Olympic Peninsula Cooperative Noxious Weed Control 2012 Project Report

A Title II Participating Agreement between:
USDAFS Olympic National Forest
and
Mason County Noxious Weed Control Board

Report compiled by
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March 12, 2013

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A copy of this report will be posted to the Mason County WSU Extension website at:
http://county.wsu.edu/mason/nrs/noxious/Pages/default.aspx
2012 Report

Acknowledgements

We'd like to acknowledge the support and cooperation from the following people and organizations. Thanks for your continued efforts in reducing the impacts of invasive plants and noxious weeds on the resources of Mason County!

Mason County Noxious Weed Control Board Assistants

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Darrell Borden and WCC crew

EXECUTIVE SUMMARY

Project Goal:

The goal of this Cooperative Noxious Weed Control Project is to stop the spread of noxious weed species, reduce existing populations and prevent the introduction of additional non-native plant species onto Olympic National Forest lands. The project continues to work towards developing a cooperative working relationship between the public, landowners and agencies managing public lands, recognizing that a coordinated and standardized weed control program across jurisdictional boundaries maximizes the efficiency of these efforts. Public education and awareness continue to be key elements of Mason County's Noxious Weed Control program.

Project Overview:

Since 2005, Title II funding has supported Mason County and the Mason County Noxious Weed Control Board's (MCNWCB) efforts to develop a Noxious Weed Control program which is responsive to the needs of the Mason County public and collaborative with other agencies and groups. The Mason County Noxious Weed Control Board has been an active participant in the protection of National Forest lands from the threat of invasive plant species. MCNWCB staff has worked to locate and treat noxious and invasive plant infestations on Olympic National Forest lands and on neighboring properties. These efforts strive to control infestations which have the potential to degrade National Forest natural resources. The program continues to deliver education and technical assistance regarding the impacts and control of noxious weeds to residents of, and visitors to, Mason County.

Title II funding has provided employment to several local residents and training opportunities to county staff, partners and volunteers.

2012 Project Goals:

- Control invasive plants on roads scheduled for decommissioning.
- Control invasive plants in botanically sensitive areas, including areas occupied by USDA Forest Service listed "Sensitive Plants".
- Conduct surveys of and provide technical expertise to privately owned rock sources in Mason County.
- Survey for, and document presence of, invasive species in rock sources within the Olympic National Forest. Control invasive species when present.
- Control invasive plants in campgrounds, at trailheads and other heavily-used sites.
- Revisit previously controlled sites and perform necessary follow-up control work
- Identify and treat new populations utilizing the Early Detection and Rapid Response System (EDRR)

2012 Resources:

- Mason County Noxious Weed Control Board Coordinator (20 hours/week, 7 months)
- MCNWCB Field Assistants (1 @ 20 hours/week for six weeks; 1 @ 36 hours/week for 4 months)
- 1 Education Specialist -MCNWCB (20 hours/month, 6 months)
- WCC crew - 2 weeks

2012 Accomplishments:

- Treated, either manually or with herbicide, approximately **200** weed-infested acres
- Completed and submitted **96** paper accomplishment forms for the Forest Activity Tracking System (FACTS) database. In addition to required fields, site specific notes and recommendations were included for many locations.
- Participated in **8** public events, resulting in over **1800** contacts with Mason County residents or visitors
- Completed annual project report.

Observations and Recommendations:

On federal lands, the Mason County Noxious Weed Control Board continues to contribute to the implementation of the Olympic National Forest's Integrated Weed Management Program as adopted in the 2008 Final Environmental Impact Statement.

PROJECT SUMMARY

Project Goal

The goal of this Cooperative Noxious Weed Control Project is to stop the spread of noxious weed species, reduce existing populations and prevent the introduction of additional non-native plant species onto Olympic National Forest lands. The project continues to work towards developing a cooperative working relationship between the public, landowners, and agencies managing public lands, recognizing that a coordinated and standardized weed control program across jurisdictional boundaries maximizes the efficiency of these efforts. Public education and awareness continue to be key elements of Mason County's Noxious Weed Control program which seeks to protect the ecosystems and natural resources of Mason County from the harmful effects of invasive plants through an integrated approach that emphasizes prevention, early detection, and rapid response or treatment (EDRR).

