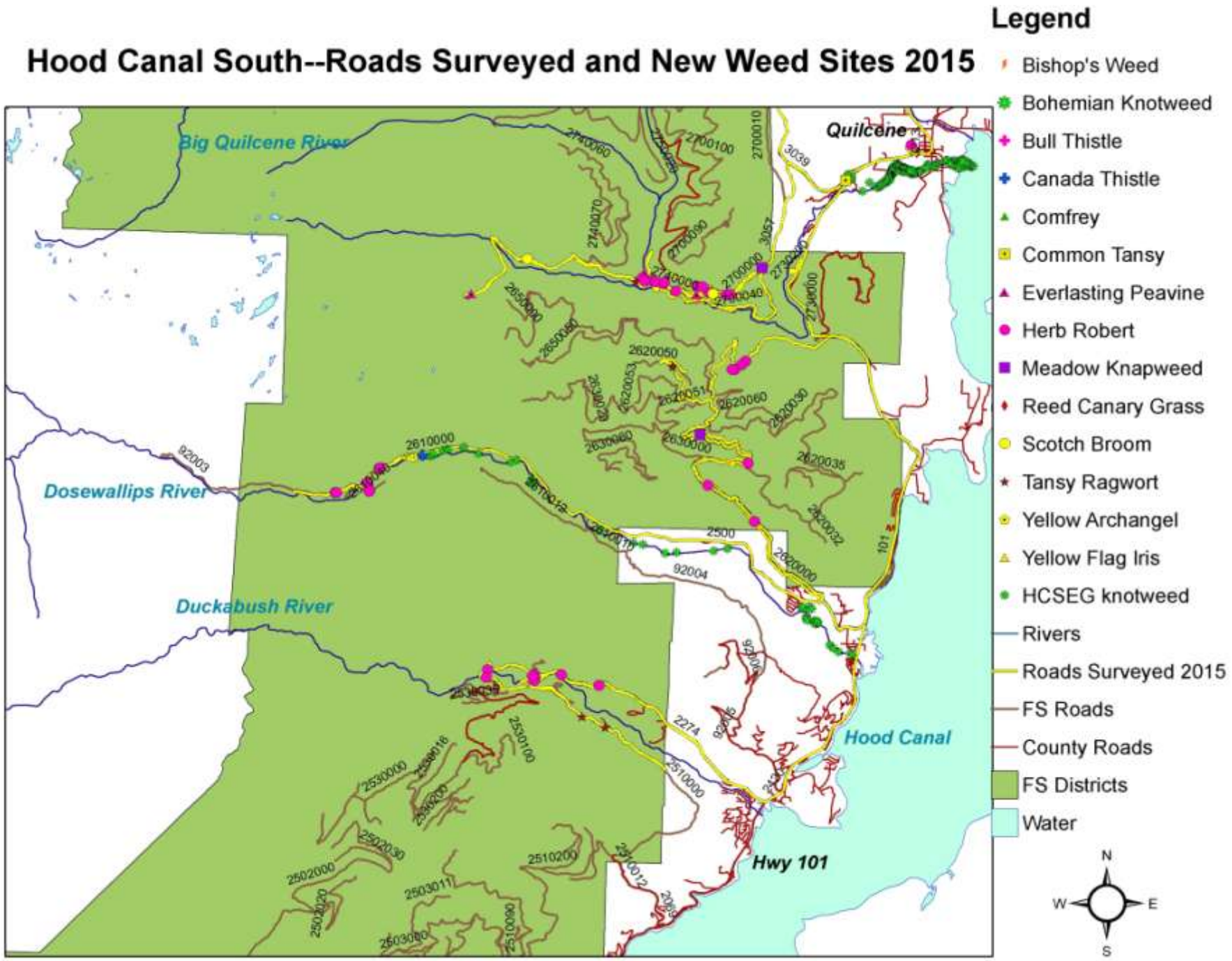
- Four maps are shown—an Overview of the Olympic National Forest, two covering activities in the Hood Canal District from north to south and one showing activities in the Pacific North district.
- The Overview Map shows baseline weed sites, documented from 2002- 2005.
- Roads that Jefferson County and Clallam County Noxious Weed Board crews worked on in 2015 are shown in yellow. The Roads Surveyed 2015 layer was based on GPS track logs. Orange lines show surveys from 2014 that crews did not revisit this year.
- The 2015 activity maps show weed sites newly documented in 2015; they are not necessarily all newly discovered sites. The new weed layers are based on points taken by the field crew, using a Garmin 78. Office staff converted the points to shape files, using the Minnesota DNR public domain software DNR GPS version 6.0.0.15, which were then overlaid on all previous species shape files to ascertain which infestations were new.

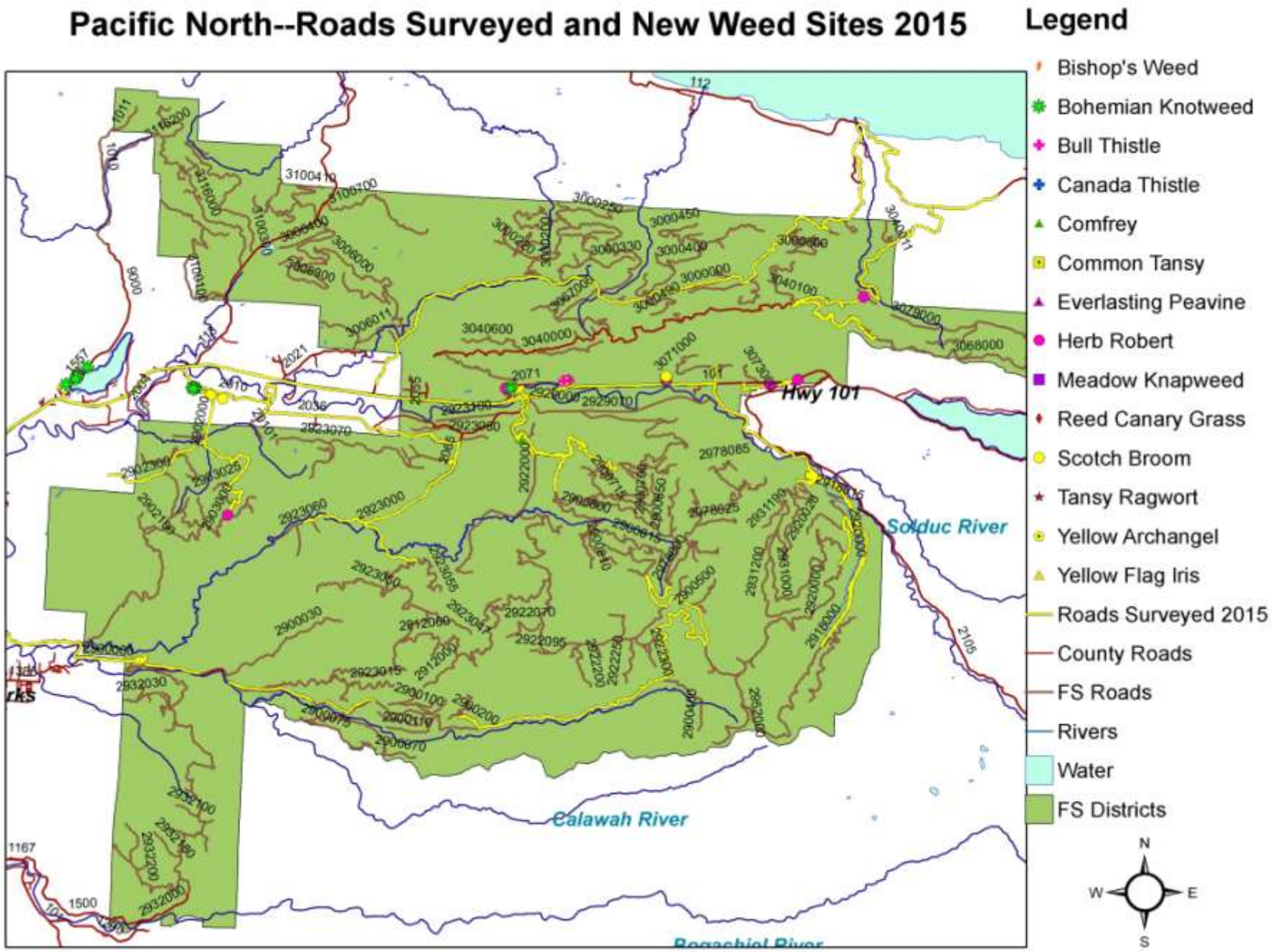
Olympic National Forest Overview, with Baseline Weed Sites



Hood Canal North--Roads Surveyed and New Weed Sites 2015




Hood Canal South--Roads Surveyed and New Weed Sites 2015
Legend
Bishop's Weed
Bohemian Knotweed
Bull Thistle
Canada Thistle
Comfrey
Common Tansy
Everlasting Peavine
Herb Robert
Meadow Knapweed
Reed Canary Grass
Scotch Broom
Tansy Ragwort
Yellow Archangel
Yellow Flag Iris
HCSEG knotweed
Rivers
Roads Surveyed 2015
FS Roads
County Roads
FS Districts
Water
Big Quilcene River
Quilcene
Dosewallips River
Duckabush River
Hood Canal
Hwy 101
N
W
E
S


Pacific North--Roads Surveyed and New Weed Sites 2015
Legend
Bishop's Weed
Bohemian Knotweed
Bull Thistle
Canada Thistle
Comfrey
Common Tansy
Everlasting Peavine
Herb Robert
Meadow Knapweed
Reed Canary Grass
Scotch Broom
Tansy Ragwort
Yellow Archangel
Yellow Flag Iris
Roads Surveyed 2015
County Roads
FS Roads
Rivers
Water
FS Districts
Hwy 101
Solduc River
Calawah River
N
W
E
S

Project Spotlight:
Native Grass Reseeding

Seed provided by Forest Service

Forest Service staff collected a South Olympia biotype of native blue wildrye, (*Elymous glaucus*) from agency lands in Gray's Harbor County, Washington. Commercially produced seeds of this original native stock were provided to Peninsula weed boards for broadcast on or near previously treated sites. According to testing conducted in 2012, the lot was 99.18% pure, germination 67%.

Re-seeding with native grass may compete with or inhibit broad leaf weed re-infestation and minimize erosion from bare ground, serving two important prevention goals. Several sites were seeded in 2013 at least one month after triclopyr was used because of potential residual effects. The crew documented most reseeded sites with GPS waypoints and/or stakes.

In the course of 2014 treatments, crew monitored seeded sites and noted good establishment in general. However, because of a very dry fall, there was no opportunity to put out more seed.

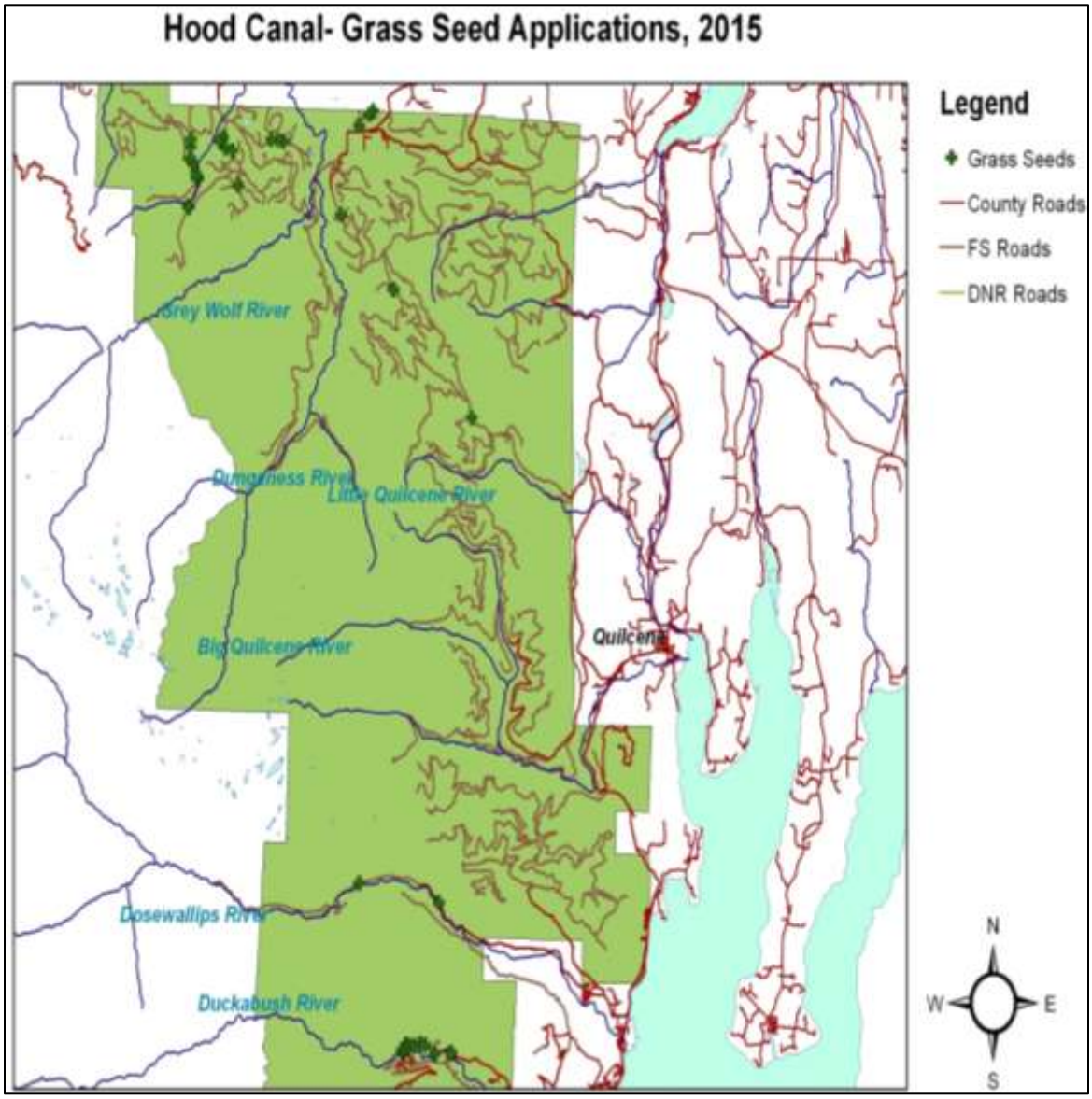
Simple erosion control measures like straw mulch in areas of disturbance, such as road washouts and culvert replacements, may be augmented by re-seeding-

Native blue wild rye establishing well after seeding adjacent to Dosewallips River (FS Rd 2610)

In 2015, crews kept track of potential seeding locations throughout the treatment season. Fall rains and warm weather provided the perfect conditions. Following Forest Service protocol, we used more than 325 ounces to seed approximately half an acre of bare ground; a total of 45 sites. A waypoint was taken at each site so that it can be monitored for establishment success or failure next year. Information on ounces of seeds used, size of area seeded, and whether or not photographs were taken varies from site to site. Sites included areas treated earlier in the season, high usage areas, and other bare patches.

Restoring diversity, achieving habitat requirements and goals, while improving forest productivity and overall ecosystem functioning is the underlying purpose of this invasive plant project. Because of treatment success over the years and because of the foresight of Forest Service Botany program we are entering an interesting new phase of the program. Locations where crews can over-seed previously infested sites with native blue wild rye provided by the Forest Service are steadily increasing. We are already incorporating this task into the annual work plan during the course of monitoring.

It is our sincere hope that this simple restoration practice be expanded to include additional native species as more plant material becomes available and as long as weed populations continue to be reduced and rehabilitation opportunities develop. Because our crews cover so much ground during the course of a season, the weed board is uniquely positioned to recognize and act upon these exciting re-vegetation opportunities as they arise. This is a role for weed board crews which we hope the Forest Service will capitalize upon and expanded in future seasons.



Most of the seeding (shown as green diamonds on the map) occurred on the Hood Canal side of the Forest. Several seeding sites, near the Snyder Work Center, are not shown.

The highest priority seeding sites were areas treated for everlasting peavine in the Dungeness, Graywolf, and Little Quilcene watersheds. Several areas along the Dosewallips River that had been seeded in 2013 were seeded again. In these sites, the grass was seen competing with Herb Robert.

Applying seed to a high-use area near the Duckabush Trailhead

Seeding at the Louella pit

This hillside on the 2800 road was reseeded after everlasting peavine treatment

A large bare patch created by mowers on the 2800 road

POST-SEASON OBSERVATIONS

Extraordinarily long roots on an Herb Robert plant

Nature of the Problem:
Invasive plant infestations threaten the health and diversity of native plant communities both within Olympic National Forest and on adjacent lands. Aggressive, non-native plants can displace native species, interrupting important, but sometimes subtle, ecosystem functions. Some weeds are toxic to humans and wildlife, and some can adversely affect soil chemistry and/or cause erosion. Many die back in the winter and offer no food or habitat for native wildlife. Others persist or spread quickly, preventing native plant recruitment or forest growth after disturbance.

The Forest Service, in consultation with the local Weed Boards, creates an annual work plan identifying high priority sites based on known problems or anticipated needs such as the potential for weed invasion during road decommissioning, thinning, or other forest health and maintenance projects. The NWCB crew treated **58** of 61 high priority, **18** additional lower priority, **6** Early Detection, and **7** survey projects for a total of **92** projects.

Early detection and rapid response has been shown to be effective. Species such as ribbon grass, which was found and treated just as it was starting to invade the forest, has been eradicated. For this reason infrequent high priority species such as orange hawkweed, sulfur cinquefoil and knotweed were specifically targeted in the work plan. A single incidence of field bindweed was discovered and treated this year.

As the significance of invasive plant impacts percolate through the Forest Service as an agency, more prevention strategies are being built into the wide range of Forest Service projects and activities that have potential to act as vectors for weeds including forest management, road-to-trail conversions, contract and material standards. These new policies are smart, cost effective steps that are already beginning to bear fruit. More private quarry owners ask for inventories in order to qualify as rock sources. We treated **17** Forest owned rock sources in addition to providing certification services free of cost for **12** privately owned rock pits that may provide material for Forest projects in the future. Two county rock sources and one owned by the Department of Natural Resources were also inventoried. The results of these surveys are summarized in Appendix B.

Over the past thirteen years, weed infestation size, density, and diversity have declined significantly. For example, of 67 meadow knapweed sites on record, only 5 sites were identified this year, most with only a few plants. We found 2 “orphan” populations of meadow knapweed consisting of single or a few scattered plants which we treated. Of 7 known orange hawkweed sites, only one, at the Caretakers Cabin, had any remaining. There are many such examples of success. Long range goals, detailed planning and consistency have been the key to our progress to date.

Herb Robert continues to be problematic, although we are making progress. This aggressive weed has a seed bank that is persistent and easily stimulated; light disturbances from thinning and road maintenance activities are having monumental consequences as small infestations are quickly dispersed to harder to reach locations. This year, the Forest Service funded specific research by Washington State University regarding new products and lowest effective rates that provide both good control of herb Robert and minimal impact to desirable species.

Invasive Weed Populations:

- The most commonly recorded invasive species continue to be herb Robert, everlasting peavine, tansy ragwort, Canada thistle, and bull thistle. The most infrequently recorded species are teasel, bishops weed, comfrey, sulfur cinquefoil, hawkweeds, knotweed, ribbon grass, and sundry exotics found at unique sites such as the Caretaker’s Cabin.

- No ribbon grass was found this year at Sink Lake. No bishop's weed was found in the Dungeness watershed or at the Caretaker's Cabin; only minimal amounts remain at the Snider Work Center. Almost no spotted knapweed was found anywhere in the Forest.
- The orange hawkweed infestation at the Caretakers Cabin was difficult to find this year. The yellow archangel, periwinkle, reed canarygrass, and comfrey are also almost completely gone. The caretaker has been especially diligent and helpful.
- We continued to use clopyralid whenever possible for peavine, tansy, knapweed and thistle because of its demonstrated ability to provide excellent long lasting control with little off target damage.
- Scotch broom abundance is minor where treatment has occurred for at least three years.
- Tansy abundance is down in areas where there has been consistent follow-up, especially in the Dungeness Watershed. Tunnel Creek has seen resurgence; little treatment has taken place there in many years. Tansy sites where little work has yet occurred, particularly in Jefferson County, would benefit from attention.
- Small or single canes of knotweed remain in the forest itself. Adjacent properties on the Dosewallips that have knotweed are being addressed-several knotweed small patches that appear to be new, were found on gravel bars near the mouth. It will continue to be important to periodically re-inspect.
- Crew waypointed approximately **25** new sites this year but created 101 waypoints which are shown on the maps. It was hard to determine whether these were all new sites. Some projects predated our GPS units. Crew were diligent in creating points in old projects when there was no existing waypoint on their GPS unit.
- The number of herb Robert infestations remain a top concern. Herb Robert was present on roughly half of the projects we treated; we didn't reach all known sites. We treated small patches of herb Robert becoming established above the Dosewallips washout. Follow-up is extremely important.
- There were no contractor projects this year. The Forest Service's weed team, was not available to assist often enough with large, (especially herb Robert) control projects.
- Disruption of stored water at Cranberry Bog slowed, but did not stop treatment. This was the first time for using imazapyr on that site. It will be interesting to compare results with glyphosate.
- On average, the condition of rock sources on FS land is improving.
- Small populations of purple loosestrife, yellow, common and European hawkweed, hoary alyssum, hairy willowherb, and common reed are all present on Jefferson and/or Clallam County roadsides. We consider control of all of these plants—as yet unrecorded on Forest Service land (excluding highways)—a high priority to prevent their spread.
- Clallam County needs to implement an integrated roadside weed management plan to prevent spread of weeds onto Forest Service lands.