Project Overview

Since 2005, Title II funding has afforded Mason County and the Mason County Noxious Weed Control Board (MCNWCB) the opportunity to develop a Noxious Weed Control program which is responsive to the needs of the Mason County public and collaborative with other agencies and groups. Title II of the Secure Rural Schools Act was designed, in part, to promote cooperation and collaboration between federal and local governments. This Title II funding has been instrumental in the development of the Mason County Noxious Weed program and the treatment of noxious weeds on or adjacent to National Forest lands. Funding from these agreements has provided for public education and outreach at multiple county events, survey and monitoring of noxious weed infestations adjacent to Forest Service lands, and has initiated the process of seeking landowner compliance with RCW 17.10.

Title II funding continues to provide employment to several local residents and training opportunities to county staff, partners, and volunteers.

Extensive invasive plant survey work took place on National Forest lands in the mid 1990's. This work became the foundation of the *Olympic National Forest Final Environmental Impact Statement and Record of Decision Beyond Prevention: Site-Specific Invasive Plant Treatment Project* (March 17, 2008). This analysis incorporated the best available science related to invasive plant management on National Forest system lands and is tiered to the *Pacific Northwest Invasive Plant Program Final Environmental Impact Statement* (R6 2005 FEIS). County Weed Boards, and contractors, are now actively involved with treatments prescribed by Olympic National Forest personnel, with control priorities based on a matrix of criteria which includes ecological impact, new infestations of aggressive species, treatment in areas of high public use and infestation potential (e.g. parking lots, campgrounds, trailheads, horse camps,

gravel pits), and containment/control of existing large infestations of species with focus on boundaries of infestation. For known sites, the emphasis is on controlling high priority noxious weeds (Appendix E) in areas with high potential to spread, such as rock sources or campgrounds, or in particularly fragile, sensitive environments such as Botanical Areas.

On non-Forest Service lands, which may include other federal lands, state, county and private lands, the emphasis continues to be in areas where uncontrolled noxious weed populations are spreading and hindering coordinated control activities. The Mason County Weed Board provides a link to private landowners whose weeds threaten federal lands. Program goals include public education, monitoring infested sites, surveying for new noxious weed infestations, seeking both private and public landowner compliance with RCW 17.10 and WAC 16-750 and assisting other public agencies with their efforts to control noxious weeds.

Work has been accomplished by various individuals and crews. This has included the Mason County Noxious Weed Control Board coordinator and assistants, all working part-time through funding available through this agreement. In addition, the Washington Conservation Corps (WCC) crews under the direction of Mason County Noxious Weed Control Board personnel have been instrumental in achieving program goals.

Mason County Noxious Weed Control program **2012 Snapshot**	
Number of Known Weed Species (2012 Weed List)	55
Number of Regulated Species	27
Most Common Regulated Weeds	Tansy ragwort, knapweeds, hawkweeds, giant hogweed
Least Common Regulated Weeds	Blueweed, perennial sowthistle
Number of Landowner contacts (estimate)	1800
Educational Events	8
County funding for Noxious Weed program (General fund)	$23,616.00


Tansy ragwort


Spotted knapweed


Yellow hawkweed

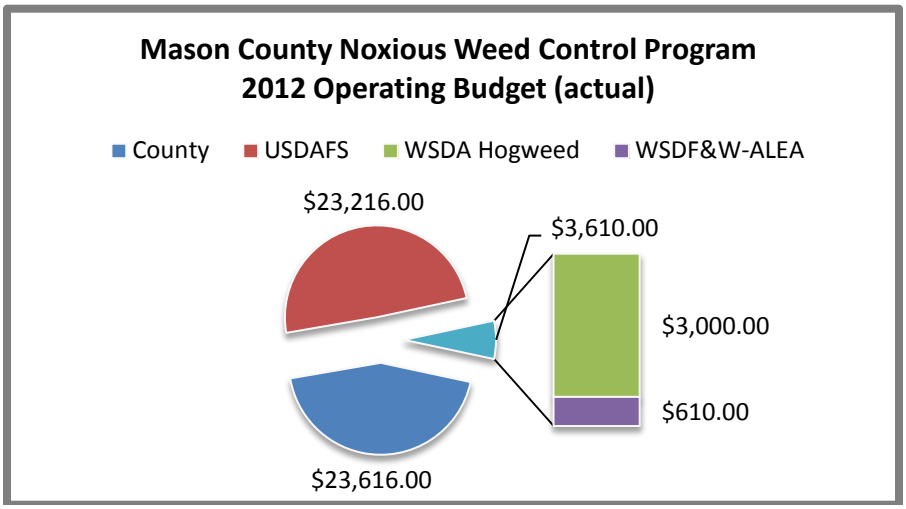

Giant hogweed

2012 Project Description

A preseason work session was held on April 25, 2012 with Forest Service personnel and County Noxious Weed Coordinators. A project work plan was developed by the Forest Service that established priority sites and species for the season (Appendix A). The planned work involved treating and monitoring previously identified weed infestations on Forest Service land. The Forest Activity Tracking Sheet (FACTS) form was used to document manual or chemical treatment. Treatment reporting was based on a unique "Reference Number", assigned within Project Areas. A Forest Service employee monitored treatment sites and provided feedback to the county weed programs regarding treatment efficacy (Appendix I, example of Monitor's report).

Recruitment of field assistants proved to be a challenge this year. Ultimately, a Mason County WSU Extension AmeriCorps volunteer assisted with the program until July 25. In late August, a full time field assistant began work and the MCNWCB coordinator supplemented her part time appointment during the field season. The county coordinator was in the field daily for much of the field season, providing the required Applicator's License and expertise for the new crew members

An effective County Weed Board can protect USDA Forest Service lands from noxious weed encroachment. Since funding for the noxious weed control program in Mason County is minimal, support from Title II under the Secure Rural Schools Act has enabled the County Noxious Weed Control Board program to remain viable. This minimal county funding has restricted the MCNWCB program's ability to survey for noxious weeds and to achieve compliance from landowners with noxious weed infestations. As a result more time was spent achieving Forest Service goals with Title II funds on National Forest lands. These funds also provided for an additional part-time person who planned and often staffed educational booths at county events.



In 2012, treatments on Forest Service lands continued to be prioritized as follows:

- Control weeds on roads scheduled for decommissioning.
- Control weeds in quarries and other rock sources on National Forest land.
- Control weeds in botanically sensitive areas, including areas occupied by USDA Forest Service listed "Sensitive Plants".
- Control weeds in campgrounds, trailheads and other heavily used sites.
- Revisit previously controlled sites and perform necessary follow-up control work.
- Identify and treat new populations (EDRR), identified by Forest Service or MCNWCB personnel.

2012 Project Resources and Performance

The number of staff/participants, the amount of time devoted to this project, and tasks completed were:

- **Supervisor (MCNWCB coordinator): 20 hours/week, for 6 months, licensed applicator**
  - Supervised and administered the project
  - Provided crew training, technical information and support; and planned and supervised most field treatments
  - Participated in a beginning of the year planning meeting and an end-of year meeting with Forest Service staff
  - Completed end-of-season reporting and planning for 2013 field season

- **Field team: 1 field assistants, 20 hours/week for six weeks; 1 field assistant for 36 hours/week for 4.0 months**
  - Treated a total of nearly 200 acres
  - Completed 96 FACTS forms for all treated sites

- **Education Assistant: 20 hours/week for 9 weeks**
  - Developed education and outreach materials for various events and staffed booth

2012 Project Accomplishments

In 2012 nearly 200 acres of noxious weeds were treated by MCNWCB personnel, compared to 234 acres treated in 2011.

County staff completed the majority of treatments this season with some support from a WCC crew. Appendix **B** summarizes types of treatment and specific weed species treated.