Survey, Treatment, and Monitoring

- We were hired fewer crew this year due to funding limitations.
- NWCB crews treated **58** priority 1A or 1 projects listed for Jefferson/Clallam in the 2015 work plan. An additional **18** priority 2 projects were treated, mainly because of proximity to high priority projects or because they were known herb Robert sites. **7** EDRR sites were either specific FS requests or found while enroute to other project sites. We had time for **7** survey projects on rainy days and disbursed native grass seed to **45** locations. An additional **82** projects were listed for Forest Service staff. The status of those projects is unknown; it is unlikely the FS crew had time to tackle them.
- It is clear that adding herbicide tools since 2007 has GREATLY increased productivity. See the Accomplishment Summary Table on Page 4 for comparisons of treated acreage in the first 5 years versus every year after**.** By examining treated acres over the last several years, it appears that 300 acres is about close to the maximum that our small field crew can achieve in any given season.
- The Forest Service deliberately limited the number of 1A and 1 priority projects in the work plan which gave weed board considerable flexibility to adapt priorities. Included this year were sites to determine the status of previously recorded meadow knapweed sites; most had none.
- There were few sites on the project list where hand-pulling alone was an effective use of time, but it is useful to identify hand-pulling Scotch broom projects for rainy days.
- The monitoring requirement yields multiple crew benefits; encouraging them to see the effect of their treatments themselves and helps ensure two herb Robert treatments per season. Because of our small crew, we struggled to monitor 50% of our treated acres, but managed to combine it with re-seeding opportunities. Thank you for creating this opportunity!
- FS sponsored WCC assisted for eight days this year. This year's timing was much better than in past years. WCC crew willingness and capacity to spray has greatly increased the productivity of its crew.

- Cooperation between the Weed Boards, the Forest Service and the Port Townsend Municipal Watershed continued to be excellent. The new caretaker is very interested and has helped with eradicating the invasives there! We met the request of Municipal Watershed managers and provided a report of treatments within the watershed to meet their November 1st reporting deadline and requirements.
- Cooperation between the Forest Service, the County Noxious Weed Control Boards and the East Jefferson WCC Riparian Crew again facilitated knotweed treatments adjacent to FS land along the Dosewallips River.

Data Collection/Mapping

- The pre-and post season meetings between the FS and Weed Boards continue to be well organized and helpful.
- The Forest Service provided excellent pre-season planning documents and files. Shape files for previous year treatments were invaluable as was the layer for decommissioned roads. Thank you!

RECOMMENDATIONS

Tansy proliferated on Tunnel Creek where no treatment had occurred for several years.

Future Direction of the Project

The Secure Rural Schools Act has provided the opportunity and impetus to develop a collaborative relationship between the Forest Service and local weed boards to address invasive plant issues. We have made remarkable progress both in controlling invasive, detrimental plant species and in creating cooperative relationships with a wide array of entities. The SRSA has been renewed, but project review and funding awards through the Resource Advisory Committee has not taken place. Planning for next season is difficult with funding uncertainties.

Hand applied herbicide treatments has allowed for efficient weed treatment, especially of weed species that do not lend themselves to non-chemical methods or are in difficult to access locations. The Forest Service is in the process of adding aminopyralid, a newer, selective herbicide with very low use rates and toxicity. Future weed control will likely include a combination of herbicide treatments with manual control methods. Soon we hope to be able to shift more time to preventative surveys, early detection and rapid response, and rehabilitation activities, such as re-seeding with native species where it makes the most sense.

We are facing a period of transition as the status of the Secure Rural School Act becomes more precarious. Weed Board staff has extensive knowledge ranging from project history and infestation locations to weed identification and best treatment practices. The County Weed Boards have provided a relatively inexpensive, locally based work force with county wide jurisdiction and long term focus. The working relationship between Weed Board and Forest Service has enabled us to refine and improve many elements of this project over the years. Olympia based Forest Service staff are hours away from most north Olympic Peninsula sites. The expertise, flexibility, and locally based weed boards are ideally suited to identify and control new or small infestations and other tasks as needed and directed by the Forest Service Botany program. We appreciate the opportunity to provide input on weed control strategy and to help coordinate the Forest Service's weed management plan. Intra-agency invasive species control coordination has not only become increasingly important, but also is more likely to occur. This is a direct legacy of the working relationships created on the Olympic Peninsula during the tenure of the Secure Rural School Act. We hope the spirit of partnership endures well into the future. .

Specific recommendations for next year are listed below.

Program Development

- Continued funding from the Forest Service will be vital to maintaining working relationships with the Weed Boards.
- Participate in pre- season planning with other land managers to identify needs, pool resources and formulate more cross boundary invasive plant control projects that protect FS resources.
- Don't hesitate to include a weed board representative in consultation meetings with NFMS and USFW services. We may have solutions to address potential concerns.
- Request invasive species control included as a watershed restoration activity, particularly since most top-priority weeds are habitat threats.
- Apply information garnered from herb Robert research by WSU. Another year of research may be helpful because 2015 fires destroyed most replicates in the Cascades.

WSU researcher Dr. Miller conducts efficacy trials on herb Robert in forest conditions.

Survey and Treatment

- Continue to focus on infrequent, high priority invasives because progress has been made
- Identify locations where ground disturbance is planned and bare ground is expected as a result.
- Secure a contractor or additional crew assistance for Herb Robert treatments on long, heavily infested roads, especially the 3000 road system. Most are beyond the capacity of local weed boards. Unless longer lasting control methods are discovered, we still recommend at least two treatments per season for several years. Herb Robert seed bank appears to be fairly persistent.
- Target specific peavine and Canada thistle sites in eastern Clallam and Jefferson Counties for clopyralid treatments. Encourage the weed board to seek permission to treat the private pit in the Rocky Brook vicinity.
- Jimmy-Come-Lately and Graywolf are likely to have untreated herb Robert sites that have not yet spread widely.
- Re-visit Bonidu Meadows and the Caraco Units. These sites had few weeds last year and were therefore not treated this year
- Continue to include a survey component in the work plan.
- Plan for re-seeding. Possibly explore the use of native forb seeds in addition to grassy species. Ask crews to identify areas that would benefit from re-planting to reduce erosion and possible sediment pollution into streams. Early rains this year provided an excellent opportunity for re-seeding.
- Re-inspect historic knotweed sites at least every other year because of their known ability to return after years of invisibility.
- A list of potential survey sites that reflects these recommendations is given in Appendix D.

Treating Canada thistle in Jupiter Meadow

Very little Canada thistle was found In Pat's Prairie this year

Careful reed canarygrass treatments allowed previously planted sedges to survive.

Documentation

- Changes to the FACTS forms continue to be useful and constructive.
- Please continue to provide the excellent project disc provided at the beginning of the season
-

2015 PROTOCOLS

2015 crew monitors Cranberry Bog treatment

1. Team and Project Dates

This year's project continued to focus almost entirely on treatment, but had time for limited surveys during a few rainy days. Rains in late September and early October allowed for grass seeding opportunities not observed in previous seasons. The crew was asked to monitor at least 50% of treated acreage. Cathy Lucero (Clallam County Coordinator), and field technicians Jon Clevenger, Erik Eyestone, and Chandra Johnson, in various combinations, performed treatments. 2015 fieldwork began in June and continued through the second week in October.

2. Invasive Species Recorded

Treatment and surveys focused on Class A and B-designate weeds on the Washington State Noxious Weed List (see Appendix H), and additional species that are of concern to the Forest Service. In most cases Class B non-designate, Class C, and other low priority non-native weeds were only documented when an infestation was in a site of particular concern (e.g. a Botanical Area), when the infestation was of notable size, or when a new species was found. Exceptions were made for especially invasive species, such as Herb Robert or knotweeds, which threaten undisturbed areas. See G for a complete listing of species recorded from 2002 to 2015. Treatment and surveys were not intended to target every non-native species.

3. Survey and Treatment (see Appendix A):

The project focus was on treatment of known infestations in specific project areas identified by the Forest Service, often including sites that had received treatment in the past. Survey and treatment of new infestations was also a priority, especially if new sites were seen en route to known sites.

a. Many known sites are along roadsides, and are typically surveyed by vehicle. The distance surveyed was measured using a Garmin GPS unit and the area surveyed was calculated using the following formula. Crew made a road specific estimation of how many feet on each side of the road were to be included in the formula.

$$\frac{\text{miles surveyed} \times 5280 \text{ ft/mi} \times \text{ft/roadside} \times 2 \text{ roadsides/survey}}{43560 \text{ ft}^2/\text{acre}}$$

b. Trailheads, campground parking areas, and gravel pits were surveyed on foot and area surveyed or treated was estimated by using measurement functions on a Garmin GPS unit or by other predetermined figures.

c. From 2007 through 2012 miles surveyed were estimated from treatment sites (recorded on FACTS forms) and roads taken to get to those treatment sites. Beginning in 2013, surveyed miles **only includes** a single trip on a road, even though it may have been traveled and surveyed many times during the season. Additionally, **only treated** roads documented on FACTS forms were included, **not** additional roads that were viewed on the way to a project.

d. Small tap rooted weed infestations were often treated manually on rainy days. Seeded plants were dead-headed; heads were bagged and disposed of off-site, during late season treatments.

e. Herbicide treatments were applied based on guidelines established in the 2008 EIS which allow the use of 10 different herbicides.

   i. A legal notice listing all sites under consideration for herbicide treatment (see Appendix I) was published in the Peninsula Daily News. Herbicide applications were carried out between June 16th and October 6th.

   ii. Backpack sprayers were calibrated prior to use on FS lands per federal NPDES standards. A sample calibration sheet and the calibration methodology can be seen in Appendix K.

iii. Foliar herbicide applications were made using 1.5% Element 3A (triclopyr) or Aqua Neat (glyphosate),or 0.5% Transline (clopyralid), and 0.5% Competitor (surfactant).
iv. On-site notices (see Appendix H) were posted prior to treatments and left in place for at least 24 hours afterwards. Treatments in high-use areas such as campgrounds were avoided during busy times (near weekends or holidays), Forest Service recreational personnel were contacted prior to commencing treatment, and sites were posted a week before treatment.

4. Data Collection

The Forest Service identified 24 broad "Project Areas" that consolidated individual species sites reported in previous years. Each "Project Area" was subdivided, usually into road segments or spurs. Clearly defined areas such as campgrounds or pits became a subunit. Each subunit was given its own unique "Reference Number". Please see previous reports for each year's protocol.

Forest Activity Tracking Sheet (FACTS)

FACT sheets are used to record treatments in each Reference # site. This form has been modified several times since its introduction causing some confusion and making yearly comparisons difficult. A sample form is shown in Appendix J

Invasive Plant Inventory for Rock Sources

Rock Source Survey, introduced in 2009, is used to track the suitability of quarry material from both public and private sources to meet FS "weed free standards". FS protocols for filling out this form are included in Appendix J along with a sample form.

Invasive Plant Treatment Monitoring

The Forest Service is required to ensure monitoring of at least 50% of all treated acreage. Information about type, area, and cover class of each species is copied from the original FACTS form relating to treatments at each project. The percent efficacy of treatment is then recorded based on codes that range from 0-100. A sample form is shown in Appendix J.

Olympic NF Invasive Plant Inventory Data Collection Form NRIS

This form is used to record information about new weed sites. Data from this form is entered into **Rangeland PC Data** and submitted to the Forest Service for staff to upload into the **NRIS Terra Database.** For specifics of data collection and entry see previous reports. New sites that were found **and** treated this season were recorded on FACTS forms only.

5. Spatial Data Collection and Mapping:

Weed sites were previously mapped in ArcView GIS by county staff so that a real-time map could be available to the field crew. The shape files produced for that map were retained by the Clallam County Noxious Weed Control Board for use in future fieldwork as necessary. These files are not submitted to the Forest Service because a Forest Service GIS analyst must construct a GIS coverage that coincides with other Forest Service database materials and metadata. Weed Board Protocols for GPS mapping have not been consistent, but are improving. As follows:

a. NWCB crew carries a Garmin 78 pre-loaded with Topo US 24K or a Montana Hunt chip, which identifies landowners. The automatic track log function is enabled.
b. Meta data is set to NAD83 Harn, State Plane North 4601, statute feet. Newer Garmin units that don't allow for this projection are set to UTMs, statute feet.
c. Crew is instructed to turn and leave on units, just prior to entering project area.
d. Crew is directed to take waypoints for significant events or sites, such as beginning or end of treatments, new weed locations, or to document named locations such as quarries.
e. Individual weed sites are plotted as points. If there is no existing waypoint, crew marks a location using a pre-designated symbol and then records the four letter plant code and size of infestation in feet in the comment field.
f. New layers are produced post-season showing where treatment occurred. Waypoints and tracklogs were downloaded in the office and converted into shape files through the Minnesota DNR public domain software DNRGarmin version 6.0.0.15.

In previous years, crew documented the waypoint number, the nature of event or species, and road number in a log book. The waypoint may have also been noted on the relevant FACTS sheet. Unfortunately, since 2013, the crew has rarely kept the log book up to date.

6. Data Reporting

Office staff reviewed FACTS, Monitor, and Rock Source Survey forms and submitted copies of them to the Forest Service; generally biweekly, during the field season. The originals were retained in the Clallam County Weed Board office. More detailed data is included in the Appendices to this report, as described below.

a. **Appendix A** is the Project Area list or "annual work plan" supplied by the Forest Service at the start of the season, with details of 2015 treatments by acreage, date and species. It is a comprehensive account of work accomplished in 2015.
b. **Appendix B** is summary of this year's rock source inspections and treatments.
c. **Appendix C** is a master list of the roads surveyed and treated since the inception of our SRS, Title II projects. This list shows the amount of survey completed on each road, and totals for each year, as well as the number of weeds pulled manually for each year up to 2006. It also lists the area of treatment, by road, completed from 2007 through 2015, and weed species treated.
d. **Appendix D** shows weed sites recommended for next season's project area list.
e. **Appendix E is** a brief summary of weed control work in Clallam and Jefferson Counties, off Forest Service lands.
f. **Appendix F** gives control recommendations for each invasive species identified during the course of this project.
g. **Appendix G** is a list of all weed species reported and entered into the NRIS Terra database over the lifetime of this project.
h. **Appendix H** shows the 2015 Washington State Noxious Weed List-, which is updated annually according to WAC Chapter 16-750. Under RCW Chapter 17.10 all non-federal landowners in the state are responsible for controlling or eradicating listed noxious weeds on their property. The control threshold is defined by RCW 17.10 and is determined by the class into which each weed is placed. This same law provides for the formation of the County Noxious Weed Control Boards, and thus the weed control program in Jefferson County that is supported by this project. Federal agencies are required to work with local agencies to meet or match local weed control standards under the Federal Noxious Weed Act amended in 1994
i. **Appendix I** shows examples of a legal notice regarding herbicide use and an on-site posting notice.
j. **Appendix J** shows a sample of all forms used in the project and Forest Service established protocols for filling out each form.
k. **Appendix K** shows a sample record of calibrations performed to comply with federal NPDES requirements. The calibration methodology is also provided,

APPENDIX A: 2015 PROJECT LIST ACTIONS-

This table is based on the Project List developed by the Forest Service, which served as the work plan for Clallam and Jefferson Counties' Noxious Weed Control Boards (CCNWCB and JCNWCB). The list was categorized into Priority 1A, 1, 2, S (survey need), or no priority. This table includes all Clallam and Jefferson Priority 1A and Priority 1 sites; Priority 2 sites are only shown when treated. Sites shown as Early Detection Rapid Response were originally listed as survey, no priority, or were not shown. There were no contractor treated sites this year. Treatments attributed to other crews have been summarized in the Accomplishment Table and marked here in the notes section. Crew abbreviations are as follows: WCC=Washington Conservation Corps, and WB=Weed board staff.

The table is sorted by road number; smallest to largest. It shows the acreage treated each date the crew was on site, and whether the treatment was manual or chemical. (Re-treatments are identified with green shading and total **35** acres)**. Re-treatments** are noted to account for the work, but **are not included** in the **Acres Treated** column; in order to be consistent with previous year protocols. All told, we treated **312** acres, manually or chemically.

96% of the Priority **1A and 1** sites listed in our work plan **were treated at least once**. Any missed are highlighted in blue and will be called out for treatment in 2016. ED/RR sites requested mid-season by FS staff or newly discovered and treated (**2**), are highlighted in red. The table summarizes each visit to a specific project this year.

Note the **Acres Monitored** column. FS requests that we monitor at least 50% of our treatments. Often crew re-treated remaining plants after monitoring, when weather allowed. Due to the small crew size this year, we only managed to monitor **105.5** acres this year, **32** acres below the 50% goal. However, overall Forest monitoring goals were achieved.

In the Species Treated column, we recorded only those species we found and treated on each site. High priority species have been **bolded** in this column. The Species Treated column does not necessarily list species noted by the crew or FS in prior years. Our Comments column notes high priority species not previously mentioned, or not found this year as well as areas that had poor access that limited their ability to treat.

This year we focused on the sites with the least frequent high priority weeds such as orange hawkweed, yellow archangel, knotweed, and knapweeds in addition to as many Herb Robert sites as possible. A number of sites where meadow knapweeds had been noted in previous years, had none.

Ref #	Priority	6th Field Watershed Name	Site Name	Priority?	Road #	Acres Examined	Acres Treated	Acres Retreated	Acres Monitored	Method	Herbicide Amount (oz)	Date	Species
4	ED/ RR	Bockman Creek	**Mary Clark Pit**	**Y**	2010	1	0.6			Herbicide: Element 3A, Polaris	4.6	9/10/15	**LAGA, POBO**
5	1A	Canyon Creek /Pats Creek	**Canyon Pit**	**Y**	2875000	3.8	3.8			Herbicide: Element 3A, Transline, Polaris	5.33	6/17/15	**CEDE**, CIAR, CIVU
10	1	Canyon Creek /Pats Creek	**Cranberry Bog**	**Y**	2870059	18	6		18	Herbicide: Element 3A, Transline, Polaris	146	7/21/15	CIAR, CIVU, **GERO**, PHAR
10	1	Canyon Creek /Pats Creek	**Cranberry Bog**	**Y**	2870059	6		6		Herbicide: Element 3A, Polaris	64	9/29/15	CIAR, CIVU, **GERO**, PHAR

Ref #	Priority	6th Field Watershed Name	Site Name	Priority?	Road #	Acres Examined	Acres Treated	Acres Retreated	Acres Monitored	Method	Herbicide Amount (oz)	Date	Species
11	1	Canyon Creek /Pats Creek		**N**	2870050	3.2	3.2		3.2	Herbicide: Element 3A Manual: 0.1 acre	12	8/10/15	**CEDE**, CIAR, CIVU, HYPE, **SEJA**
11	1	Canyon Creek /Pats Creek		**N**	2870050	6.6			0.1	Herbicide: Element 3A	1	9/29/15	CIAR, CIVU, **GERO,** LALA
11	1	Canyon Creek /Pats Creek		**N**	2870050	6.6	6.6		6.6	Herbicide: Element 3A, Polars Manual: 6 acres	14.5	9/1/15	**CEDE**, CIAR, CIVU, **GERO,** LALA
11	1	Canyon Creek /Pats Creek		**N**	2870050	6.6				Herbicide: Element 3A		9/29/15	CIAR, CIVU, **GERO**, LALA
14	1	Canyon Creek /Pats Creek		**N**	2870053	4	2.25			Herbicide: Element 3A, Polaris	3.3	9/16/15	**CEDE**, CIAR, CIVU, CYSC
17	2	Canyon Creek /Pats Creek		**N**	2870058	1.2	0.6		0.6	Herbicide: Element 3A, Polaris	1.88	7/21/15	CIAR, CIVU
18	2	Canyon Creek /Pats Creek		**Y**	2870059	1	1		1	Herbicide: Element 3A	12	7/21/15	CIAR, CIVU, CYSC, **GERO**
18	2	Canyon Creek /Pats Creek		**Y**	2870059	1.5			1.5	Herbicide: Element 3A	18	9/29/15	CIVU, **GERO**
19	1	Canyon Creek /Pats Creek	**Lower Caraco Quarry**	**Y**	2870000	1.5	1.25			Herbicide: Element 3A, Polaris	12.5	9/16/15	**CEDE,** CIAR, **GERO**
20	1A	Canyon Creek /Pats Creek	**Ned Hill Quarry**	**Y**	2878123	1.2	1.2		1.2	Herbicide: Element 3A, Transline, Polaris	4.33	6/17/15	CIAR, CIVU, CYSC, LALA
26	2	Canyon Creek /Pats Creek		**N**	2878000	2.2	2.2		2.2	Herbicide: Element 3A, Transline	9.5	7/2/15	CIAR, CIVU, LALA, SEJA
26	2	Canyon Creek /Pats Creek		**N**	2878000	0.6	0.25		0.6	Herbicide: Element 3A, Transline	1	6/17/15	**GERO**
27	1	Canyon Creek /Pats Creek		**Y**	2875020	0.75	0.25			Herbicide: Element 3A, Transline	1	6/1/15	CIVU, CYSC, **GERO**

Ref #	Priority	6th Field Watershed Name	Site Name	Priority?	Road #	Acres Examined	Acres Treated	Acres Retreated	Acres Monitored	Method	Herbicide Amount (oz)	Date	Species
21	1	Canyon Creek /Pats Creek	**Upper Caraco Quarry**	**N**	2870000	2	0.75			Herbicide: Element 3A, Polaris	3.3	9/16/15	CIAR, **GERO, SEJA**
29	1	Canyon Creek /Pats Creek		**N**	2878100	2.3	2.3		2.3	Herbicide: Element 3A, Transline	10.7	8/10/15	CIVU, **GERO**, LALA, **SEJA**
32	1A	Canyon Creek /Pats Creek	**unnamed gravel pit**	**Y**	2870000	2.5	2.5			Herbicide: Element 3A, AquaNeat	21	6/16/15	**CEDE**, CIAR, CIVU, CYSC, **DIFU,** LALA, **PORE**
42	2	Canyon Creek /Pats Creek		**Y**	2878120	1.1	1.1		1.1	Herbicide: Element 3A, Transline	5.25	6/17/15	CIVU, CYSC, **GERO**, LALA
49	2	East Twin River		**Y**	3040000	7.2	2			Herbicide: Element 3A	78	9/22/15	**GERO**
49	2	East Twin River		**N**	3040000	7	3			Herbicide: Element 3A	96	10/6/15	**GERO**
50	1	East Twin River		**N**	3068000	5.3	0.01			Herbicide: Polaris Manual: .13 acre	0.13	9/22/15	CIAR, CYSC
54	1	Headwaters Sol Duc River		**N**	2918000	10	2.35			Manual		8/31/15	CIVU, CYSC, **GERO**
57	1A	Jimmy-come-lately Creek	**Coho Pit**	**N**	2840080	1	1			Herbicide: Element 3A, Transline	5.5	8/12/15	**CEST,** CIAR, CIVU, LALA
58	1A	Jimmy-come-lately Creek	**Louella Rock pit**	**Y**	2800351	1	1		1	Herbicide: Element 3A, Transline	1.3	8/12/15	**CEDE, SEJA**
60	1	Jimmy-come-lately Creek	**Raccoon Pit**	**N**	2855070	1.5	0.1		1.5	Herbicide: Element 3A	10	6/9/15	**CEDE,** CIAR, CIVU, CYSC, **GERO**, HYPE, LALA, **SEJA**
61	1	Jimmy-come-lately Creek	**2845073 spur pit**		2845073								