2012 Accomplishments

Acres Treated	**200**
New Sites located and/or treated	**4**

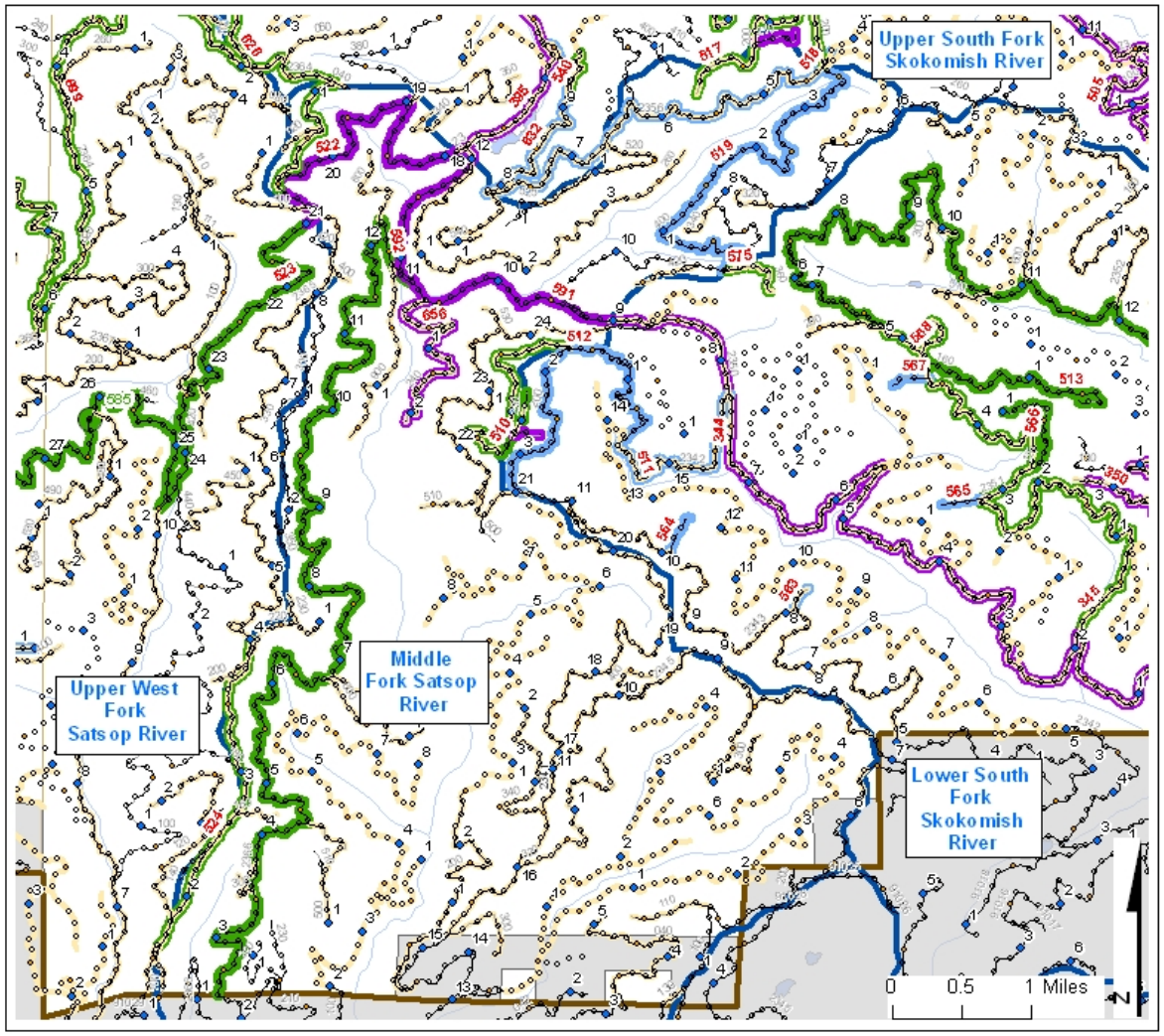
2012 Rock Pits Inspected/Treated

Rock Source	Option A Rock Source Exceeds Requirements	Option B Rock Source Meets Requirements	Option C Rock Source Meets Minimum Requirement	Treatment (Manual)	Treatment (Herbicide)
Jefferson Creek Pit					9/11/2012
Cushman Pit					7/5/2012
Lake Cushman Quarry					7/5/2012
Brown Creek Quarry					6/14/2012 8/14/2012
Hamma Hamma Pit					9/4/2012
Little Creek Quarry (private)			Site visit/consult		
Skookum Quarry (private)		Inspection 09/25/2012			

WORK PLAN MAPS

The following six maps were created by Forest Service personnel and depict the various areas of National Forest land within Mason County where noxious weed control activities were prescribed in 2012. Callout boxes provide valuable information pertaining to species, degree of infestation, road closures, etc..

Olympic National Forest FY 2012 Invasive Plant Program
Map 1. Mason County: Satsop/Skokomish