Ref #	Priority	6th Field Watershed Name	Site Name	Priority?	Road #	Acres Examined	Acres Treated	Acres Retreated	Acres Monitored	Method	Herbicide Amount (oz)	Date	Species
62	1A	Jimmy-come-lately Creek	**Wolf Quarry 2**	**Y**	2840120	0.5	0.5			Herbicide: Element 3A, Transline	5.5	8/12/15	CIVU, **GERO**, HYPE
63	1	Jimmy-come-lately Creek		**Y**	2855000	1.2	1.2		1.2	Herbicide: Element 3A	84	6/9/15	CIAR, CIVU, **GERO,** HYPE, **SEJA**
63	1	Jimmy-come-lately Creek		**Y**	2855000	0.6	0.6			Herbicide: Element 3A Manual: 0.1 acre	16	10/1/15	CIAR, **GERO, SEJA**
63	1	Jimmy-come-lately Creek		**Y**	2855000	0.4	0.2	0.6	0.4	Herbicide: Element 3A	6	6/25/15	CIAR, CIVU, **GERO,** HYPE, **SEJA**
64	1	Jimmy-come-lately Creek			2855070	1.8	1.8		1.8	Herbicide: Element 3A	20	6/9/15	**CEST,** CIAR, CIVU, CYSC, **GERO**, HYPE, LALA, **SEJA**
64	1	Jimmy-come-lately Creek		**N**	2855070	1.8		0.6		Herbicide: Element 3A	8	10/1/15	CIAR, **GERO**
65	1	Jimmy-come-lately Creek		**Y**	2800351	2	2		2	Herbicide: Element 3A, Transline	1.3	8/12/15	**CEDE,** CIAR, CIVU
66	1	Jimmy-come-lately Creek		**Y**	2855100	4.4	1.4		4.4	Herbicide: Element 3A	64	6/25/15	CIAR, CIVU, CYSC, **GERO,** HYPE, **SEJA**
66	1	Jimmy-come-lately Creek		**Y**	2855100	4.4		3		Herbicide: Element 3A	12	10/1/15	CIAR, **GERO**
68	ED/ RR	Jimmy-come-lately Creek		**N**	2840080	2	2			Manual		8/12/15	CIVU, **SEJA**
70	1	Jimmy-come-lately Creek		**Y**	2840070	5	5			Herbicide: Element 3A, Transline	24	8/12/15	CIAR, CIVU, **GERO, SEJA**
73	1	Jimmy-come-lately Creek		**N**	2855030	0.5	0					6/25/15	No weeds present

Ref #	Priority	6th Field Watershed Name	Site Name	Priority?	Road #	Acres Examined	Acres Treated	Acres Retreated	Acres Monitored	Method	Herbicide Amount (oz)	Date	Species
74	1	Jimmy-come-lately Creek		**N**	2855032	1.3	0.75		1.3	Herbicide: Element 3A, Transline	1	6/25/15	CIAR, CIVU, HYPE, **SEJA**
75	1	Jimmy-come-lately Creek	**Louella Work Center**	**Y**	2800350	0.5	0.5		0.5	Herbicide: Element 3A, Transline	1.3	8/12/15	**CEDE,** CIVU
78	ED/ RR	Jimmy-come-lately Creek		**Y**	2840000	0.35	0.35		0.35	Herbicide: Element 3A, Transline	8	8/12/15	CIVU, CEJA, **GERO, SEJA**
80	1	Jimmy-come-lately Creek			2840034								
94	1	Lower Gray Wolf River	**Dungeness Forks CG**	**Y**	2880050	10	10	6		Herbicide: Element 3A	246	7/22/15	**GERO**
94	1	Lower Gray Wolf River	**Dungeness Forks CG**	**Y**	2880050	7	7			Herbicide: Element 3A	162	7/22/15	**GERO**
94	1	Lower Gray Wolf River	**Dungeness Forks CG**	**Y**	2880050	6		6		Herbicide: Element 3A, Polaris	94	9/30/15	**GERO**
94	1	Lower Gray Wolf River	**Dungeness Forks CG**	**Y**	2880050	3		3		Herbicide: Element 3A	48	9/28/15	**GERO**
98	2	McDonald Creek/Siebert Creek		**Y**	2877000	5	4			Herbicide: Element 3A, Transline	9.5	7/2/15	CIAR, CIVU, **GERO,** HYPE, RUAR, **SEJA**
99	1	McDonald Creek/Siebert Creek	**Pat's Prairie**	**N**	2877000	30	20			Herbicide, Transline	4	7/2/15	CIAR
101	1A	Middle Dungeness River	**Lost Pit (aka Canine Pit)**	**Y**	2800130	2	1.5		2	Herbicide: Element 3A, Transline	5.5	8/12/15	CIAR, CIVU, **GERO,** LALA, **SEJA**
102	1	Middle Dungeness River		**N**	2820000	6	6		6	Herbicide: Element 3A, AquaNeat, Polaris	16	7/27/15	**CEDE,** CIAR, CIVU, **GERO,** HYPE, LALA, **SEJA**
105	ED/ RR	Middle Dungeness River		**N**	2870230	2.5	2.5			Herbicide: Element 3A	12	9/28/15	CIAR, **GERO,** HYPE

Ref #	Priority	6th Field Watershed Name	Site Name	Priority?	Road #	Acres Examined	Acres Treated	Acres Retreated	Acres Monitored	Method	Herbicide Amount (oz)	Date	Species
106		Middle Dungeness River		**Y**	2870250	14	14			Herbicide: Element 3A, Transline Manual: 0.1 acre	28	9/23/15	**CEDE**, CIAR, CIVU, CYSC, HYPE, LALA, **SEJA**
108	2	Middle Dungeness River		**Y**	2800130	0.1	0.1		0.1	Herbicide: Element 3A, Transline	0.26	8/12/15	**CEST,** CIAR
117	1	Middle Sol Duc River			2071000								
118	1	Middle Sol Duc River	**Snider Work Center**	**Y**	3040800	2.5	2.5			Herbicide: Element 3A, Transline, Polaris	32	9/14/15	CIAR, CYSC, **GERO**, **LALA**, PHAR, **POBO,** RUAR
118	1	Middle Sol Duc River	**Snider Work Center**	**Y**	3040800	3	2.5			Herbicide: Element 3A, Polaris	56	9/1/15	**ARMI,** CIVU, **GERO, POBO,** RUAR
118	1	Middle Sol Duc River	**Snider Work Center**	**Y**	3040800	2	2			Herbicide: Element 3A	34	9/15/15	**GERO,** LALA, RUAR
119	2	Middle Sol Duc River		**Y**	3040000	8.1	4.5			Manual		9/1/15	CIVU, CYSC
133	1A	North Fork Calawah River	**Grindstone Pit**	**N**	2923070	1.5	0.2			Herbicide: Element 3A	4	9/14/15	CYSC, HYPE, PHAR
150	1	Snow Creek/Salmon River			2852000								
152	1A	North Fork Calawah	**Calawah Pit**	**Y**	2900015	1.5	0.6			Herbicide: Element 3A	12	10/5/15	CYSC, **SEJA**
162	1	Upper Dungeness River	**Camp Handy**		2870000				10				CIAR
165	1A	Upper Sol Duc River	**Bonidu Pit**	**Y**	2900000	3	0.85		6	Herbicide: Element 3A,, Polaris	16	9/10/15	CIAR, CYSC, **GERO**

Ref #	Priority	6th Field Watershed Name	Site Name	Priority?	Road #	Acres Examined	Acres Treated	Acres Retreated	Acres Monitored	Method	Herbicide Amount (oz)	Date	Species
165	1A	Upper Sol Duc River	**Bonidu Pit**	**Y**	2900000	6		6		Herbicide: Element 3A, Polaris	7.28	9/24/15	CYSC, **DIFU, GERO**, HYPE, **LUAR, LUVU**, PJAR
166	1	Upper Sol Duc River	**Klahowya CG**	**Y**	2900990	6	2			Manual		8/31/15	**GERO**
166	1	Upper Sol Duc River	**Klahowya CG**	**Y**	2900990	5		0.3		Manual		10/7/15	**GERO**
168	1A	Upper Sol Duc River	**Tom Creek Pit**	**N**	2931000	3	0.2			Herbicide: Element 3A	0.5	9/10/15	CYSC, HYPE
173	1A	Upper Sol Duc River	**Littleton Horse Camp gravel pit**	**N**	3071000	0.5	0.02			Herbicide: Element 3A Manual: 0.1 acre	0.2	9/10/15	CYSC, HYPE, LALA
176		Upper Sol Duc River		**Y**	2900960	1	1			Herbicide: Element 3A	18	9/24/15	**GERO**, LALA, **SYOF**
194	1A	Little Quilcene River	**Bon Jon Quarry**	**Y**	2800000	1	1			Herbicide: Element 3A, Transline	6	7/27/15	CIVU, HYPE, LALA, **SEJA**
195	1	Little Quilcene River		**Y**	2800010	0.75	0.75		0.75	Herbicide: Element 3A	40	7/29/15	**GERO**
195	1	Little Quilcene River		**Y**	2800010	2.5	2.5		2.5	Herbicide: Element 3A	126	7/28/15	**GERO,** HYPE, **SEJA**
198	2	Little Quilcene River		**Y**	2800000	1.2	1			Herbicide: Element 3A, Transline	60	7/27/15	CIAR, **GERO,** HYPE, LALA, **SEJA**
285	1	Lower Big Quilcene River	**Quilcene office compound**	**Y**	2730300	12	6			Herbicide: Element 3A	28	7/7/15	CIVU, CYSC, **GERO,** HYPE, **SEJA**
289	1	Lower Big Quilcene River		**Y**	2700000	3.9	3.9			Herbicide: Element 3A	30	8/4/15	CIAR, CYSC, **GERO**, HYPE, LALA, **SEJA**

Ref #	Priority	6th Field Watershed Name	Site Name	Priority?	Road #	Acres Examined	Acres Treated	Acres Retreated	Acres Monitored	Method	Herbicide Amount (oz)	Date	Species
289	1	Lower Big Quilcene River		**Y**	2700000	2.4	2.4			Herbicide: Element 3A, Transline	63	8/5/15	CIAR, CIVU, **GERO**, HYPE, LALA, **SEJA, VIMI**
291	1	Lower Big Quilcene River		**Y**	2740000	1.2	1.2			Herbicide: Element 3A	36	8/4/15	**GERO**
291	1	Lower Big Quilcene River		**Y**	2740000	3	3			Herbicide: Element 3A, Transline	86	8/11/15	**GERO,** LALA, **SEJA**
292	1	Lower Big Quilcene River	**Falls View CG**	**Y**	2730200	8	6			Herbicide: Element 3A	60	7/7/15	CIAR, CIVU, **GERO**, HYPE, **SEJA**
295	2	Lower Big Quilcene River		**Y**	2620000	2.4	2.4		2.4	Herbicide: Element 3A	96	7/8/15	CIAR, CIVU, **GERO,** HYPE, **SEJA**
295	2	Lower Big Quilcene River		**Y**	2620000	2.6	2.6			Herbicide: Element 3A, Transline	40	6/23/15	CIVU, **GERO**, HYPE, **SEJA**
296	2	Lower Big Quilcene River		**Y**	2700080	1.4	1.4			Herbicide: Element 3A	22	8/4/15	CIVU, **GERO,** HYPE, **SEJA**
298	2	Lower Dosewallips River		**Y**	2610000	3.8	3.6		3.6	Herbicide: Element 3A	108	7/14/15	CIAR, **GERO, SEJA**
298	2	Lower Dosewallips River		**Y**	2610000	1.8	0.5			Herbicide: Element 3A	6	7/14/15	CIAR, **GERO, SEJA**
300	2	Lower Dosewallips River		**Y**	2610040	2	2			Herbicide: Element 3A	44	7/13/15	**GERO, SEJA**
300	2	Lower Dosewallips River		**Y**	2610040	0.5	0.5			Herbicide: Element 3A	24	7/14/15	CIAR, **GERO, SEJA**
301	2	Lower Dosewallips River		**N**	2620000	2.5	2.5			Herbicide: Element 3A	12	6/24/15	CIAR, CYSC, HYPE, **SEJA**

Ref #	Priority	6th Field Watershed Name	Site Name	Priority?	Road #	Acres Examined	Acres Treated	Acres Retreated	Acres Monitored	Method	Herbicide Amount (oz)	Date	Species
301	2	Lower Dosewallips River		**Y**	2620000	3.3	3.3			Herbicide: Element 3A, Transline	48	6/23/15	CIAR, CIVU, CYSC, **GERO,** HYPE, RUAR, **SEJA**
301	2	Lower Dosewallips River		**N**	2620000	4.8	4.8			Herbicide: Element 3A, Transline	72	6/22/15	CIAR, CIVU, CYSC, **GERO,** HYPE, RUAR, **SEJA**
303	1	Lower Dosewallips River	**Elkhorn CG**	**N**	2610050	3	0.5			Herbicide: Element 3A	2	7/13/15	CIVU, GERO, SEJA
306	2	Lower Dosewallips River		**N**	2620050	3.2	3.2			Herbicide: Element 3A	18	6/29/15	CIAR, CYSC, HYPE, **SEJA**
309	1	Lower Duckabush River		**Y**	2510000	7	3		7	Herbicide: Element 3A	66	7/6/15	CIAR, CIVU, **GERO,** HYPE, **SEJA**
309	1	Lower Duckabush River		**Y**	2510000	2.3	2.3		2.3	Herbicide: Element 3A	24	6/24/15	CIVU, **GERO,** HYPE, **SEJA**
310	1	Lower Duckabush River	**Collins CG**	**Y**	2510070	8.2	8.2			Herbicide: Element 3A	96	7/1/15	CIAR, **GERO, SEJA**
454		Upper Big Quilcene River		**Y**	2740000	0.4	0.4			Herbicide: Polaris Manual: 0.4 acre	3.9	9/3/15	CIAR, HYPE, **SEJA**
454		Upper Big Quilcene River		**Y**	2740000	5.3	5.3			Herbicide: Element 3A, Polaris Manual: 5.3 acres	11.7	9/8/15	CIAR, CYSC, **GERO, SEJA**
462	1	Lower Big Quilcene River		**Y**	2700040	5.4	5.4			Herbicide: Element 3A, Polaris	64	7/30/15	**AEPO, ARMI**, CIAR, **GERO**, HEHE, HYPE, **PRLA, SEJA**

Ref #	Priority	6th Field Watershed Name	Site Name	Priority?	Road #	Acres Examined	Acres Treated	Acres Retreated	Acres Monitored	Method	Herbicide Amount (oz)	Date	Species
462	1	Lower Big Quilcene River		**Y**	2700040	11.2	11.2			Herbicide: Element 3A	124	8/6/15	CIAR, CIVU, CYSC, **GERO**, HYPE, LALA, S**EJA**
462	1	Lower Big Quilcene River		**Y**	2700040	3	3			Herbicide: Element 3A	60	8/11/15	**GERO,** HEHE, ILAQ, **SEJA**
586	1A	Lower Gray Wolf River	**Armpit quarry**	**N**	2870150	0.6	0.3			Herbicide: Element 3A, Transline	9.3	9/17/15	CIAR, CIVU, LALA
590	1	Lower Big Quilcene River	**PT Muni WS caretakers cabin**	**Y**	2700040	2	2			Herbicide: Element 3A, Polaris	22	7/30/15	CIAR, CIVU, **GERO**, **HIAU, LAGA, SEJA, VIMI**
612	1A	Upper Sol Duc River	**Mt. Muller TH gravel pile**	**N**	3071000	0.5	0.04			Herbicide: Element 3A Manual: 1 acre	1	9/10/15	CIVU, **GERO**, LALA, RUAR
613	1	Upper Sol Duc River		**Y**	2929000	7.3	5		7.3	Herbicide: Element 3A Manual: 4 acres	14	9/15/15	CYSC, LALA, **GERO**
615	1	Canyon Creek /Pats Creek		**N**	2878050	1.5	1.5			Herbicide: Element 3A, Transline	5.3	8/10/15	CIAR, CIVU, **GERO,** HYPE, LALA, **SEJA**
617	2	Lower Big Quilcene River		**Y**	2620060	1.2	1.2			Herbicide: Element 3A	12	6/29/15	**CEDE,** CIAR, , CYSC, HYPE, **SEJA**
631	2	Lower Dosewallips River		**Y**	2610000	1.45	1			Herbicide: Element 3A	8	7/13/15	CIVU, CYSC, **GERO, SEJA**
648	2	Bockman Creek		**N**	2903000	0.5	0.3			Herbicide: Element 3A	6	10/5/15	CYSC, **GERO**
675	1	Middle Dungeness River		**Y**	2800250	1.6	1		1.6	Herbicide: Element 3A	4	8/12/15	CIAR, CIVU, **GERO, SEJA**

Ref #	Priority	6th Field Watershed Name	Site Name	Priority?	Road #	Acres Examined	Acres Treated	Acres Retreated	Acres Monitored	Method	Herbicide Amount (oz)	Date	Species
697	1	Canyon Creek /Pats Creek	**Juniper Meadow**	**N**	2875070	3.5	3			Herbicide: Element 3A, Transline	21.3	8/10/15	CIAR, CIVU
766	1	Upper Big Quilcene River	**Sink Lake**	**N**	2760000	1.5	1			Herbicide: Element 3A	5.3	7/29/15	PHAR
767	1	Lower Big Quilcene River	**Lower Big QuilceneTrail**	**Y**	2700080	1.8	1			Herbicide: Element 3A	14	8/4/15	**GERO**, HYPE, **SEJA**
768	1	Lower Dosewallips River	**Lower Dosewallips River Riparian Area**	**Y**	2610000	12	6.31			Herbicide: Element 3A, Polaris	100	7/20/15	CIAR, **GERO,** LALA, **POBO, SEJA**
768	1	Lower Dosewallips River	**Lower Dosewallips River Riparian Area**	**Y**	2610000	3	3			Herbicide: Element 3A	150	7/16/15	**GERO**
768	1	Lower Dosewallips River	**Lower Dosewallips River Riparian Area**	**N**	2610000	5.5	5		5.5	Herbicide: Element 3A, Polaris	170	7/15/15	**GERO**
768	1	Lower Dosewallips River	**Lower Dosewallips River Riparian Area**	**Y**	2610000	4	4		4	Herbicide: Element 3A, Aquaneat	114	7/14/15	CIVU, **GERO**
840	1	Canyon Creek /Pats Creek	**Slab Camp / Deer Ridge TH**	**N**	2878000	0.5	0.1		0.5	Herbicide: Element 3A, Transline	0.98	6/17/15	CIAR, CIVU, **GERO**
843	S	Jimmy-come-lately Creek		**N**	2840130	2.7	0.1			Manual		9/2/15	CYSC
844	S	Jimmy-come-lately Creek			2845200	0.4				Survey Only		9/2/15	CIAR
845	S	Snow Creek/Salmon River			2845000	6.5				Survey Only		9/2/15	CIAR, CIVU, HYPE, **SEJA**
846	S	Snow Creek/Salmon River			2845150	0.5				Survey Only		9/2/15	HYPE, LALA, **SEJA**
847	S	Snow Creek/Salmon River			2845120	2.7				Survey Only		9/2/15	CIVU, **GERO,** HYPE, **SEJA**
848	S	Snow Creek/Salmon			2845090	0.6				Survey Only		9/2/15	CIVU, HYPE,

Ref #	Priority	6th Field Watershed Name	Site Name	Priority?	Road #	Acres Examined	Acres Treated	Acres Retreated	Acres Monitored	Method	Herbicide Amount (oz)	Date	Species
		River											**SEJA**
850	S	Snow Creek/Salmon River			2845040	0.36				Survey Only		9/2/15	HYPE
891	1	Middle Dungeness River	**East Crossing CG**	**Y**	2860011	1	1			Herbicide: Element 3A	6	9/28/15	CIAR, CIVU, **GERO,** LALA
893	1A	South Fork Calawah	**Mystery Pit**		2900200								CIVU, **SEJA**
EDRR	1A	South Fork Calawah	**EDRR**	**N**	2840080	2	2			Manual		8/12/15	CEJA, CIVU, **SEJA**
EDRR	1A	South Fork Calawah	**EDRR**	**Y**	2800353	0.6	0.6		0.6	Herbicide: Element 3A, Transline	3	8/12/15	
			TOTALS			437.96	276.38	31.5	105.5		3741		

APPENDIX B: ROCK SOURCE SURVEYS AND TREATMENT

17 FS rock sources were inspected and treated. One that was identified as a priority by 2014 crew could not be found this year; we will locate the documentation to assist us in finding it next year. In general, sites that have been treated for several years are in very good condition. A rock source inventory provided by the FS in 2008 indicates there are over 90 rock sources in the Olympic within Jefferson and Clallam counties; many appear to no longer exist. As the Forest Service prepares for future harvest and road building additional surveys to locate rock sources and confirm status will allow us to prepare these sources for use when needed. Dates, treated species, and suitability are given here. Rock Source Index numbers and codes, when available, have been added because they are helpful when locating sites.

Several patches of knotweed found in the Mary Clark pit this summer.

We made a concerted effort to survey most prominent private quarries in Clallam County (10) as well as one in Jefferson County. These are shown after the FS-owned sources. Owners of the Shine Quarry were contacted, but declined a survey. We hope to have current surveys of most quarries that might be requested for use by contractors for Forest Service road projects.

One widely used state quarry, the Mary Clark, was surveyed. Renewed emergence of POBO and newly discovered LAGA make this source undesirable for the near future.

Some color coding has been added to indicate at a glance, Forest Service rock source standard, and thus suitability, each rock source achieved this year. Green shading indicates currently suitable, yellow indicates some caution should be used, red indicates currently not suitable. Grey indicates rock source indicated on the work list but slated for inspection by a non-weed board crew. Orange indicates unknown.

Name	RSI	RSI Code	Road	Ref. #	Priority	Weeds	Date	Treatment Type/Suitability	Acres Treated
Armpit Quarry		28701500.4	2870150	586	2	CIAR, CIVU, LALA	9/17/15	Chemical meets standard B-treat LALA along road.	1
Bockman Pit	76	29020009.2	2902	588	1	CYSC, SEJA	9/5/14	NChemical meets standard B	0.5
Bonidu Pit	8	290000037.2	2900	165	1A	CYSC4, CIVU, HYPE **GERO, PHAR**	9/10/15 9/24/15	Chemical meets standard C- GERO getting less, not in main body. Trace PHAR Be careful!	5.5
Bon Jon Quarry		260000004.5	2600	194		HYPE, LALA, SEJA	7/27/15	Chemical Very clean	.5
Calawah Pit	133	290001500.1	2900	152	1A	CYSC4, SEJA	10/5/15	Chemical-looking much better.	0.8
Canyon Pit	139	287500001.4	2875000	5	2	**CEDE5**, CIVU CIAR,LALA	6/17/15	Chemical not suitable	3.8

Name	RSI	RSI Code	Road	Ref. #	Priority	Weeds	Date	Treatment Type/Suitability	Acres Treated
Coho Pit						**CEST**, LALA, CIAR	8/12/15	Chemical Two CEST plants at edge of road. Great shape.	5.5
Grindstone Pit	122	292307000.1	2923070	133	1A	CIVU, CYSC, PHAR3	9/14/15	Chemical meets requirements	.5
Littleton Horsecamp stockpile		307100000.0	3017000.3	173	2	CYSC, HYPE, LALA	9/10/15	Chemical meets requirements-minimal GERO, all removed	0.5
Loop Quarry aka-spur (unnamed) Pit		284507300.9	2845073	61		CIAR, CIAR, SEJA,	10/16/14	Not treated this year, but good condition last year-no CEDE found	0.0
Louella Rock Pit		280036000.4	2800351	58	1A	CIVU, CIAR, HYPE	8/12/15	Chemical meets requirements-no CEDE found this year	0.03
Lost Pit (a.k.a Canine Pit)		Nt correctly listed	2800130.6	101	1A	CIAR4, CYSC4, **GERO**, HYPE, LALA, SEJA	8/12/15	Chemical meets requirements- **GERO** behind biggest mound in woods, very little left	2
Lower Caraco Quarry	144	287000001.0	2870000	19	2	**GERO** SEJA CIVU CEDE4	9/16/15	Chemical not suitable largely because of GERO –careful of storing material here!-improving	.5
Mt Mueller TH Gravel Pile		307100000.3	3071000.3	612	2	CIVU, GERO, LALA, RUAR	9/10/15	Chemical meets requirements-trace amounts only	0.3
Mystery Pit		2900200.?				**POBO**		Searched for but could not find. Will locate previous documentation	
Ned Hill Quarry (aka Sandstone Quarry)	138	287812500.5	2878125	20	2	LALA4 CIVU CIAR4, CYSC	6/17/15	Chemical meets standard B	.01
Raccoon Pit		285507001.3	2855070	60	1A	**CEDE**, CIAR4, CIVU, CYSC4,**GERO**, HYPE, LALA4, SEJA,	6/9/15	Chemical not suitable-I CEDE plant discovered and treated.	1.5
Tom Creek Pit	51	293100000.2	2931	168	2	CIVU, DIPU,HYPE	9/10/15	Chemical meets requirements-no CEDE5, PHAR found	0.01

Name	RSI	RSI Code	Road	Ref. #	Priority	Weeds	Date	Treatment Type/Suitability	Acres Treated
Unnamed Gravel Pit		Nt known	Junction 2878 X 2870	32	2	**CEDE5** CIAR, CYSC, HYPE, LALA, **PORE**, RUAR/RULA	6/16/15	Chemical Not suitable-don't use south half-PORE, CEDE5, single DIFU	.75
Upper Caraco Pit						**GERO**, CIAR, SEJA	9/16/15	Chemical-trace amounts only	.75
Wolf Quarry 2		28401200.3	2840120	62	2	CIVU, **GERO**, SEJA	8/12/15	Chemical Meets requirements-GERO down bank, nt in pit.	.1
Private Quarries									
Blake Sand & Gravel			Intersect of Hogsback and Cays Rd, Sequim			**BUDA**,CIVU, **COMA**, CYSC, DACA, **FOVU**, RUAR	9/1/15	Chemical not suitable, too many species not found in FS	
Davis Sand & Gravel			870 Evans Rd, Sequim			**DIFU**	9/15/15	Very clean, owner meticulous. Few teasel rosettes noted, owner will control	
Haller Quarry			2 m south on River Rd, on gate on left			**BUDA, CEJA** (single plant),CIAR, CIVU, **DIFU**,RUAR	9/17/15	All weeds treated by owner. BUDA biggest problem, DIFU only near entrance, will reck	
Hecklesville Quarry		Private	44 Heckle Rd off US 101, before Beaver			CIVU, CYSC, GERO,HYPE, ILAQ, LALA, RUAR	6/4/15	Overhanging broom problems, several GERO detected and removed on road to site. Does not appear in use currently-	
Hillcar-Fletcher Quarry		Private	US 110			CIVU, CYSC, HYPE, RUAR	4/15/15	Excellent condition- have checked this quarry for yrs-owner very co-operative	
Snider Quarry		Private	252 E Snider Rd. off US101 west of Port Angeles			CASE, CIVU, CYSC, GERO, ILAQ	6/4/15	One small patch GERO all removed at time of inspection, CIVU rebounding, sprayed by owner-excellent condition	
Beaver Falls Quarry		Private	US113			CIVU, HYPE, PHAR, RUAR	6/7/14	2014 last visit-excellent condition-cked mult. Yrs-treated-manager very co-operative-new ownership	

Name	RSI	RSI Code	Road	Ref. #	Priority	Weeds	Date	Treatment Type/Suitability	Acres Treated
Elwha Rock Products			Off Hwy 101, Place Rd, on right			CYSC, DIPU, **POBO**, SEJA,	9/17/15	Chemical POBO concern	
Green Crow			Elwha River Rd, on left			CIAR, CIVU, CYSC, DIPU, **LUAR**, PHAR,	9/17/15	Chemical LUAR and PHAR concern	
Lakeside Blue Mountain			N off Hwy 101, near Blue Mt Rd			**CEST**, CIAR, CIVU, **COMA**, CYSC, DACA, **POCO**, **SONI**	9/15/15	Not suitable-too many unusual weeds not present on FS lands. CYSC evident in active face.	
Lakeside Place Rd Quarry			Place Rd, on right			CIVU, CYSC, DIPU, HYPE, LALA, **SEJA**,	9/17/15	Chemical-might be able to isolate from considerable broom in back of pit	
Penny Creek Quarry		Private	450 Penny Creek Rd, Quilcene			CYSC, **GERO**, LALA, PHAR, **POBO**, SEJA	8/315	Currently not suitable- POBO is biggest concern Owner had all problem weeds sprayed by.	
County Quarries									
Place Rd Pit			Place Rd, on right			CYSC, **DIFU**, PHAR, **SOSA**,	9/17/15	Chemical-Not suitable-too many unusual weeds not present on FS lands.	
Ranger Pit			Place Rd, on right			**CEDE**, CIAR, CIVU, CYSC, **DIFU**, LALA, PHAR, **POBO**, RUAR	9/17/15	Chemical- Not suitable-too many unusual weeds not present on FS lands.	
State Quarry									
Mary Clark Pit and Extension aka Box Car		DNR	From Hwy 101 Mary Clark Rd. About 1.2 m on rt.			CYSC, LALA, PHAR, **POBO**, SEJA, **LAGA**	6/4/15	LAGA was newly discovered this year. Only POBO and LAGA treated. Considerable problems with CYSC.-Box Car not bad.	
Additional to Consider for Inspection in 2016									
Anderson Bros. Quarry		Private	Old State Route-off Herrick Rd			CIAR, CYSC		Previously inspected in 2010-very good rock-generally clean	
Shine Quarry		Private	US 101					Condition Unknown- Declined inspection-likely lots of broom	

APPENDIX C: ROADS SURVEYED OR TREATED

The following table shows where survey and treatment work occurred and what species were reported since the initiation of the project in 2002**.** To make room for new data while preserving this important program history, accomplishments on each road have been subsequently grouped and condensed into blocks, based on data consistency or similar focus,(i.e., survey, vs., control, herbicide allowed or not). Individual year accomplishments on each road can be found in prior reports.

For common name equivalent of Forest Service weed species plant codes, see Appendix G.

This table is based on a table of all roads provided by Olympic National Forest in 2002, but currently contains only Forest Service roads within Clallam and Jefferson Counties. Many roads have since been closed or decommissioned. The lower-numbered roads (<2500), originally included in this table because of surveys conducted in Mason and Gray's Harbor Counties on behalf of Olympic National Forest, have been removed. See reports prior to 2010 for that information. All or a portion of 32 roads have been decommissioned since this list was compiled; they are highlighted.

The project focus has shifted each year as the program matures. Scope of accomplishments is directly tied to project funding and Forest Service policies, which have both varied since its inception and affect crew composition and size. Additionally, reporting protocols were modified by the Forest Service, changing how on the ground conditions were reported and how accomplishments were documented. Specific comments are presented after the roads table to add perspective.

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	**No. Years Visited**	**Survey Miles**	**# of Weeds**	**Acres Treated (2006 Only)**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**
SR101	3	2	4	0.1	**GERO** HICA **SEJA**	19	28.7	CYSC **POBO** POSA	0											
CR5695	5	4.98	8,499		CIAR CYSC **SEJA**	4	2	**SEJA**	1.7											
CR5331	3	8.24				6	1.03	**CEDE GERO SEJA**	7.5											
CR4361	1								2.6											
CR4360	1								2.6											
CR3057	1	1.9	3	0.1	**SEJA**				1.9											
CR3039	2	1.1	4,959	0.1	**GERO**	4	0.5	**SEJA**	1.4											
CR2515	1	0.4							0											
CR2500	4	25.1	35,074		CYSC, **GERO**				7.6											
CR2274	1								3.8											
CR2071	4	2	15	0.2	**SEJA**	1	3	CIAR CYSC **GERO** LALA **POBO**	1.5											

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	**No. Years Visited**	**Survey Miles**	**# of Weeds**	**Acres Treated (2006 Only)**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**
CR2036	1								5	6	**GERO POBO**									
CR 5006	1								1.22											
3116000	4	10				3.5	3.1	CIAR **GERO** RUDI		0.1	CIVU CYSC HYPE **SEJA** TAVU									
3100420	1	0.6																		
3100400	1	2.9																		
3100300	3	5				2	3.5	**GERO**												
3071015	1	0.6																		
3071000	5	3.4	60		CYSC	1						0	0.9	CIVU CYSC **GERO** HYPE LALA **SEJA**	0.5	0.8	CIVU CYSC **GERO** HYPE LALA **SEJA**			
3068200	3	7.2	815		CYSC															
3068190	2	0.4																		
3068000	7	32.3	521		**CEDE** CYSC **SEJA**	2.8	5.1	CYSC	3.58			5.6	0.5	CIVU CYSC HYPE **SEJA**				2.2	0.01	CIAR CYSC
3067000	3	7.06	1,402		CYSC **SEJA**							3.6	4.5	CYSC **GERO**						
3050150	1					1.1	1.7	**GERO**		3.3	CYSC									
3050011	4	1.5				2.5	5.08	CIVU **GERO** HYPE	2.9											
3050000	5	3.8	2		**SEJA**	18	18	CIAR CIVU **GERO** **HIAU** HYPE LEVU LALA	20.2											

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
3040900	1	0.5								11.7	CYSC **GERO** HIAU LEVU									
3040800	8	0.5	54,709	1.85	**ARMI** **GERO** ILAQ **POCU**	2.5	17	CIAR CIVU CYSC **GERO** LALA **POBO** RUDI **SEJA**	1	82.3	CIVU CIAR **GERO** HIAU HYPE ILAQ LALA PRLA **SEJA**	0	0.9	CIVU **GERO** LALA	21	7.4	CIVU CIAR CYSC **GERO** LALA PHAR **POBO** RUAR			
3040595	3	4	373		CIVU **SEJA**	4	1	**GERO** SEJA												
3040200	1	1								4.13	CIVU **GERO** ILAQ **POBO** RUDI									
3040115	3	1	95	0.1	**GERO**				0.7											
3040100	3	4	8	0.3	CYSC **SEJA**	2			2.3											
3040025	3	0.4	1		RUDI															
3040012	1	0.31	2	0.1	CYSC					1.09	CIVU DIPU HYPE **SEJA**									
3040011	2	2																		
3040000	13	71	35,136	1.3	CYSC **GERO** **SEJA**	67	23.4	**CEDE** CIAR CIVU CYSC **GERO** LALA **SEJA**	49			5.2	4	CIAR CIVU CYSC **GERO** **SEJA**	21	6.6	CIAR CIVU **GERO** **SEJA**	12.5	9.5	CIVU CYSC **GERO**
3006300	1	4.1																		
3006011	1	1.2								38.4	**CEDE** CIAR CIVU **GERO** HYPE ILAQ LALA									

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
											PHAR RUDI **SEJA**									
3006000	3	8				2	1	CYSC	6.5											
3000800	1														1.8	0.1	**GERO**			
3000591	1								0.3	2.46	CIVU **GERO** HYPE, RUDI RULA **SEJA**									
3000401	1	1																		
3000400	1	2.2								0.3	CIVU DIPU **GERO**									
3000395	1	0.2																		
3000370	2								0.8			0.4	0.7	CIVU DIPU LEVU **SEJA**						
3000330	1								2.2											
3000300	5	3.5							3.5	0.07	CIVU CYSC **GERO SEJA**	1.75	5.2	CYSC **GERO** CIVU	3.5	4.2	CIVU CYSC **GERO** HYPE **SEJA**			
3000260	1	0.7								0.7	CIVU CYSC **SEJA**									
3000250	4	10	10	1.2	CYSC	8	2.66		3.8	0.7	CIVU CYSC **GERO SEJA**	3.8	1.7	LALA	3.1	3.3	CIVU CYSC **GERO** HYPE LALA			
3000220	1	2.8																		
3000215	5	3.6				1	2	**GERO**	0.6	0.1	**GERO**	0.6	0.3	**GERO** CYSC						

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
3000200	9	70	6	0.2	**SEJA**	30	26.6	CIVU CYSC **GERO** **SEJA**	18.8			8.46	62.04	CIVU CYSC DIPU **GERO** LALA	8.5	11.6	CIVU CYSC **GERO** HYPE LALA			
3000011	1	1								0.4	CYSC **GERO**									
3000000	9	92	883,098	1	CYSC CIVU **GERO** RULA **SEJA**	39	32	**CEDE** CIAR CIVU CYSC **GERO** LALA **SEJA**	30.8	30.3	CIVU CYSC **GERO** LALA **SEJA**	16	39.93	CIAR CIVU CYSC **GERO** HYPE LALA **SEJA**	16	23.8	CIVU CYSC **GERO** HYPE LALA **SEJA**			
2978085	2	1.1																		
2978040	2	0.3								37.3	CIAR CIVU CYSC **GERO** HYPE LALA RUDI RULA									
2978035	2	0.1																		
2978030	2	0.6																		
2978030	2	0.7																		
2978025	2	0.3																		
2978015	2	1.6	18		CYSC															
2978011	2	0.4																		
2978000	3	4.7	3,604		CYSC **SEJA**										4.6	2.2	CYSC			
2952000	1								2.2											
2932070	1	0.9	12		CYSC															
2932050	1	0.3								0.1	CIVU CYSC									
2932040	1	0.4																		
2932035	1	0.2																		
2932031	1	0.5																		
2932030	3	1.4				1	0.1	CYSC												
2932000	6	15	2,153	0.3	LEVU	11		CYSC	5											

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
					CYSC			**GERO SEJA**												
2931200	1	2.5																		
2931190	1	1.7								5.2	CIVU GERO HYPE **LAGA** RUDI RULA **SEJA**									
2931000	5	12	1		**SEJA**				12.3			0	5	**CEDE** CIVU CYSC HYPE PHAR	2.4	0.04	**CEDE** CIVU CYSC HYPE PHAR			
2929070	6	3	525		CYSC **GERO** RULA	6	2	**GERO**	6.3						3.3	0.25	**GERO** RULA			
2929000	8	10				13	1	CIVU CYSC **GERO HIAU**	15.4	18	**CEDE** CIVU CYSC LALA	3	5.5	CIVU CIAR CYSC **GERO** HYPE PHAR RUAR	11	2.65	CIVU CYSC **GERO** HYPE RUAR	3	3	CYSC **GERO** LALA
2923100	1	0.2								6.12	**GERO** DIPU HYPE RUDI RULA									
2923095	1								0.2	13.4	CIAR CIVU CYSC DIPU **GERO** HYRA LALA LEVU PHAR									
2923090	1								1.2											
2923077	2					16	2.15	CYSC **SEJA**	2.6	0.2	CYSC HYPE TAVU **SEJA**									

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
2923074	1								0.8	1	CYSC HYPE TAVU SEJA									
2923073	1								0.8	0.1	CYSC HYPE **SEJA**									
2923072	1								0.8	0.01	CIVU									
2923070	6	5	2		SEJA	9	8.6	CIAR CIVU CYSC **GERO** HYPE RUDI SEJA	6			0	1.8	CIVU CYSC HYPE LALA PHAR	5.2	0.5	CYSC HYPE PHAR LALA			
2923060	3	1				3	0.15	CIAR CYSC **GERO**	4.6	0.02	CIAR CYSC HYPE									
2923020	1								1.2	1.06	CIVU CYSC PHAR									
2923015	1								2.4	1.2	CIAR CIVU CYSC **GERO** HYPE RULA **SEJA**									
2923000	6	41	1,434	0.5	CIAR CYSC **HIAR SEJA**	27	4	CYSC **GERO**	18	0.73	CYSC **SEJA**									
2922250	2								2.6	3	CIVU CYSC **GERO SEJA**	1.3	2.8	**CEDE** CIVU CYSC LALA **SEJA**						
2922240	1									15.2	CIAR CIVU CYSC **GERO** HYPE RULA **SEJA**	1.1	0.504	CIVU LEVU **SEJA**						

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	**No. Years Visited**	**Survey Miles**	**# of Weeds**	**Acres Treated (2006 Only)**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**
2922200	1								2.86	4	CIVU CYSC LALA									
2922020	2								1.72			0.86	0	NONE						
2922000	3	13				20	4.2	**GERO**		0.3	CYSC HYPE									
2920210	1	0.2								0.01	**GERO**									
2920020	2	1.4													1.4	1	**GERO**			
2920000	4	6							8						6	3.5	CIVU **GERO SEJA**			
2918110	3	1				1	1	CYSC DIGIT LEVU LALA	1											
2918100	3	3				3	1	CYSC DIGI LEVU LALA	17	0.5	CIAR CIVU CYSC **GERO**									
2918000	6	20	2,315		CYSC **SEJA**	9	1.5	CYSC DIGIT LEVU LALA	5.4			4.1	0.2	**GERO**	13.6	2.7	CIAR CIVU CYSC **GERO** HYPE PHAR	4.9	2.35	CIVU, CYSC **GERO**
2912060	3	2.8	3		**SEJA**				7	20	CIAR CIVU CYSC **GERO** HYPE **SEJA**									
2903000	2	7	78		CYSC **SEJA**													0.4	0.5	CYSC **GERO**
2902375	1	0.8								1	CIAR CYSC **GERO** HYPE									
2902300	1	0.6																		
2902000	5	2.91	4,175	0.2	CYSC **SEJA**							0	0.5	CYSC **SEJA**	9.2	0.5	CIAR CIVU CYSC			

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
2900992	1					0.5	0.1	**GERO**												
2900990	6	2.4	5,300		CYSC **GERO**	2	0.4	**GERO**	0.3							1.7	CIVU CYSC **GERO** ILAQ			
2900960	2	0.1																0.2	1	**GERO** LALA **SYOF**
2900810	1								2.6	3.1	CYSC **GERO**I LAQ									
2900700	1											2.8	1.8	CIVU CYSC						
2900650	1	1.2								0.1	CIAR CYSC RULA									
2900540	1	2																		
2900200	2	0.7	54		CYSC **SEJA**															
2900070	1	2.3																		
2900030	1								3											
2900015	4	0.1				0.7	4.5	CYSC **GERO** RUDI SEJA	0.1			0	0.8	CYSC **GERO** HYPE LALA PHAR **SEJA**						
2900000	11	72.2	664225	2.3	CIAR CYSC **GERO** **HIAU** POSA **SEJA**	25	8.1	CIVU CYSC **GERO** **HIAU** HYPE LALA RUDI SEJA	27			0	1.5	CIVU CYSC **GERO** HYPE **TAVU**	38.3	10	CIVU CYSC **GERO** **HIAU** HYPE PHAR SEJA			

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
2880050	12	0.5	255,004	0.5	**GERO**	1.5	23	**GERO**	1.2	4.12	CIAR **POSA** RUDI RULA	0	18.9	CIVU **GERO** LALA PHAR		13	CIAR CIVU **GERO**	0	10	**GERO**
2880000	9	17	9,923	0.3	**GERO SEJA**	8	5.1	**CEDE** CIAR CYSC **GERO SEJA**	5.51	20.2	CIAR CIVU CYSC DIPU **GERO** HIAU HYPE HYRA LALA LEVU PHAR RULA **SEJA**	1	8.5	CIVU **GERO** HYPE CIAR	1.85					
2878123	6	0.2				0.2			0.25	29.5	CIAR **GERO** LALA	0	1	CIVU CYSC LALA	0.2	0.01	CIVU CYSC LALA			
2878120	8	1	2,170		CYSC	2	2	LALA	1.4	4.5	CIAR CIVU **GERO** HYPE LALA	1	1.2	CIAR LALA	1	1.2	CIVU **GERO** LALA	0.6	1.1	CIVU CYSC **GERO** LALA
2878110	4	1				1	1	LALA	1	2	CIAR CIVU CYSC LALA	0.9	2.9	CIVU LALA						
2878109	2	0.27								0.25	CIVU CYSC LALA	0.25	1	LALA						
2878108	2	0.13								0.25	**CEDE** CIVU CYSC LALA	0.1	0.201	CIVU CIAR CYSC LALA						
2878104	1											0.2	0.02	**GERO**						
2878102	2	0.4										0.4	1.45	CIVU LALA						
2878101	1											0.1	0.36	CIVU LALA						

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
2878100	6	1.5				1	3	LALA	1.95			0.95	2	CIAR CIVU HYPE LALA	0.95	0.5	CIAR CIVU LALA	0.95	2.3	CIVU **GERO** LALA **SEJA**
2878085	3	1				1	1	CIAR CIVU **GERO**	1											
2878080	3	1.5				1	0.5	CIAR LALA	1	0.2	CIAR CIVU **GERO** LALA **SEJA**									
2878060	3	0.5	127		CYSC	1	0.5	CIAR LALA	1	0.01	CIAR CIVU **SEJA**									
2878050	7	0.6								0.25	CIAR CYSC **SEJA**	0.6	0.98	**CEDE** CIVU **GERO** LALA **SEJA**				0.6	1.5	CIAR CIVU, **GERO** HYPE LALA **SEJA**
2878000	11	4	2,971	0.2	CYSC	20	13	**CEDE** CIAR CYSC **GERO** LALA **SEJA**	16	0.25	CIAR CYSC **SEJA**	4	23.5	CIAR CIVU LALA	4	1.2	**AEPO** CIAR **GERO** HYPE LALA **SEJA**	1.8	2.2	CIAR CIVU **GERO** LALA **SEJA**
2877100	2	0.5																		
2877052	1	0.29							1	12.6	CIAR CIVU **GERO** LALA **SEJA**									
2877050	1	2.65																		
2877040	5	2.5				1	0.2	**CEDE** CIAR CIVU **SEJA**	2.1			1.1	2.101	CIAR CIVU CYSC **GERO** RUAR	1.1	0.1	**GERO**			
2877000	7	5				20	13.4	**CEDE** CIAR CIVU CYSC LALA	24.3			0	17.5	CIAR				4.2	5	CIAR CIVU **GERO** HYPE **RUAR**

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
								SEJA												**SEJA**
2875090	1	0.1								1.8	CIAR CIVU CYSC **GERO** **SEJA**									
2875070	5	2.5				1	0.5	CIAR CYSC	3.6	15.8	CIAR CIVU CYSC HYPE LALA **SEJA**	1.8	0.51	CIAR CYSC **SEJA**						
2875020	7	0.5	6		CYSC	1	0.5	CIAR CYSC **POBO**	1.6			0.6	0.02	CIAR CIVU **POBO**	0.6	0.1	**CEJA** CIAR CIVU	0.6	1.5	CIVU CYSC **GERO**
2875000	11	12	268	0.4	**CEDE**	23	10.8	CEBI **CEDE** CIAR CIVU LALA	17.7	0.91	**CEDE** CIAR **GERO** **SEJA**	6.5	9.21	**CEDE** **CEJA** CIAR CIVU CYSC **GERO** LALA **SEJA**	6.5	3.8	**CEDE** CIAR LALA RUAR	0.1	3.25	CIVU **GERO**
2870270	2	3.5		0.28	CIAR CIVU	3.5	3.2	**CEDE** CIVU HYPE **SEJA**		1.6	**CEDE** CIAR CIVU CYSC PHAR **SEJA**									
2870250	1					1	1.5	CEBI **CEDE**		13	**CEDE** CIAR CIVU CYSC **GERO** HYPE LALA **SEJA**									
2870230	5	4	38	0.3	CIAR CIVU HYPE **SEJA**	4	0.4	CIAR CIVU **GERO**										1.4	2.5	CIAR **GERO** HYPE

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	**No. Years Visited**	**Survey Miles**	**# of Weeds**	**Acres Treated (2006 Only)**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**
2870150	4	0.5				1	3	LALA	0.7						0.5	0.2	CIVU LALA **SEJA**			
2870130	2	1	1	0.1	CYSC				1											
2870110	2	0.5	729		CYSC				0.5	5.1	CIAR CIVU LALA									
2870059	10	3	19,529		**CEDE** CIAR CIVU CYSC **GERO SEJA**	1			1.2	0.1	**CEDE SEJA**	0	9.5	CIAR CIVU **GERO** PHAR	0.4	4.8	CIAR CIVU CYSC **GERO** HYPE PHAR	0.4	1	CIAR, CIVU CYSC **GERO**
2870058	7	3		2.55	CIAR **GERO** PHAR	8	6.5	CIAR CIVU **GERO** PHAR	5.55	0.1	CYSC							1	0.6	CIAR, CIVU
2870057	5					5	4	CIAR CIVU **GERO** HYPE PHAR	1.2	15.2	CIAR CIVU CYSC DACA **GERO** HYPE LEVU PHAR **SEJA**	0	1	CIAR CIVU CYSC						
2870056	10	2	14	0.1	**CEDE SEJA**	3	8.9	**CEDE** CIAR CIVU CYSC **SEJA**	2.8	5.2	CIAR CIVU CYSC DACA **GERO** HYPE LEVU **SEJA**	0.6	3.035	CIAR CIVU **GERO**	0.6	0.7	CIAR CIVU CYSC **GERO** HYPE			
2870054	5					1.5	4	**CEDE** CIAR CIVU	2.5	3.1	CIAR CIVU CYSC **GERO** PHAR **SEJA**	0	0.7	CIAR CIVU						

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
2870053	8					2	1.7	**CEDE** CIAR CIVU	4.7	4.75	**CEDE** CIAR CIVU CYSC DACA **GERO** HYPE LEVU **SEJA** TAVU				1.5	1.2	**CEDE** CIAR CIVU HYPE	1.5	2.25	**CEDE** CIAR CIVU CYSC
2870052	2								1.6	10.3	**CEDE** CIAR CIVU CYSC HYPE LEVU PHAR **SEJA**									
2870050	13	16	110	0.8	**CEDE** CIAR CIVU CYSC **GERO** HYPE LALA **SEJA**	13	10.5	CIAR CIVU **GERO** **LEVU** PHAR RUDI **SEJA**	11.2	15.3	**CEDE** CIAR CIVU **GERO** HYPE LALA **SEJA**	2.8	6.7	**CEDE** CIAR CIVU **GERO** LALA PHAR **SEJA**	2.8	0.5	CIAR CIVU **GERO** HYPE	2.3	6.6	**CEDE** CIAR CIVU HYPE **SEJA**
2870030	7	5	78		**CEDE** CYSC **SEJA**	4	3.5	**CEDE** CIAR CYSC **SEJA**	5.6	0.3	CIAR CIVU HYPE									
2870000	13	143	3,853	3.13	**CEDE** CYSC **SEJA**	256	21.7	**CEDE** CIAR CIVU CYSC **GERO** HYPE LALA LEVU **SEJA**	52.3	14.9	**CEDE** CIAR CIVU CYSC DACA **GERO** HYPE LALA LEVU PHAR **SEJA**	0	12	**CEDE** CIAR CIVU **GERO** LALA	16.2	3.5	**CEDE** CIAR CIVU DACA **GERO**	9.15	21.1	**CEDE** CIAR CIVU **GERO** HYPE LALA **SEJA**
2860120	2	1.6								10.4	**CEDE** CIAR CIVU HYPE **SEJA**									

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
2860011	2	1	2,708		**GERO** **SEJA**					25.6	**CEDE** CIAR CIVU CYSC DACA **GERO** HYPE LALA PHAR RUDI **SEJA**									
2860000	5	50	54,000		CIVU **GERO**										3	0.1	**GERO** RUAR			
2855100	3	2.4							1.1									1.1	4.4	CIAR CIVU CYSC **GERO** HYPE **SEJA**
2855070	10	5	5497	0.52	**CEDE** CIAR CYSC **GERO** RULA **SEJA**	3	5	CEBI **CEDE** CYSC **SEJA**	4.4			1.5	2.3	**CEBI** CIVA,CIVU CYSC **GERO** HYPE LALA **SEJA**	1.5	4.6	**CEDE** CIAR CIVU CYSC **GERO** HYPE LALA **SEJA**	1.5	1.8	**CEST** CIAR CIVU **GERO** HYPE LALA **LYSC** **SEJA**
2855032	3	1.6	1		RULA					2	**CEDE** **GERO** HYPE **SEJA**							0.9	1.3	CIAR CIVU HYPE **SEJA**
2855030	3	5.4	19,200		**SEJA**				1.25	7.17	**CEBI** CIAR CIVU CYSC **GERO** HYPE LALA **SEJA**							0.4	0	NONE
2855000	11	10	51,947	0.4	CEBI **CEDE** CIVU CYSC GERO **SEJA**	11	2.2	**SEJA**	1.3						2.8	1.7	CIAR CIVU **GERO** HYPE **SEJA**	2.6	4.9	CIAR CIVU **GERO** HYPE **SEJA**

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
2852150	2	1.29	25		CYSC					3.2	CIAR CIVU CYSC **GERO** HYPE **SEJA**									
2852090	2	10	3,362		CIAR CYSC **GERO** SEJA					3										
2852000	6	5	47,605	0.3	**CEDE** CIAR **GERO** RULA SEJA	2	1	**CEDE**	5.5											
2851090	2	1																		
2851080	2	4	1,660		CYSC **SEJA** TAVU					3.94	**CEDE** CIAR CIVU CYSC **GERO** HYPE **SEJA**									
2851000	3	8	10,090	0.6	**SEJA**															
2850124	1	0.2																		
2850120	3	3		0.2	CYSC				2.8											
2850093	1	0.1																		
2850090	1	1								3.2	CIVU CYSC **GERO** HYPE **SEJA**									
2850010	4	3	5,352	0.9	RULA **SEJA**							1.5	3.26	CIVU **GERO** **SEJA**						
2850000	9	22	67,334	0.6	CYSC **GERO** RULA **SEJA**				14.6						7.4	2.9	CIAR CIVU CYSC **GERO** ILAQ HYPE **SEJA**	0.1	3.25	CIVU **GERO**
2845200	1	0.28																		

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
2845150	1	0.2								9.3	CIVU **SEJA**									
2845120	2	2	84		CYSC **SEJA**	2	1.9	CIVU CYSC **SEJA**												
2845090	2	1	12		CYSC **SEJA**															
2845073	5	1				1.5	2	CYSC	2.8						0.9		CIAR CIVU CYSC LALA **SEJA**			
2845070	5	6	1,860		CYSC	6	4	**CEDE** CIAR CIVU CYSC **SEJA**	4.6						1.5					
2845040	1	0.3	160		**SEJA**					4.19	**CEDE** CIAR CIVU CYSC DACA DIPU HYPE **SEJA**									
2845000	5	5	12,378	0.7	**SEJA**	10			5.4	0.9	CIAR CIVU HYPE **SEJA**				5.4					
2840150	1	1	1		**SEJA**															
2840130	2	1																1.1	0.1	CYSC
2840120	4	1.27							1.8						1.6	0.1	CIVU **GERO SEJA**			
2840084	1	0.25																		
2840080	3	0.89	1		RULA				0.3	1.05	CIVU **GERO** HYPE **SEJA**							1.4	2	CIVU **SEJA**
2840071	3	2	36		**BOOF SEJA**				3.2											

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	**No. Years Visited**	**Survey Miles**	**# of Weeds**	**Acres Treated (2006 Only)**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**
2840070	3	4	5,753		CYSC **SEJA**					1	CIAR CIVU LALA **SEJA**							1.5	5	CIAR CIVU **GERO SEJA**
2840036	1								3.5	7.5	CIAR CIVU CYSC **GERO** HYPE LALA PHAR **SYOF**									
2840035	1								1											
2840034	3	2							2	1	**CEDE** CIAR **SEJA**				1.4	1	CIAR CIVU **GERO**			
2840030	2	3							3	0.6	CIAR, CIVU, HYPE									
2840000	7	11	10,010		CIAR CYSC **SEJA**	10			1.8	2.5	**CEDE** CIAR CIVU **GERO** SEJA				4.8			0.1	0.25	CIVU CYSC **GERO SEJA**
2830034	1	0.33								7.5	**CEDE** CIAR CIVU HYPE **SEJA**									
2830032	1	1								5.5	CIAR CYSC **GERO** HYPE LEVU **SEJA SYOF**									
2830030	1	2																		
2830000	4	10	1,250		CEBI	11	0.2	**SEJA**												
2820000	6	4	2,274	0.2	**SEJA**	8	2	**CEDE** CIAR **SEJA**	6.25									2.5	6	**CEDE** CIAR CIVU **GERO** HYPE LALA **SEJA**

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	**No. Years Visited**	**Survey Miles**	**# of Weeds**	**Acres Treated (2006 Only)**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**
2810070	1	0.61																		
2810000	2	8	10,190		CYSC **SEJA**					17	**CEDE** CIAR CIVU **GERO** HYPE LALA **SEJA**									
2800351	8					4.5	3	**CEDE** CYSC	2.4			0.8	3.33	**CEDE** CIAR CIVU HYPE	0.35	1.1	**CEDE** CIAR CIVU HYPE	0.8	2	**CEDE** CIAR CIVU
2800350	4					3	4	**CEDE** CIAR CIVU	0.3						1	2	**CEDE** CIAR **GERO** LALA **SEJA**			
2800310	4	1	4,655	0.2	CYSC					3.22	**CEDE** CIAR CIVU **GERO** HYPE **SEJA**									
2800290	2	1	2		CYSC **SEJA**					1.51	**CEDE** CIAR CIVU HYPE **SEJA**									
2800270	1	1	310		CYSC **SEJA**															
2800262	1	0.6																		
2800260	1	1.2																		
2800250	5	5	92	0.1	**SEJA**							1.1	0.04	**SEJA**				1.1	1	CIAR CIVU **GERO** **SEJA**
2800240	1	0.8																		
2800220	1	1.2																		
2800210	1	0.4																		
2800145	1	0.3																		

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	**No. Years Visited**	**Survey Miles**	**# of Weeds**	**Acres Treated (2006 Only)**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**
2800132	3	1	463	0.1	CEBI **CEDE**	1									0.6	0.6	CIAR CIVU **SEJA**			
2800130	4					2	1.3	CEBI **SEJA**				0	1.77	CIAR CYSC **GERO** HYPE LALA **SEJA**	0.7	3.2	**CEDE** CIAR CIVU CYSC **SEJA**	0.8	2.1	**CEDE CEST** CIAR CIVU
2800060	1	1																		
2800010	9	1	10	0.1		3	6	CIAR CIVU **GERO** ILAQ LALA	2.5			0.5	0.5	**GERO**	0.5	7.3	CIVU CIAR **GERO SEJA**	1	3.25	**GERO** HYPE **SEJA**
2800000	13	89	70,321	1	**CEDE** CIAR CIVU CYSC **GERO SEJA**	87	88.8	CEBI **CEDE** CIAR CIVU CYSC DIPU **GERO** ILAQ LALA **SEJA**	31.6			14.8	2	SURVEYED ONLY CIAR, CIVU, CYSC, LALA, **SEJA**	15.6	3.2	**CEDE GERO** HYPE LALA **SEJA** TAVU	0.5	1	CIAR **GERO** HYPE LALA **SEJA**
2760000	1									24.8	CIAR CIVU **GERO** HYPE **SEJA**	0	2	PHAR						
2750020	1	1.5								4	CIAR CIVU CYSC DIPU HYPE LALA PHAR **SEJA**									
2750000	3	5				5	8	CIAR CIVU CYSC LALA **SEJA**	5											

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
2740110	1					1.5	1	**CEDE** CIAR CIVU CYSC **SEJA**												
2740075	2	0.5				0.5	1	**CEDE** CIAR CIVU CYSC **SEJA**		18	CIAR CIVU HYPE LALA **SEJA**									
2740072	4	1	200	0.1	CEBI	1	1	**CEDE** CIAR CIVU CYSC **SEJA**												
2740070	3	4				3	1	**CEDE** CIAR CIVU CYSC **SEJA**												
2740060	4	9	33	0.2	CYSC	9	1	**CEDE** CIAR CIVU CYSC **SEJA**												
2740000	7	21				25	3.6	CEBI **CEDE** CIAR CIVU CYSC **SEJA**	2.4									2.7	15.6	CIAR **GERO** HYPE LALA **SEJA**
2730300	9	1	934		CYSC	2	8.3	CIAR CYSC **GERO** LALA **PORE** RUDI **SEJA**	1.2			0	20.5	CIAR CIVU CYSC **GERO** **PORE** RUAR **SEJA**		7	CIAR CIVU CYSC **GERO** **PORE** RUAR **SEJA**			
2730200	11	5	19,621		CIVU **GERO** **SEJA**	2	4	**GERO**	1.6	8	**CEDE** CIAR CIVU DIPU **GERO** HYPE LALA **SEJA**	0	3.9	**GERO**		1.6	**CIVU** CIAR **GERO** HYPE ILAQ **SEJA**			

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
2730100	4	0.4	35		**SEJA**				0.1	8.73	CYSC **GERO** HEHE HYPE LALA **PORE** RULA **SEJA**									
2730020	3	1								11.2	CIVU **GERO** HYPE									
2730011	3	1	51		**GERO**				1.9	0.1	CIVU **SEJA**									
2730000	4	15	146,400		CYSC **SEJA** TAVU															
2700330	2	1							1	4	**GERO** HYPE ILAQ **SEJA**									
2700140	1	1.2																		
2700100	1	4.6								0.3	**SEJA**									
2700090	1	1.99																		
2700080	5					1	2	CIAR CIVU CYSC **GERO** LALA **SEJA**	1.6			0.3	2	CIVU **GERO** **SEJA**	0.3	0.8	CIAR **GERO** HYPE LALA **SEJA**	0.3	1.4	CIVU **GERO** HYPE **SEJA**
2700040	7					4	11.2	BORA, CIVU CYSC **GERO** HEHE **HIAU** ILAQ LALA **LAGA** PHAR PRLA **SEJA**	15.1			3.7	15.4	**AEPO** CASE CIAR CIVU **GERO** **HIAU** HYPE ILAQ **LAGA** LALA PHAR **SEJA** **SYOF** **VIMI**	2.7	15.3	CASE CIVU **GERO** **HIAU** **LAGA** PHAR **SEJA** **SYOF** **VIMI**	6.1	19.6	**ARMI** **AEPO** CIAR CIVU CYSC **GERO** **HEHE** HYPE LALA **PRLA** **SEJA**

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
2700000	11	37	4,201		**SEJA** TAVU	21	15.1	**CEDE** CIAR CIVU CYSC **GERO** LALA **SEJA**	26.9	0.73	**GERO** HYPE LALA SEJA	2.6	1	CIVU **GERO** SEJA	12.7	10.9	CIAR CIVU CYSC **GERO** HYPE PHAR **POBO** **SEJA**	2.6	6.3	CIAR CYSC **GERO** HYPE LALA SEJA **VIMI**
2650090	2	1.68								46.6	**AEPO** CASE CIAR CIVU CYSC DACA **GERO** **HIAU** HYPE ILAQ **LAGA** LALA SEJA SYOF VIMI	1.7	0	SEJA						
2650050	2	0.9								39.2	**CEDE** CIAR CIVU CYSC **GERO** HYPE LALA **POSA** **SEJA**									
2650000	4	15	2		**ARMI**				2.7			7.5	0	CIAR HYPE **SEJA**						
2620060	1								2.8											
2620056	5	0.76	24		**CEDE**				1.6	6.61	CIAR CIVU HYPE **SEJA**	0.8	1	**SEJA**				2.8	1.2	**CEDE** CIAR CYSC HYPE **SEJA**

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
2620053	2	1.3								3.1	CIAR CIVU CYSC HYPE **SEJA**									
2620051	3	0.89							1.6	1	CIVU HYPE **SEJA**									
2620050	4	2.8							4									2.2	3.2	CIAR CYSC HYPE **SEJA**
2620043	1	0.7								0.3	HYPE **SEJA**									
2620036	1								0.6	3.8	CIAR CIVU HYPE **SEJA**									
2620035	1								1.2											
2620030	1	9.7								1	CIAR CIVU CYSC HYPE **SEJA**									
2620000	8	35	39,464		CIVU CYSC **GERO** RULA **SEJA**	12			8.6	2.6	CIAR CIVU CYSC **GERO** HYPE **SEJA**	7.3	1	**GERO** SEJA	4.3	3.2	CIAR CIVU CYSC DIPU **GERO** HYPE	10.7	15.6	CIAR CIVU CYSC **GERO** HYPE RUAR **SEJA**
2610200	12	11	3,676	0.2	CYSC **GERO** HEHE RUDI **SEJA**	4	5	CYSC **SEJA**	1.2			0	2	CYSC **GERO** HEHE HYPE LALA RUAR **SEJA**		1	CYSC **GERO** HYPE **SEJA**			
2610050	2					1	1	CIAR CYSC **GERO** **SEJA**		15.9	CIAR CIVU CYSC GERO HYPE **SEJA**	0	1.75	**GERO** **SEJA**						

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	No. Years Visited	Survey Miles	# of Weeds	Acres Treated (2006 Only)	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species	Survey Miles	Acres Treated	Weed Species
2610040	5	1	3,000		**SEJA**	1	2	CIAR CYSC **GERO SEJA**	1	4.1	CIVU CYSC **GERO** HYPE LALA **SEJA**							1	3	CIAR **GERO SEJA**
2610012	2	0.85	397	0.2	**GERO**				0.5											
2610010	3									4	**GERO**	0.9	37.77	**GERO** HYPE ILAQ **SEJA**	0.9	5.9	**GERO**	1.5	0.75	**COAR GERO SEJA**
2610000	12	20	6,570	0.1	**CEDE** CIAR CIVU CYSC **GERO** RULA **SEJA**	32	17.5	CIAR CYSC **GERO POBO SEJA**	8.4	0.42	CYSC	4.75	72.39	CIAR CIVU **GERO** HYPE **POBO SEJA**	37.8	5.4	CIVU CIAR **GERO** HYPE **POBO SEJA**	6.4	31.08	CIVU CYSC **GERO** LALA **POBO SEJA**
2530000	5	5.7							4.4			10.1	3.53	CIVU CYSC **GERO** HYPE **SEJA**	10.1	1.3	**GERO** HYPE **SEJA**			
2527000	1	1.2								59.6	CIAR CIVU CYSC **GERO** HYPE LALA **POSA SEJA**									
2510070	10	1	1,600	0.82	**GERO**	1	6.5	**GERO**	1.3	1	**GER**O **SEJA**	0	14	**GERO** HYPE		5.3	**GERO** HYPE RUAR **SEJA**		8.2	CIAR **GERO SEJA**
2510065	4	1							1			0.2	2.6	CIAR CIVU **GERO**	0.2	1.7	CIVU **GERO** HYPE			
2510060	2									29.5	CIVU **GERO**	0.1	0.01	**SEJA**	0.1	0.2	HYPE **SEJA**			
2510012	2	1							1.7	0.5	**GERO** HYPE, **SEJA**									

		Survey, manual, minimal herbicide 2002-2006				2007-2009			2010-12			2013			2014			2015		
ROAD	**No. Years Visited**	**Survey Miles**	**# of Weeds**	**Acres Treated (2006 Only)**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**	**Survey Miles**	**Acres Treated**	**Weed Species**
2510000	8	40	53	0.53	**CEDE** CYSC **SEJA**	41	19.5	CIAR CIVU **GERO** HYPE RUDI RULA **SEJA**	42			6.6	6	CIAR CIVU DACA DIPU **GERO** HYPE, **SEJA**	25.5	8.4	CIVU CIAR **GERO** HYPE RULA PHAR **SEJA**	6.6	9.3	CIAR CIVU **GERO** HYPE **SEJA**
2503000	1								3.7											
2500000	4	4				19	3.75	CIAR CYSC **GERO POBO SEJA**		10.8	CIAR CIVU CYSC **GERO** HYPE LALA **SEJA**				2.5	1.6	CIAR CIVU CYSC **GERO** HYPE **POBO SEJA**			
2190220	1		251		COTO **POCU**					11.7	**GERO HYPE SEJA**									
2190200	3	4		0.1	**POCU**	38	1.7	CIVU CYSC DIPU **POBO SEJA**												
2190170	1	2																		
2190000	2	14				10														
2100000	2	8	50		**SEJA**															
2760	1											0.5	0.6	CIAR CYSC **SEJA**						
2071	1								1	5	**GERO** LALA **POCU** RUDI									
TOTALS		**1467.2**	**2695174**	**28.43**		**1087.3**	**590.6**		**459.42**			**148.72**	**466.913**		**355**	**222**		**125**	**230.8**	

*As of 2013 Survey miles recorded for a road only once, retreats or additional visits to complete project, not counted in mileage. Total acres treated may not include areas which were not specifically associated with a road, such as an administrative site. It is not clear whether surveyed miles may have included duplicates in 2014.

PROGRAM HISTORY FROM 2002-2014-A PERSPECTIVE

- Focus: When the project began in 2002 the focus was almost exclusively on surveying, with a small amount of manual weed removal. From 2003 to 2005 surveying was still the primary focus, and the use of herbicide was limited by policy. Different crews manually removed thousands of weeds each year. In 2006 some herbicide treatments were allowed. After the completion of a new EIS, herbicide treatments expanded and the focus shifted from survey to control. This year we have condensed years with manual only, 2002-2006. The increase in productivity is striking. In a single year crews were able to cover in one year what previously took nearly five. As we transition to more riparian, restoration, or habitat projects, productivity may decrease due to long walk in or other logistical difficulties.
- Crew Resources: The County has hired a small field crew each year since the inception of the project, but changes in funding have meant that the crew size has ranged from 2 to 5 members. Some years a WCC crew has been made available to the Counties (typically for two weeks in each county, but this can vary). From 2007 to 2009 an Olympic Corrections Center (OCC) crew was used, mainly to pull Scotch broom from pits, quarries and roadsides. A Clallam County Sheriff's Chain Gang has been funded for a number of years for mixed purposes, sometimes weed control. Their efforts were not always coordinated with the Weed Control program, but when provided, their data has been incorporated into the end of year report.
- Reporting: Protocols have changed during the life of the project. From 2002 to 2005 we reported miles of roads surveyed and/or treated and number of weeds manually removed. Acres treated and/or surveyed were estimated, based on the road miles.
- In 2006, when herbicide treatments began, we were asked to simply report acres treated. However, crews or office staff tracked miles surveyed, for some reporting consistency across project years. Most roads are surveyed multiple times during the year, when different plant species are apparent.
- Because 2006 was a transition year crews reported manual treatments both as acres treated and number of weeds removed. County crews have not reported number of weeds removed since 2006; the WCC crew made the change in 2005. The Chain Gang still reports number of weeds removed but in 2011 they also reported acres treated. Chain Gang reporting in 2012 was chaotic and inconsistent. It is possible that they made more complete reports directly to the Forest Service. No weed work by the Forest Service funded Chain Gang was reported to us in 2014.
- Estimating acres treated has always been problematic. In 2007 the OCC crew reported treating 337 acres, which we suspect is an inflated figure, because of confusion about protocol. Still, that figure has been retained in the table as reported.
- Each year, some of our documented work is for re-treatments. When compiling acreage figures for each year we record re-treatments and subtract them from the total, however, the work involved should somehow be acknowledged as it shows a new kind of success; time in the season to do needed follow-up work.. We believe re-treatments are a significant factor in effective control of certain species such as herb Robert.
- Changes in the FACTS sheets over the years have made comparisons of acreage treated from year to year difficult. From 2007 to 2009 we used the "Infested Area Treated" figure from the FACTS sheets to sum up acres treated. In 2010 the forms were changed and "Infested Area Treated" was no longer on the form, so in that year we used the "Application Area" figure from the back of the form.
- In 2011 the form was changed again and "Infested Area Treated" was again used.
- Further, in 2010 "Acres Examined for Weeds" was on the FACTS sheet, so that figure was used for "Acres Surveyed" in the table below, rather than extrapolating it from "Miles Surveyed".
- In 2011 we began to break down acres treated chemically and acres treated manually in the summary table.
- In 2012, there was a notable emphasis on restoration, habitat, or prevention projects that are more logistically complicated, and therefore, more labor intensive and expensive. However, it is heartening to see weed infestations so significantly reduced that re-introduction of native plants has begun in some of the more fragile environments and treatments are implemented only every other year.
- In 2013 there were many changes. Monitoring was added as a weed boards task. We also reseeded some sites. The availability of three PSC enabled additional treatment. Chain Gang focus shifted to other tasks, weed work was unfunded. Forest Service created their own two person invasive crew but there were insufficient resources for some of the larger weed control projects that remain. Coordination which has become increasingly complicated is even more essential than before.
- In 2014 we were short staffed and the Jefferson NWCB's coordinator retired but was not replaced. We focused heavily on infrequent high priority species and herb Robert sites. Our totals are less this year than in years with more staffing. In 2015 we hired approximately one third less staff in response to anticipated funding shortages.

*****The table showing the number of new sites/ total sites recorded in any given year nicely depicts changes in program focus since its inception. As more emphasis is given to treatments, and less to surveys and discoveries, fewer "new" sites are discovered.

APPENDIX D: POTENTIAL SURVEY AND TREATMENT SITES

Crew calls in Gold fire within an hour of ignition by lightning strike

Crew was asked to note whether sites they treated this year, should be a priority for the following season. This information has been included in the 2015 Project Action table in Appendix A and can inform the project list for next year.

Future work should continue to focus on priority species with limited distribution in the forest. Herb Robert, which has become one of the most troublesome species, continues to be a top priority because of its ability to rapidly spread into uninfested areas and degrade wildland habitat. The method of prioritizing projects for the Project List worked well.

The 10,000 Years Institute will be training "weed swat" teams under new grant funding. Further investigation of this potential labor force and potential locations for these teams is warranted. We recommend utilization be reserved for control of large herb Robert or broom infestations, not surveys.

Specific Recommendations:

- Species with limited distribution: Continue focus to eradicate limited species- orange hawkweed, yellow archangel, comfrey, spotted knapweed, sulfur cinquefoil, knotweeds, teasel, and common mullein. There are no large infestations of these species on any FS lands in Clallam and Jefferson. This is working! Keep pressure up for all meadow knapweed sites. Continue to press for Burnt Hill treatment-it is the source. Encourage Clallam County to allow treatment of Palo Alto Rd, which has become another source.
- Herb Robert: Check 3000 and spurs after recent logging activities. We will likely need assistance with long stretches of the 3000 and spurs, 2610 and spurs, and 3040. 3050 and 3006 have not been treated for several years now.
- Everlasting peavine: Set additional goals for everlasting peavine treatments using clopyralid, which has worked very well. 2700 or 2800 are areas that come to mind, there are likely others. Plan for reseeding.
- Specific Roads: Tunnel Creek, which had not been treated for many years is likely a primary source for herb Robert on several adjacent roads that have received treatment, continue to improve, but will be subject to re-infestation. This and associated roads system should be targeted. Additionally, follow-up on Rockybrook and associated spurs would likewise be advised.
- Campgrounds/Admin/Trails: Keep up treatments of campgrounds such as (Dungeness Forks), trailheads and special use facilities such as administrative sites and water diversions. Above washout on Dosewallips River must get follow-up in 2016. Schmidt's Knob has not been visited for several years.
- Botanical Areas/Wetlands: Cranberry Bog-Monitor effectiveness of imazapyr treatment-herb Robert is better. Pat's Prairie, Juniper Meadow, and Sink Lake can be skipped next year. Ask BCH for update of Camp Handy next year; per their report, this site did not need treatment this year. Check status of Caraco Units next year.
- Rock Sources: Keep pits as a priority at least one more year unless crew said it didn't need to be a priority on FACTS sheets. Survey and treat pits not seen in the past two years. Identify old pit sites that are along the way of other scheduled treatments, encourage concurrent treatment. Didn't go to Luella LuLu this year. DNR's Mary Clark is a high priority because of high use and found LAGA this year. POBO resurgence there a bit of a surprise. We will look for 2014 documentation of rock source with POBO at 2900200 (dubbed Mystery Pit).
- Untreated high priority: Treat 1 or 1A projects that were missed in the current season.
- Identify high-priority cross-boundary projects with other public land agencies.
- Surveys: Even though there is never adequate time for needed surveys, the locations provided by FS staff was excellent this year-Continue to identify areas that have not been surveyed or treated for four years-in case there is an opportunity.
- It will be helpful to know which sites the FS based crew treated this year in Jefferson and Clallam Counties, and what they found.

APPENDIX E: COUNTY ACCOMPLISHMENTS-A SNAPSHOT

(This is not a complete list of county work, but gives some highlights and focuses on work and issues of relevance to the Forest Service)

Clallam County covers 1,112,960 acres on the north edge of the Olympic Peninsula, along the Strait of Juan de Fuca. Almost half the acreage of the county (46%) is in federal ownership (National Park or National Forest). The major highway, US 101, runs from east to west through most of the county. Many roads lead from US 101 into the National Forest and many go through the Forest into the popular Olympic National Park. Clallam has a stable, assessment-funded weed program. Much like the process that the Forest Service went through to regain the use of herbicide as a tool to control invasive plant species, so is the CCMWCB seeking permission to add herbicide as an allowed control method on County roadsides because of weed problems that are spreading to adjacent lands.

Clallam County 2015 Snapshot	
Number of Known Noxious Weed Species	68
Number of Regulated Noxious Weed Species	42
Most Common Noxious Weeds	tansy ragwort, poison hemlock, knapweeds
Least Common Noxious Weeds	hoary alyssum, hairy willowherb, purple loosestrife, sulfur cinquefoil, giant hogweed, gorse, perennial sowthistle
Total Number of Sites (Regulated Species Only)	2,044-of sites surveyed, only 4% were not controlled
Number of Landowner Contacts	872
Educational Events	24
Public Contacts (Phone Calls, Walk-Ins, Emails)	1473
Web-Site Hits	1252
Volunteer Weed Events	2-325 hrs
Area of Weeds Controlled by Weed Board Staff	1753 individual plants removed from 172 properties

Jefferson County is actually larger than Clallam County, covering 1,397,760 acres on the eastern edge of the Olympic Peninsula. However, more than half of Jefferson County is in federal ownership and the county is split into two sections with federal land in the center. The western portion is sparsely populated and is 120 miles from Port Townsend, the county seat. Consequently, Jefferson County Weed Board operates almost exclusively in the eastern portion of the county, comprising roughly 300,000 acres.

For the first time, a full time coordinator was hired in June this year. It will take some time for the new coordinator to get up to speed with his new position. Small amounts of spraying to treat several high priority species took place in 2010 through 2015. The JCNWCB successfully implemented a weed assessment to fully fund their program in 2016, and thus better protect Jefferson County resources in the future.

Jefferson County 2015 Snapshot	
Number of Known Noxious Weed Species	47
Number of Regulated Noxious Weed Species	28
Most Common Noxious Weeds	tansy ragwort, poison hemlock, wild chervil, knapweeds
Least Common Noxious Weeds	purple loosestrife, sulfur cinquefoil, milk thistle, giant hogweed, gorse, phragmites, hawkweeds
Total Number of Sites (Regulated Species Only)	620 in 2014
Number of Landowner Contacts (est.)	215
Educational Events	8 presentations, 8 press releases
Weed Pulls	none

County Cooperation: The two Counties have worked together closely for years. In addition to receiving Title II funding, they have for several years jointly received funding from Washington State Department of Agriculture for knotweed control and have worked on all the major waterways in both counties. This program has involved cooperation with six Native American Tribes, Olympic National Park, 4 state agencies (WSDOT, WDNR, WDFW, and WA State Parks) 9 local governments and hundreds of private landowners.

A Puget Sound Corps provided 10 days of assistance on various projects scattered across both counties. In general, they supported projects begun with their assistance last year.

Additionally, Clallam County is the de facto leader of the Olympic Knotweed Working Group, a loose consortium of government entities, tribes, and non-profits that meets to exchange information and strategize effective knotweed control on the Peninsula. As part of Cooperative Weed management Area, we are increasingly focused on an “all invasives” approach.

Both Counties partner with many other agencies and volunteer groups, including the Back Country Horseman, Master Gardeners, Stream Keepers, Audubon Society, North Olympic Land Trust, Jefferson Land Trust and Port Townsend School District.

APPENDIX F: CONTROL RECOMMENDATIONS BY WEED SPECIES

Herb Robert

Specific treatment recommendations for each species encountered are given in the table below. General recommendations based on plant lifecycle are listed below.

- Annuals like herb Robert, especially at campgrounds, should be treated as early in the season as possible. With herb Robert in particular it will almost certainly be necessary to repeat treatments within the season, though if seed set is prevented each time, it is hoped that the size of the infestation can be greatly reduced with each treatment. Trials utilizing acetic acid, limonene and clove oil, all contact herbicides, are underway to determine whether these products can be safely used while effectively controlling herb Robert with minimal damage to nearby native vegetation. None of these three contact herbicides are currently allowed for use in the Forest.

- Early blooming perennials, such as orange and yellow hawkweed should be treated as early as possible.

- Biennials like tansy ragwort are often difficult to treat effectively with either chemical or manual treatment alone; once plants have bolted it may be most effective to pull and deadhead flowering stalks then spray first year rosettes.

- Scotch broom and other woody shrubs can be effectively pulled early in the season before seed set and while the ground is damp; herbicide treatments can be made early, but are still effective later in the summer.

- Later blooming perennials like reed canarygrass, Canada thistle, everlasting peavine, knotweeds, knapweeds, common tansy and common toadflax may be effectively treated from midsummer until fall, depending on the species and the location (altitude, aspect, etc).

Plant Code	Common Name	*Botanical Name*	Control Recommendation
AEPO	bishop's weed	*Aegopodium podgraria*	Foliar application of imazapyr, or triclopyr
ANSY	wild chervil	*Anthriscus sylvestris*	Manual removal; spot herbicide application
ARMI2	common burdock	*Arctium minus*	Where minimal occurrence, manual removal; spot herbicide application to rosettes by early spring; or to second year growth, before budding
BUDA	butterfly bush	*Buddleja davidii*	Manual removal small plants, or cut-stump/foliar treat with triclopyr, or glyphosate,
CESTM	spotted knapweed	*Centaurea stoebe*	Manual removal very small sites; spot application with selective herbicide - clopyralid preferred
CASE13	Hedge bindweed	*Calystigia sepium*	Herbicide application combined with manual removal. Very difficult to eradicate.
CEDE5	meadow knapweed	*Centaurea jacea x nigra*	Foliar herbicide application with selective herbicide, late season - clopyralid preferred
CEDI3	diffuse knapweed	*Centaurea diffusa*	Manual removal for very small sites; foliar herbicide application - clopyralid preferred
CIAR4	Canada thistle	*Cirsium arvense*	Manual removal has limited effectiveness, for only very early infestations; spot herbicide application with glyphosate at bud to full bloom; fall or foliar application of a selective herbicide throughout the summer, fall. Clopyralid has worked well and will be emphasized in future treatments.
CIVU	bull thistle	*Cirsium vulgare*	Where minimal occurrence, manual removal; spot herbicide application to rosettes by early spring or to second year growth, before budding. Remove seeded heads.
COTON	rockspray cotoneaster	*Cotoneaster horizontalis*	Manual removal; herbicide treatment only if size of infestation increases
CYSC4	Scotch broom	*Cytisus scoparius*	Manual removal for small infestations; cut stump treatments preferred for very large infestations, foliar herbicide applications possible, newer herbicides such as aminopyralid would be useful.
DACA6	wild carrot	*Daucus carota*	Manual removal; spot herbicide application triclopyr

Plant Code	Common Name	*Botanical Name*	Control Recommendation
DIFU2	Fuller's teasel	*Dipsacum fullonum*	Manual removal before full bloom (after full bloom, flower heads need to be removed and disposed of); selective herbicide application in first year or pre-bloom in 2nd year.
GERO	herb Robert	*Geranium robertianum*	Manual removal for small infestations; spot herbicide application where feasible; multiple treatments per season preferred, to prevent multi-generational seed production each season. Prevention measures a must. Imazapyr may be considered-where off-target loss is more tolerated, such as roadside- for fall treatments after rain has induced seed germination. Herbicide effects on late stages of plant lifecycle may be too slow to stop seed production.
HEHE	English ivy	*Hedera helix*	Manual removal; cut stump or foliar herbicide application. Higher end surfactant rates may be needed.
HIAU	orange hawkweed	*Hieracium aurantiacum*	Spot spray with selective herbicide in late spring or summer; - clopyralid preferred - possible manual removal for very small infestation.
HYPE	St. Johnswort	*Hypericum perforatum*	Pervasive. Preventative control should be incorporated into restoration and maintenance projects. Possible candidate for biocontrol releases where infestations are heavy. Herbicide control options are available should this species otherwise become a resource management issue.
ILAQ80	English holly	*Ilex aquifolium*	Manual removal; cut stump or foliar herbicide treatment. May be best treated with imazapyr.
IRPS	yellow flag Iris	*Iris pseudacorus*	Manual removal for small infestations, foliar herbicide, imazapyr may be preferred
LAGA2	yellow archangel	*Lamiastrum galeobdolon*	Foliar herbicide application –triclopyr, glyphosate, or a combination
LALA4	everlasting peavine	*Lathyrus latifolius*	Foliar herbicide application - clopyralid preferred
LEVU	oxeye daisy	*Leucanthemum vulgare*	Pervasive. Preventative control should be incorporated into restoration and maintenance projects. Herbicide control options are available should this species otherwise become a resource management issue.
LIVU2	common toadflax	*Linaria vulgaris*	Spot herbicide application
LYSA2	purple loosestrife	*Lythrum salicaria*	There is only one known site: manual removal should be possible, however herbicide application is available (potential aquatic application)
PHAR3	reed canary grass, ribbon grass	*Phalaris arundinacea*	Glyphosate or imazapyr in mid-June and mid-Sept.
POBO10 POSA or POCU	knotweed species	*Polygonum spp.*	Injection with glyphosate; and/or foliar application of glyphosate or imazapyr
PORE	sulfur cinquefoil	*Potentilla recta*	Selective herbicides preferred. Will need several years of re-treatment Small, but long-time plants may need to be dug; plant surface may be insufficient to fully control large root system.
RUAR9	Himalayan blackberry	*Rubus armeniacus*	Cut stump with glyphosate or triclopyr or foliar application as appropriate to site. Triclopyr preferred
RULA	evergreen blackberry	*Rubus laciniatus*	Cut stump or foliar herbicide application - triclopyr preferred
SEJA	tansy ragwort	*Senecio jacobaea*	Will require systematic removal from roadsides and follow-up; manual removal before full bloom (after full bloom, flower heads need to be removed and disposed of); selective herbicide application in first year or pre-bloom in 2nd year.
SYOF	common comfrey	*Symphaticum officinale*	Minimal occurrence, but expanding; spot herbicide application.
TAVU	common tansy	*Tanacetum vulgare*	Spot herbicide application
VIMA VIMI12	bigleaf periwinkle common periwinkle	*Vinca major* *Vinca minor*	Thorough spot herbicide application

APPENDIX G: WEED SPECIES REPORTED 2002-2015 ON FOREST SERVICE LAND IN CLALLAM OR JEFFERSON COUNTIES

(Other counties may have reported other species)
List sorted alphabetically by botanical name.

Note: No new species were found in 2015.
Plant Codes come from the USDA Natural Resources Conservation Service PLANTS database.

Common Name	*Botanical Name*	Plant Code
bishop's weed	*Aegopodium podgraria*	AEPO
common burdock	*Arctium minus*	ARMI2
cheatgrass	*Bromus tectorum*	BRTE
butterfly bush	*Buddleja davidii*	BUDA
hedge bindweed	*Calystegia sepium*	CASE13
meadow knapweed	*Centaurea debeauxii*	CEDE5
diffuse knapweed	*Centaurea diffusa*	CEDI
spotted knapweed	*Centaurea stoebessp. micranthosi*	CESTM
Canada thistle	*Cirsium arvense*	CIAR4
bull thistle	*Cirsium vulgare*	CIVU
rockspray cotoneaster	*Cotoneaster*	COTON
Scotch broom	*Cytisus scoparius*	CYSC4
wild carrot	*Daucus carota*	DACA6
Fuller's teasel	*Disacus fullonum*	DIFU
herb Robert	*Geranium robertianum*	GERO
English ivy	*Hedera helix*	HEHE
orange hawkweed	*Hieracium aurantiacum*	HIAU
yellow hawkweed	*Hieracium caespitosum*	HICA10
European hawkweed	*Hieracium sabaudum*	HISA4
St. Johnswort	*Hypericum perforatum*	HYPE
English holly	*Ilex aquifolium*	ILAQ80
yellow flag Iris	*Iris pseudacorus*	IRPS
yellow archangel	*Lamiastrum galeobdolon*	LAGA
everlasting peavine	*Lathrus latifolius*	LALA4
oxeye daisy	*Leucanthemum vulgare*	LEVU
common toadflax	*Linaria vulgaris*	LIVU2
purple loosestrife	*Lythrum salicaria*	LYSA2
reed canary grass	*Phalaris arundinacea*	PHAR3
ribbon grass*	*Phalaris arundinacea,* variegated	PHAR3
Japanese knotweed	*Polygonum cuspidatum*	POCU6
giant knotweed	*Polygonum sachalinense*	POSA4
Bohemian knotweed	*Polygonum x bohemicum*	POBO10
sulfur cinquefoil	*Potentilla recta*	PORE
English Laurel	*Phalaris arundinacea*	PRLA
Himalayan blackberry	*Rubus armeniacus*	RUAR9
evergreen blackberry	*Rubus laciniatus*	RULA
tansy ragwort	*Senecio jacobaea*	SEJA
comfrey	*Symphytum officinale*	SYOF
common tansy	*Tanacetum vulgare*	TAVU
common mullein	*Verbascum thapsus*	VETH
periwinkle	*Vinca minor*	VIMI

First sighting of Common mullein noted on 2700-040 in 2014

High-Risk Species in Clallam and Jefferson Counties, Not Yet Detected on (Clallam/Jefferson) FS Lands

wild chervil	*Anthriscus sylvestris*
hoary alyssum	*Berteroa incana*
poison hemlock	*Conium maculatum*
spurge laurel	*Daphne laureola*
hairy willowherb	*Epilobium hirsutum*
common hawkweed	*Hieracium lachenalii*
common reed	*Phragmites australis*

APPENDIX H: 2015 STATE WEED LIST

Class A Weeds: Non-native species whose distribution in Washington is still limited. Preventing new infestations and eradicating existing infestations are the highest priority. **Eradication of all Class A plants is required by law.**

bean-caper, Syrian	*Zygophyllum fabago*
blueweed, Texas	*Helianthus ciliaris*
broom, French	*Genista monspessulana*
broom, Spanish	*Spartium junceum*
bulrush, ricefield	*Schoenoplectus mucronatus*
clary, meadow	*Salvia pratensis*
clematis, Oriental	*Clematis orientalis*
cordgrass, common	*Spartina anglica*
cordgrass, dense flower	*Spartina densiflora*
cordgrass, salt meadow	*Spartina patens*
cordgrass, smooth	*Spartina alterniflora*
crupina, common	*Crupina vulgaris*
false brome	*Brachypodium sylvaticum*
flowering rush	*Butomus umbellatus*
flax, spurge	*Thymelaea passerina*
four o'clock, wild	*Mirabilis nyctaginea*
goatsrue	*Galega officinalis*
hogweed, giant	*Heracleum mantegazzianum*
hydrilla	*Hydrilla verticillata*
johnsongrass	*Sorghum halepense*
knapweed, bighead	*Centaurea macrocephala*
knapweed, Vochin	*Centaurea nigrescens*
kudzu	*Pueraria montana* var. *lobata*
milfoil, variable-leaf	*Myriophyllum heterophyllum*
mustard, garlic	*Alliaria petiolata*
nightshade, silverleaf	*Solanum elaeagnifolium*
primrose-willow, floating	*Ludwigia peploides*
ravenna grass*	*Saccharum ravennae*
sage, clary	*Salvia sclarea*
sage, Mediterranean	*Salvia aethiopis*
spurge, eggleaf	*Euphorbia oblongata*
sweetgrass, reed	*Glyceria maxima*
starthistle, purple	*Centaurea calcitrapa*
thistle, Italian	*Carduus pycnocephalus*
thistle, milk	*Silybum marianum*
thistle, slenderflower	*Carduus tenuiflorus*
woad, dyers	*Isatis tinctoria*

Class B Weeds: Non-native species presently limited to portions of the State. Species are **designated** for control in regions where they are not yet widespread. Preventing new infestations in these areas is mandated. In regions where a Class B species is already abundant, control is decided at the local level, with containment as the primary goal. Please contact your County Noxious Weed Control Coordinator to learn which species are designated in your area.

blueweed	*Echium vulgare*
Brazilian elodea	*Egeria densa*
bugloss, annual	*Anchusa arvensis*
bugloss, common	*Anchusa officinalis*
butterfly bush	*Buddleja davidii*
camelthorn	*Alhagi maurorum*
celandine, lesser	*Ficaria verna*
common fennel (except bulbing fennel	*Foeniculum vulgare (except F. vulgare var. azoricum)*
common reed (nonnative genotypes)	*Phragmites australis*
Dalmatian toadflax	*Linaria dalmatica* ssp. *dalmatica*
Eurasian watermilfoil	*Myriophyllum spicatum*
fanwort	*Cabomba caroliniana*
gorse	*Ulex europaeus*
grass-leaved arrowhead	*Sagittaria graminea*
hairy willow-herb	*Epilobium hirsutum*
hawkweed, all nonnative species and hybrids of the wall and meadow subgenera	*Hieracium subgenus Hieracium Hieracium subgenus Pilosella*
hawkweed, orange	*Hieracium aurantiacum*
hawkweed, oxtongue	*Picris hieracioides*
herb Robert	*Geranium robertianum*
hoary alyssum	*Berteroa incana*
houndstongue	*Cynoglossum officinale*
indigobush	*Amorpha fruticosa*
knapweed, black	*Centaurea nigra*
knapweed, brown	*Centaurea jacea*
knapweed, diffuse	*Centaurea diffusa*
knapweed, meadow	*Centaurea x moncktonii*
knapweed, Russian	*Acroptilon repens*
knapweed, spotted	*Centaurea stoebe*
knotweed, Bohemian	*Polygonum x bohemicum*
knotweed, giant	*Polygonum sachalinense*

Class B Weeds - continued	
knotweed, Himalayan	*Polygonum polystachyum*
knotweed, Japanese	*Polygonum cuspidatum*
kochia	*Kochia scoparia*
loosestrife, garden	*Lysimachia vulgaris*
loosestrife, purple	*Lythrum salicaria*
loosestrife, wand	*Lythrum virgatum*
parrotfeather	*Myriophyllum aquaticum*
perennial pepperweed	*Lepidium latifolium*
poison hemlock	*Conium maculatum*
policeman's helmet	*Impatiens glandulifera*
puncturevine	*Tribulus terrestris*
rush skeletonweed	*Chondrilla juncea*
saltcedar	*Tamarix ramosissima*
Scotch broom	*Cytisus scoparius*
shiny geranium	*Geranium lucidum*
spurge laurel	*Daphne laureola*
spurge, leafy	*Euphorbia esula*
spurge, myrtle	*Euphorbia myrsinites*
sulfur cinquefoil	*Potentilla recta*
tansy ragwort	*Senecio jacobaea*
thistle, musk	*Carduus nutans*
thistle, plumeless	*Carduus acanthoides*
thistle, Scotch	*Onopordum acanthium*
velvetleaf	*Abutilon theophrasti*
water primrose	*Ludwigia hexapetala*
white bryony	*Bryonia alba*
wild chervil	*Anthriscus sylvestris*
yellow archangel	*Lamiastrum galeobdolon*
yellow floating heart	*Nymphoides peltata*
yellow nutsedge	*Cyperus esculentus*
yellow starthistle	*Centaurea solstitialis*

Class C Weeds: Noxious weeds which are already widespread in WA or are of special interest to the state's agricultural industry. The Class C status allows counties to enforce control if locally desired. Other counties may choose to provide education, technical consultation or other assistance.

absinth wormwood	*Artemisia absinthium*
babysbreath	*Gypsophila paniculata*
barberry, common	*Berberis vulgaris*
bindweed, field	*Convolvulus arvensis*
blackberry, evergreen	*Rubus laciniatus*
blackberry, Himalayan	*Rubus armeniacus*
blackgrass	*Alopecurus myosuroides*
buffalobur	*Solanum rostratum*
catsear, common	*Hypochaeris radicata*
cereal rye	*Secale cereale*
cockle, white	*Silene latifolia* ssp. *alba*
cocklebur, spiny	*Xanthium spinosum*
common tansy	*Tanacetum vulgaris*
curly-leaf pondweed	*Potamogeton crispus*
eel grass, Japanese	*Zostera japonica*
fieldcress, Austrian	*Rorippa austriaca*
goatgrass, jointed	*Aegilops cylindrica*
groundsel, common	*Senecio vulgaris*
henbane, black	*Hyocyamus niger*
hoary cress	*Lepidium draba*
Italian arum	*Arum italicum*
ivy, English - four cultivars only	*Hedera helix* 'Baltica', 'Pittsburgh', and 'Star'; *H. hibernica* 'Hibernica'
jubata grass*	*Cortaderia jubata*
lawnweed	*Soliva sessilis*
lepyrodiclis	*Lepyrodiclis holosteoides*
nonnative cattail species and hybrids	*Typha* spp
old man's beard	*Clematis vitalba*
oxeye daisy	*Leucanthemum vulgare*
pampas grass*	*Cortaderia sellooana*
reed canarygrass	*Phalaris arundinacea*
Russian olive	*Elaeagnus angustifolia*
sandbur, longspine	*Cenchrus longispinus*
scentless mayweed	*Matricaria perforata*
smoothseed alfalfa dodder	*Cuscuta approximata*
sowthistle, perennial	*Sonchus arvensis* ssp. *arvensis*
spikeweed	*Hemizonia pungens*
St. Johnswort, common	*Hypericum perforatum*
Class C Weeds continued	
swainsonpea	*Sphaerophysa salsula*
teasel, common	*Dipsacus fullonum*
thistle, bull	*Cirsium vulgare*
thistle, Canada	*Cirsium arvense*
toadflax, yellow	*Linaria vulgaris*
tree-of-heaven	*Ailanthus altissima*
water lily, fragrant	*Nymphaea odorata*
whitetop, hairy	*Lepidium appelianum*
wild carrot	*Daucus carota*
yellow flag iris	*Iris pseudacorus*

*new

To protect the State's resources and economy, the Washington State Noxious Weed Control Board adopts a State Noxious Weed List each year (WAC 16-750). This list classifies weeds into three major classes – A, B, and C – based on the stage of invasion of each species and the seriousness of the threat they pose to Washington State. This classification system:

- Prevents small infestations from expanding by eradicating them when they are first detected
- Restrict s already established weed populations to regions of the state where they occur and prevent their movement to un-infested areas
- Provides flexibility and local control for weeds that are already widespread.

To learn more about noxious weeds and noxious weed control in Washington State, please contact:

Washington State Noxious Weed Control Board
P.O. Box 42560
Olympia, WA 98504-2560
360-902-2053
Email: noxiousweeds@agr.wa.gov
Website: http://www.nwcb.wa.gov
or

2015 Washington State Noxious Weed List

Ravenna grass
(*Saccharum ravennae*)
a new 2015 Class A noxious weed

Please help protect Washington's economy and environment from noxious weeds!

APPENDIX I: SAMPLES OF HERBICIDE NOTIFICATION—LEGAL AD AND ON-SITE POSTING

A legal notice preceding herbicide application on the Olympic National Forest was published in the Peninsula Daily News (PDN), which is distributed throughout both Clallam and Jefferson Counties. The text of the legal notice in the PDN read as follows:

LEGAL NOTICE

The Pacific and Hood Canal Ranger Districts, Olympic National Forest, may be applying the herbicides glyphosate, clopyralid, triclopyr or imazapyr to noxious weeds or other invasive plant species at the following Forest Service sites in Jefferson and Clallam Counties May 1 – November 1, 2015. Applications will be conducted as planned in the Final EIS-Olympic National Forest Site Specific Invasive Plant Treatment Project, which was finalized in 2008. Notices indicating that formulations containing glyphosate, clopyralid, triclopyr or imazapyr will be applied will be posted at entrances to the target road systems and/or individuals sites. For questions about applications or to receive a complete list of individual sites contact Cathy Lucero, Clallam County Noxious Weed Control Board, at 360-417-2442, or Will Arnesen, Invasive Plant Program Coordinator, at 360-956-2302.

Big Creek/Upper Quinault River Watershed, 2190200 Rd; **Bockman Creek Watershed,** 2902,2903 Rds; Bockman pit; **Canyon Creek /Pats Creek Watershed**, 2800,2870,2875,2877,2878 and 2880 Rds and associated spurs; Cranberry Bog, Juniper Meadow, Schmits Knob, Nob Hill Pit, Slab Camp/Deer Ridge TH and Caraco Cat units; Upper and Lower Caraco, Canyon, and Ned Hill Pits; **Deep Creek Watershed**, including 3000,3067 Rds and associated spurs; **East Twin River Watershed**, including 3040,3068 Rds and associated spurs; **Fulton Creek/Waketickeh Creek Watershed**, including 2503,2510 Rds and associated spurs; **Headwaters Sol Duc River Watershed**, including 2918,2920 Rds; **Jimmy-come-lately Creek Watershed**, including 28, 2840,2845,2850 and 2855 Rds and associated spurs; Louella Work Center; Louella, Louella LuLu, Coho, Raccoon, and Wolf 2 Pits; **Little Quilcene River Watershed**, including 28, and associated spurs; Bon Jon Quarry; **Lower Big Quilcene River Watershed**, including the 2650,27, 2620,2730 and 2740 Rds and associated spurs; PT Muni WS caretakers cabin, Lower Big Quilcene Trail, Rainbow and Falls View CGs and the Quilcene office area; **Lower Bogachiel River Watershed**, including 2932 Rd; **Lower Dosewallips River Watershed**, including 25,2610,2620 Rds and associated spurs; Elkhorn CG and Lower Dosewallips riparian area; **Lower Duckabush River Watershed**, including 2510 and 2530 Rds and associated spurs; Big Hump Fire Trail corridor; Collins CG; **Lower Gray Wolf River Watershed**, including 2870,2875, and 2880 Rds and associated spurs; Armpit and Slab Camp Pits; Dungeness Forks CG; **Matheny Creek Watershed**, including 21,2140,2160,2170,2180,2190 Rds and associated spurs; Arlo, Calvin, Cloud, Frog, Hobbs, Jupiter, Loki, Mercury, Newt, and Toad Pits; Matheny Beaver Pond; **McDonald Creek/Siebert Creek Watershed,** including 2877 Rd and associated spurs; Pat's Prairie; **Middle Dungeness River Watershed**, including 28,2820,2830,2860 and 2870 Rds and associated spurs; Lost Pit; East Crossing CG; Gold Creek and Sleepy Hollow trails; **Middle Queets River Watershed**, including 2180 Rd and associated spurs; Park pit; **Middle Quinault River Watershed**, including 2140 and 2190 Rds and associated spurs; **Middle Sol Duc River Watershed**, including 2071,30,3040,3100 Rds and associated spurs ; Snider Work Center; **North Fork Calawah Watershed**, including 29,2922 Rds and associated spurs; Calawah and Grindstone Pits; Bonidu Meadow; **Pysht River Watershed**, including 30, 31, and 3116 Rds and associated spurs; **Salmon River Watershed**, including 2120 and 2140 Rds and associated spurs; North Salmon and Salamander Pits; **Sam's River Watershed**, including 2170 and 2180 Rds and associated spurs; Neptune Pit; **Snow Creek/Salmon River Watershed,** including 2840,2845,2850,2852 Rds and associated spurs; **South Fork Calawah Watershed**, including the 29, 2912,2922,2923,2932 Rds and associated spurs; Elk Pit; **Spencer Creek / Marple Creek Watershed**, including 2610 Rd and associated spurs; Seal Rock CG; **Upper Big Quilcene River Watershed**, including 2650,2740,2760 Rds and associated spurs; Lower Big Quilcene Trail; and Sink Lake; **Upper Dungeness River Watershed**, including 2870 Rd and associated spurs; Camp Handy, Dungeness and the Heather Basin Trails; **Upper Sol Duc River Watershed**, including 29,2918,2929,2931,2978,3040 and 3071 Rd and associated spurs; Klahowya CG; Bonidu, Littleton Horse Camp, and Tom Creek Pits; and the Kloshe Namich Loop Trail; **West Twin River Watershed,** including 3000 and 3040 Rds and associated spurs.

Onsite Posting Sample: Information about date of application, locations, and targeted weed species are generally filled out onsite.

NOTICE

The herbicide(s) glyphosate, triclopyr, imazapyr, and/or clopyralid may be applied to the following roads and surrounding area any time between

_____, 2015 to control weeds, which threaten native vegetation and habitat in this area:

Specific areas to be targeted include roadsides, vegetated openings and rock pits.

Targeted Weed Species include, but are not limited to:

NO USE RESTRICTIONS ARE IN PLACE

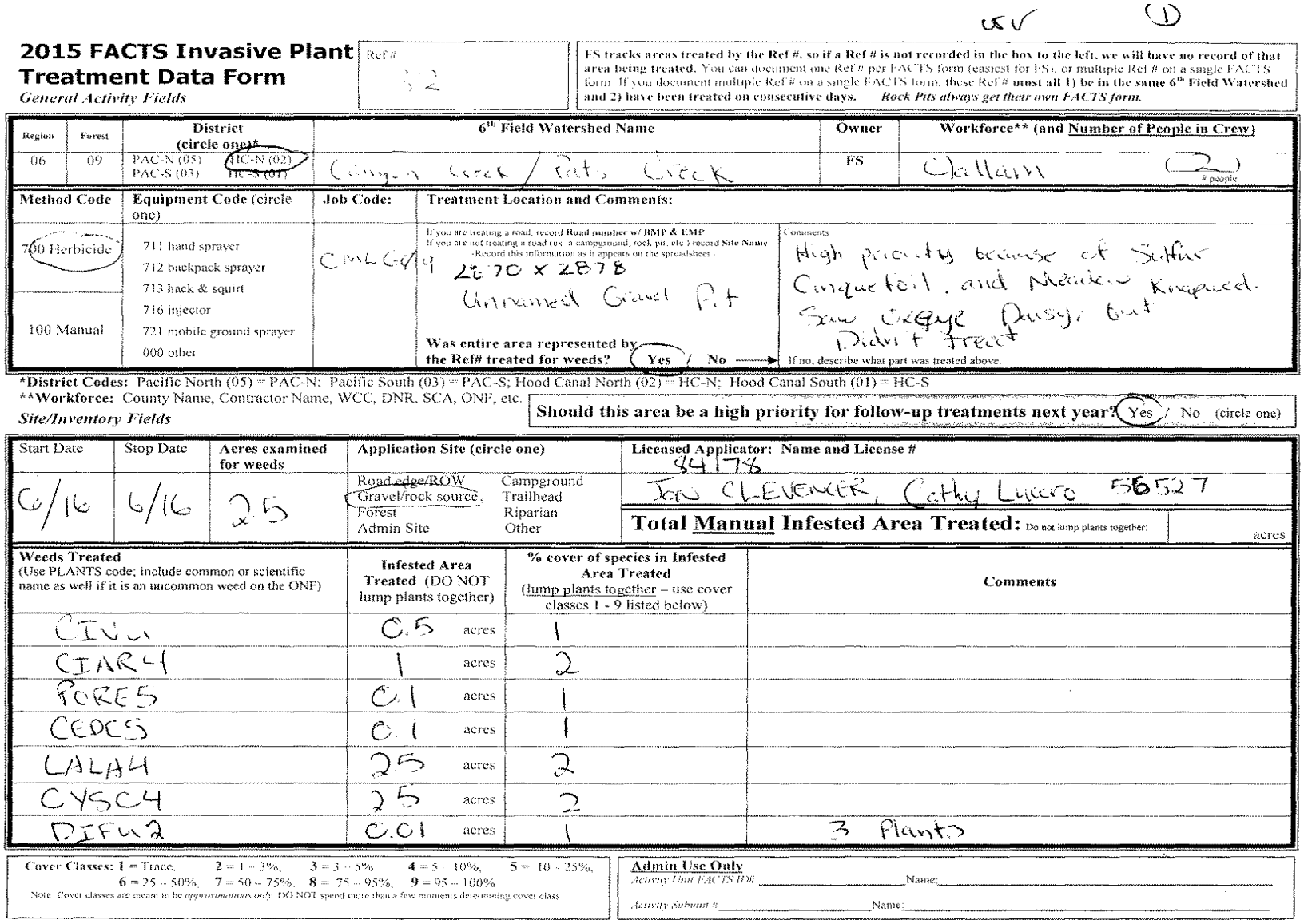
Avoid contact with treated vegetation until after it has dried; it will take approximately 1 hour to dry after application.

FOR MORE INFORMATION CONTACT:

Cheryl Bartlett
Forest Botanist and Invasive Plant Program Coordinator
Olympic National Forest
1835 Black Lake Blvd., SW Suite A
Olympia, WA 98512
cbartlett02@fs.fed.us
360-956-2283

APPENDIX J: PROJECT FORMS

- FACTS Manual/Herbicide Treatment Data Form-front side



2015 FACTS Invasive Plant Treatment Data Form

General Activity Fields

Ref # 52

FS tracks areas treated by the Ref #, so if a Ref # is not recorded in the box to the left, we will have no record of that area being treated. You can document one Ref # per FACTS form (easiest for FS), or multiple Ref # on a single FACTS form. If you document multiple Ref # on a single FACTS form, these Ref # must all 1) be in the same 6th Field Watershed and 2) have been treated on consecutive days. *Rock Pits always get their own FACTS form.*

Region	Forest	District (circle one)*	6th Field Watershed Name	Owner	Workforce** (and Number of People in Crew)
06	09	PAC-N (05) (HC-N (02)) PAC-S (03) HC-S (01)	Canyon Creek / Rat's Creek	FS	Olallam (2 # people)

Method Code	Equipment Code (circle one)	Job Code:	Treatment Location and Comments:
700 Herbicide	711 hand sprayer 712 backpack sprayer 713 hack & squirt 716 injector	CMLC-09	If you are treating a road, record Road number w/ BMP & EMP. If you are not treating a road (ex. a campground, rock pit, etc.) record Site Name. Record this information as it appears on the spreadsheet. 2670 x 2878 Unnamed Gravel Pit
100 Manual	721 mobile ground sprayer 000 other		Was entire area represented by the Ref# treated for weeds? (Yes) / No → If no, describe what part was treated above.

Comments: High priority because of Sulfur Cinquefoil, and Meadow Knapweed. Saw Orange Daisy, but Didn't treat

*District Codes: Pacific North (05) = PAC-N; Pacific South (03) = PAC-S; Hood Canal North (02) = HC-N; Hood Canal South (01) = HC-S

**Workforce: County Name, Contractor Name, WCC, DNR, SCA, ONF, etc.

Should this area be a high priority for follow-up treatments next year? (Yes) / No (circle one)

Site/Inventory Fields

Start Date	Stop Date	Acres examined for weeds	Application Site (circle one)		Licensed Applicator: Name and License #
6/16	6/16	25	Road edge/ROW (Gravel/rock source) Forest Admin Site	Campground Trailhead Riparian Other	84178 Jon CLEVENGER, Cathy Lucero 56527

Total Manual Infested Area Treated: Do not lump plants together: ____ acres

Weeds Treated (Use PLANTS code; include common or scientific name as well if it is an uncommon weed on the ONF)	Infested Area Treated (DO NOT lump plants together)	% cover of species in Infested Area Treated (lump plants together – use cover classes 1 - 9 listed below)	Comments
CIVU	0.5 acres	1	
CIAR4	1 acres	2	
PORE5	0.1 acres	1	
CEDE3	0.1 acres	1	
LALA4	25 acres	2	
CYSC4	25 acres	2	
DIFU2	0.01 acres	1	3 plants

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*. DO NOT spend more than a few moments determining cover class.

Admin Use Only

Activity Unit FACTS ID#: ____ Name: ____

Activity Submit #: ____ Name: ____

- FACTS Manual/Herbicide Treatment Data Form-back side

Daily Log Day 1

Application Date	Time Start	Time Stop	Temp (F)	Wind Speed (MPH)	Wind Direction	Cloud Cover	Comments:
6/16	12:30	1:30 pm	71°	<2	W	None	

Total Volume of Mix Applied	UOM	Mix (oz herbicide /1 gallon water)	Dilutant	Applicators Names
10.5	Gallons	oz/ gallon	Water	Cathy Lucero, Jon Clevenger

Herbicide Product Name	Amount of this herbicide product that was applied	Percent Solution	Adjuvant Product Name	Amount of this adjuvant that was applied	Percent Solution	Total Application Area (Acres):
Element 3A	14 oz	1 %	Competitor	7 oz	.5 %	2.5
Transline	7 oz	.5 %	Blazon	3.5 oz	.25 %	Acres Treated within 150' of Water: Ø
	oz	%		oz	%	Bankful Acres Treated (for NPDES): Ø

Daily Log Day 2 For use when more than one day is necessary to treat the infestation.

Application Date	Time Start	Time Stop	Temp (F)	Wind Speed (MPH)	Wind Direction	Cloud Cover	Comments:

Total Volume of Mix Applied	UOM	Mix (oz herbicide /1 gallon water)	Dilutant	Applicators Names
	Gallons	oz/ gallon	Water	

Herbicide Product Name	Amount of this herbicide product that was applied	Percent Solution	Adjuvant Product Name	Amount of this adjuvant that was applied	Percent Solution	Total Application Area (Acres):
	oz	%		oz	%	
	oz	%		oz	%	Acres Treated within 150' of Water:
	oz	%		oz	%	Bankful Acres Treated (for NPDES):

(From front page) Ref #:_____ Start Date:_____

Notes:

APPENDIX J: PROJECT FORMS

- Rock Pit Inspection Form

Invasive Plant Inventory for Rock Sources, Olympic National Forest

District or Forest Weed Specialist compliance statement and signature:

This designation is valid for two years from the inspection date listed below.

CHECK ONE:

☐ **Option A. Rock source exceeds requirements:** ***I have determined that this rock source to be completely free of weeds.*** Weeds, even those listed as tolerated species, are not present in, and are not associated with, this rock source.

☐ **Option B. Rock source meets requirements:** ***I have determined that this rock source to be acceptable for use, with acceptable levels of contamination.*** *It is very unlikely that distribution of materials from this rock source would contribute to the spread of noxious weeds.*

- Any species listed as priority 1 by Olympic NF, OR those listed as Class A, B or selected weeds on State and County noxious weed lists, OR species of particular concern are absent in or around rock source.
- Species listed as priority 2 by Olympic NF (but not on State or County list specified above) may be present in small, isolated patches within or near the rock source. Typically, less than 10% of the pit either has weeds growing on it or potentially could contain weed seed or other propagules, and these areas are easily isolated from rock source materials.
- Species listed as tolerated are present to various degrees within and around rock source.

☒ **Option C. Rock source meets minimum requirements:** ***I have determined that this rock source acceptable for use, but only if no other source is available.*** *Distribution of materials from this rock source may contribute to the spread of noxious weeds if precautionary measures are not followed.* ***These measures are described in the comments box below.***

- Any species listed as priority 1* by Olympic NF, OR any species listed as Class A, B* or selected weeds* on State and County noxious weed lists, OR species of particular concern are absent in or around rock source.
- Species listed as priority 2 by Olympic NF (but not on State or County list specified above) are present in patches, but some portions of the rock source are relatively free of weeds, are most likely are not contaminated with a significant amount of propagules (seeds, roots, etc.) from these species, and may be an acceptable rock source for FS lands. Typically, between 10 – 50% of the pit will have priority 2 weeds growing on it and/or potentially could contain seed or other propagules from these species, and these areas are easily isolated from rock source materials.

*In limited circumstances, as determined by the inspector, this box may be checked when species listed as priority 1 by Olympic NF, OR class B or selected weeds on State and County noxious weed lists are present in very small, easily isolated patches.

☐ **Option D. Rock source fails to meet requirements.** ***I have determined that this source is unsuitable for use at this time.*** *Distribution of materials from this rock source would likely contribute to the spread of noxious weeds.* Weed species listed as priority 1 by Olympic NF, OR those listed as Class A, B or selected weeds on State and County noxious weed lists, OR species of particular concern are present in or around this rock source, OR weed species listed as priority 2 by Olympic NF are present to the extent that plants and/or propagules (seeds, roots, etc.) are present in significant portions of the rock source and cannot be isolated by precautionary measures.

Signature: [signature] Date: 9/10/15

Name of Rock Source: Bonidu Pit

Narrative of Pit Location (include, at minimum, road number and milepost):
end of 2900-000

Ref # (from project spreadsheet): 165

Coordinates of Location N: ______ **E:** ______ *UTM NAD 83 is preferred

Projection (circle one): (UTM NAD 83) (UTM NAD 27) (NAD 83 Albers) (Lat/Long) (Decimal Degrees) (Other):

Name and Title of Inspector: Chandler Johnson, CCNWCB assistant **Date of Inspection:** 9/10/15

Comments: Include mitigation measures that need to be implemented to minimize the chance of spreading weeds. This should include a description of what parts of pit are usable, and what parts must be avoided. This should also be shown in the sketch of the pit on last page.

Gero is looking better than last year, but is still present on the South side of the pit, and is growing up onto the gravel piles and out into the forest. There is a little bit of thistle on the South west corner, and near the entrance. The current gravel piles on the South side of the pit probably should not be used, ~~and~~ but the north and east sides of the pit should be fine.

Name of Rock Source: Banidu Pit Date inspected: 9/10/15

Species present:

Species Code	Common Name	Infested Area (acres)	Cover Class	Comments
GERO	Herb Robert	0.5	3	extends to Salmonberries in forest
CYSC	Scotch Broom	025	1	
CIAR	Canada thistle	0.1	1	Just a couple plants

Do not record tolerate species in this table.

DON'T FORGET TO FILL OUT THIS SECTION!

Estimated size of pit: 6.3 **acres**
(1 acre = 43560 ft², or approximately 209 ft x 209 feet. **1/10 acre** = 4356 ft², or 66 ft x 66 ft, or approximately 435 ft x 10 ft)

Percent of pit occupied by invasive plants 5 **%**
This percent should indicate the percent of the pit that is NOT usable as a rock source as you find it on the day of the inspection. This includes area occupied by weeds AND the area potentially contaminated with seeds or other propagules.

Was this pit treated for invasive plants during this visit? (Yes) / No
If yes, please fill out a FACTS form documenting treatment

Has this pit been treated for weeds before? (Yes) / No / Don't know **If yes, what year?** 2014

Cover Class and **Infested Area (acres)** columns are filled out exactly the same way as on the FACTS form.

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. DO NOT spend more than a few moments determining cover class.

2015 Olympic National Forest Invasive Species List

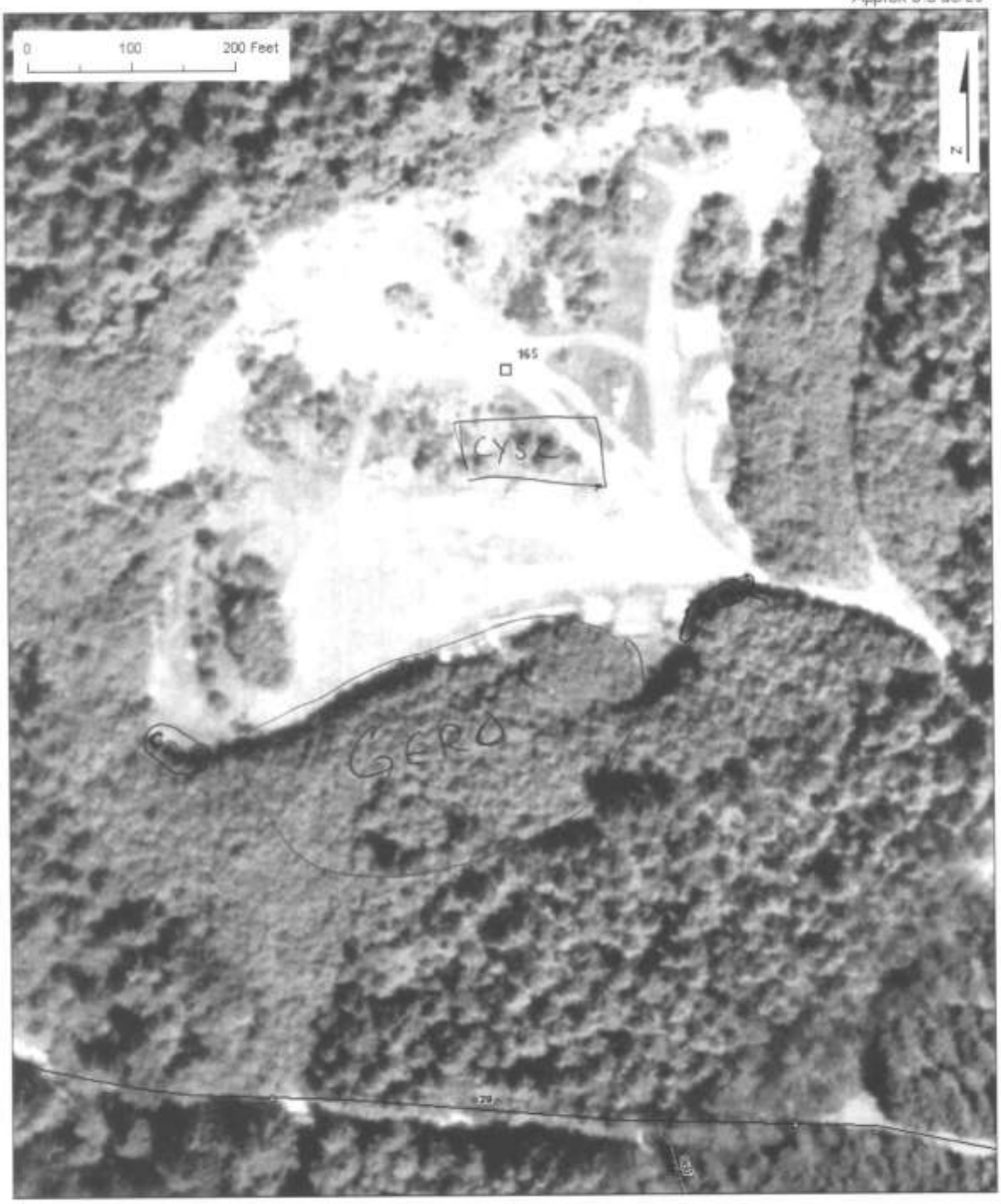
Updated 03/31/2015

Code	Scientific Name	Common Name	Treatment Priority
AEPO	*Aegopodium podagraria*	Bishop's weed, goutweed	1
ARMI2	*Arctium minus*	lesser burdock	1
BOOF	*Borago officinalis*	common borage	1
BRTE	*Bromus tectorum*	cheatgrass	1
BUDA2	*Buddleja davidii*	butterfly bush	1
CEDE5	*Centaurea debeauxii*	meadow knapweed	1
CEDI3	*Centaurea diffusa*	diffuse knapweed	1
CEJA	*Centaurea jacea*	brownray knapweed	1
CESTM	*Centaurea stoebe* ssp. *micranthos*	spotted knapweed	1
DIFU2	*Dipsacus fullonum*	Fuller's teasel	1
GERO	*Geranium robertianum*	herb Robert, stinky Bob	1
HIAU	*Hieracium aurantiacum*	orange hawkweed	1
HICA10	*Hieracium caespitosum*	meadow (yellow) hawkweed	1
HISA4	*Hieracium sabaudum*	European hawkweed	1
LAGA2	*Lamiastrum galeobdolon*	yellow archangel	1
LYPU2	*Lysimachia punctata*	large yellow loosestrife	1
LYVU	*Lysimachia vulgaris*	garden yellow loosestrife	1
ORVU	*Origanum vulgare*	oregano	1
POCU6	*Polygonum cuspidatum*	Japanese knotweed	1
POPO5	*Polygonum polystachyum*	Himalayan knotweed	1
POSA4	*Polygonum sachalinense*	giant knotweed	1
POBO10	*Polygonum x bohemicum*	Bohemian knotweed	1
PORE5	*Potentilla recta*	sulphur cinquefoil	1
SEJA	*Senecio jacobaea*	tansy ragwort	1
SILAA3	*Silene latifolia* ssp. *alba*	bladder campion	1
SYOF	*Symphytum officinale*	common comfrey	1
VETH	*Verbascum thapsus*	common mullein	1
VIMA	*Vinca major*	bigleaf periwinkle	1
VIMI2	*Vinca minor*	common periwinkle	1
CIAR4	*Cirsium arvense*	Canada thistle	2
CIVU	*Cirsium vulgare*	Bull thistle	2
COAR4	*Convolvulus arvensis*	field bindweed	2
CYSC4	*Cytisus scoparius*	Scot's broom	2
DACA6	*Daucus carota*	Queen Anne's lace	2
HEHE	*Hedera helix*	English ivy	2
HYPE	*Hypericum perforatum*	common St. Johnswort	2
ILAQ80	*Ilex aquifolium*	English holly	2
LALA4	*Lathyrus latifolius*	everlasting peavine	2
LYSY	*Lathyrus sylvestris*	flat pea	2
PHAR3	*Phalaris arundinacea*	reed canarygrass (including ribbon grass)	2
PRLA5	*Prunus laurocerasus*	English laurel	2
RUAR9	*Rubus armeniacus*	Himalayan blackberry	2
RULA	*Rubus laciniatus*	cutleaf blackberry	2
TAVU	*Tanacetum vulgare*	common tansy	2
DIPU	*Digitalis purpurea*	purple foxglove	Tolerate
HYRA3	*Hypochaeris radicata*	hairy catsear	Tolerate
LEVU	*Leucanthemum vulgare*	oxeye daisy	Tolerate
LOPE80	*Lotus pedunculatus*	big trefoil	Tolerate
PLLA	*Plantago lanceolata*	narrowleaf plantain	Tolerate
RARER	*Ranunculus repens* var. *repens*	creeping buttercup	Tolerate
TAOF	*Taraxacum officinale*	common dandelion	Tolerate

Rock Pit Inspection: Bonidu Pit

Date of Inspection: 9/10/15 (include year)

Clallam County
29 road, MP 37.2
(entrance near 29 x 2900960 jxn
Approx 6.3 acres



Calibration Verification

Agency/Organization: Clallam Co Noxious Weeds Date: 6/9/14

Each piece of equipment listed below has been calibrated using an accepted, appropriate method, and examined and repaired as necessary to ensure it is safe and in good working order. Each unit will be maintained periodically as needed throughout the field season.

Signature: Cathy S Position: Coordinator

Equipment ID	Equipment Type	Calibrated GPA	Working Condition?	Comments	Examiner Initials
97	Backpack	50	good		SM
84		51			JPC
96		32	good	Cone Tip	SM
3		40	Fair	Weak/Low pressure	JPC
94		42	good	Cone Tip	SM
5		36	Good	Brass Tip	JPC
99		42	good	Cone Tip	SM
91		34	good		SM
117		52	Fair	Handle gets stuck on JPC	JPC
98		41	good	handle little loose	SM
93		41	POOR	Very Leaky Around handle sticks pump	JPC
50		42	Good	Had to borrow handle from other sprayer	JPC
16		36	Good	Says it leaks.	
M3	Handsprayer	37	Good		JPC

APPENDIX K: CALIBRATION METHODOLOGY

Followed Method 2

Method 1-Hand Sprayer Calibration Method
It is just as important to calibrate manual sprayers as it is to calibrate power sprayers. Generally, these sprayers are calibrated by determining the amount of liquid required to adequately cover the intended target.
Step 1: Area Measurement Measure and mark off an area 20 feet by 50 feet (1,000 square feet). Practice spraying the area with water. Spray the area twice for a uniform application. Walk in
one direction, swinging the nozzle back and forth. When you finish, go over the area again, this time walking at a right angle to the direction you walked before. For example, walk from north to south for the first application, and from east to west for the second.

Step 2: Liquid Measurement Using water, fill the sprayer to a known mark and spray the area. Refill the sprayer, measuring the amount of water required to fill to the original level. The amount of water needed to refill the tank is the amount used per 1,000 square feet.

Example: One gallon of water was put in al -gallon hand-operated sprayer. After spraying a I 00- square-foot test area, it was determined that 8 ounces of water were needed to refill the tank to the I gallon mark. At this application rate, how many square feet of carpet could be treated with I gallon?

spray used =8 oz. on I 00 sq. ft. I gal. water = 128 oz. 128 oz. =16 8 oz.
16 x 100 sq. ft. = 1,600 sq. ft.

Thus, 1,600 square feet of carpet could be treated with I I gallon of liquid.

Change Delivery Rate

If your sprayer is delivering less than or more than enough spray, you can change the rate by using one of three methods:

•Change the pump pressure. Lower pressure pushes less spray out of the nozzle; higher pressure pushes more spray out. This is not the best method because a pressure change will change the nozzle pattern.

•Change the speed of the sprayer. Slower speed leaves more spray along the target area; faster speed means less spray is left behind. Doubling the speed you move cuts the application rate in half. Changing the speed is practical for small adjustments of the application rate.
Adjust each nozzle's hole size by changing the nozzle's disk or change the entire nozzle. This is the preferred method of adjusting the application rate. By increasing the size of the hole in the disk or nozzle, you increase the application rate.

Method 2-Calibration of Small Volume & Hand Held Sprayers

The procedure for calibrating a hand-held or backpack sprayer is simple. Just follow these steps: 1. Measure out an 18- x 18- foot strip in the area similar to the one you will be spraying.

2. Add water to your tank and in a uniform manner, spray this area with water and record the amount of seconds it takes. Do this 2 or 3 times making sure that you keep your pattern and pressure constant. Take the average.

3. Measure the amount of water delivered to this strip by spraying into a bucket for the same amount of time as in step #2. Also keep your pressure the same as when you sprayed the strip. 4. The amount of water collected in fluid ounces equals the output or GPA. (Ounces = GPA)

This method works because of the relationship between a square that is 128th of an acre (I 8 1/2x 18 V2= 342.25 ft2) and the fact that there are 128 ounces in a gallon.