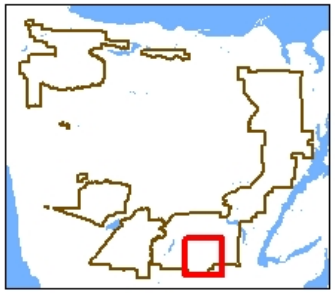


Invasive Plant Treatments

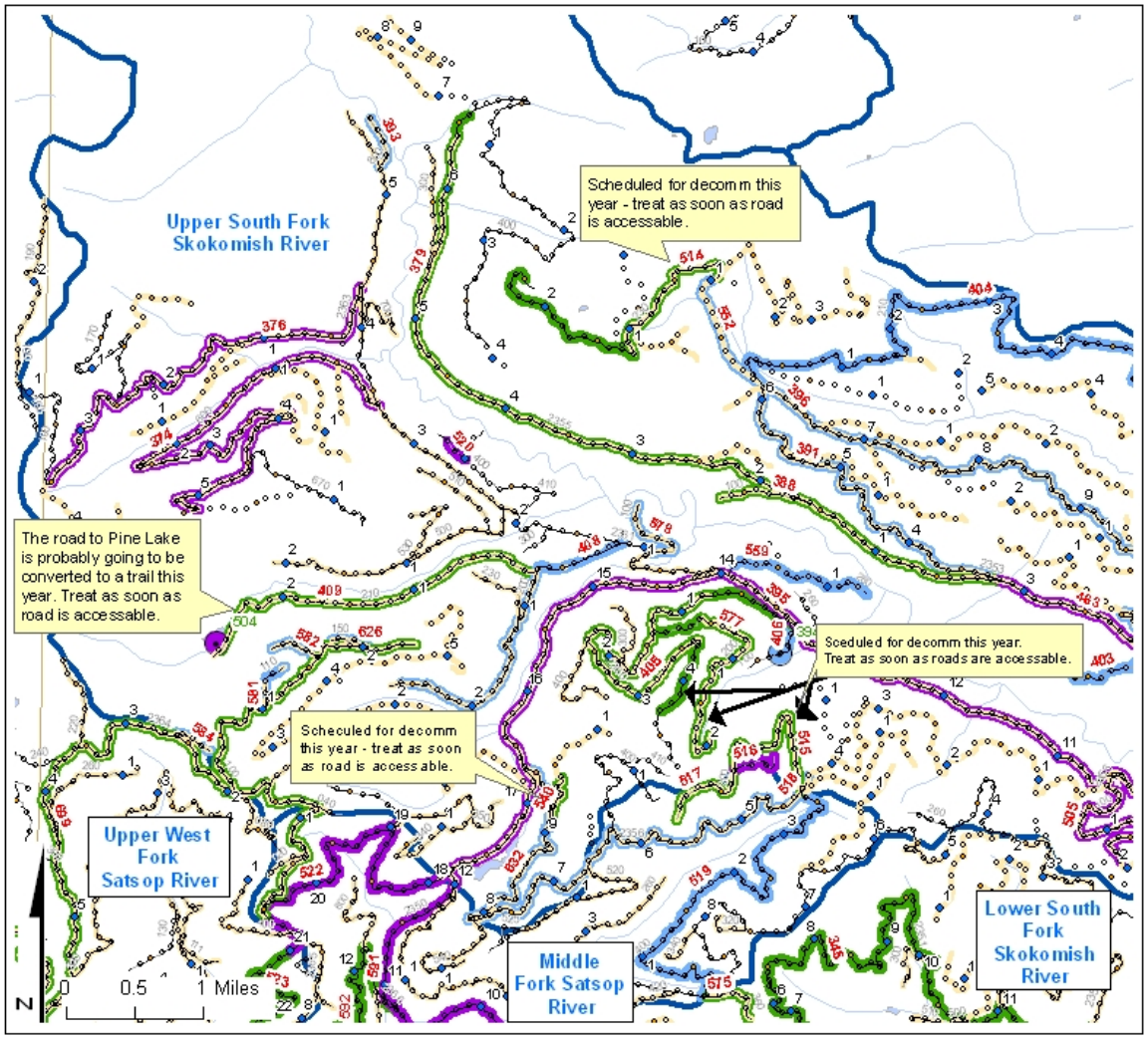
County project - road
- Priority 1 - Higher priority
- Priority 1A - Treatment mandatory
- Priority 2 - Lower priority

County project - non-road
- Priority 1 - Higher priority
- Priority 1A - Treatment mandatory
- Priority 2 - Lower priority
- Open Road, primary
- Open Road, secondary
- Closed Road
- 0.1 Milepost
- 0.5 Milepost
- 1.0 Milepost
- High Risk Road
- Watershed Boundary
- Olympic NF Boundary

Red numbers
  Ref # for roads
Green numbers
  Ref # for non-roads
Black single digit numbers
  Road mileposts (labeled every mile)
Black 4 and 3 digit numbers
  Road and spur numbers, respectively
Blue text
  6th field watershed name



Olympic National Forest FY 2012 Invasive Plant Program
Map 2. Mason County: Upper SF Skokomish Northwest



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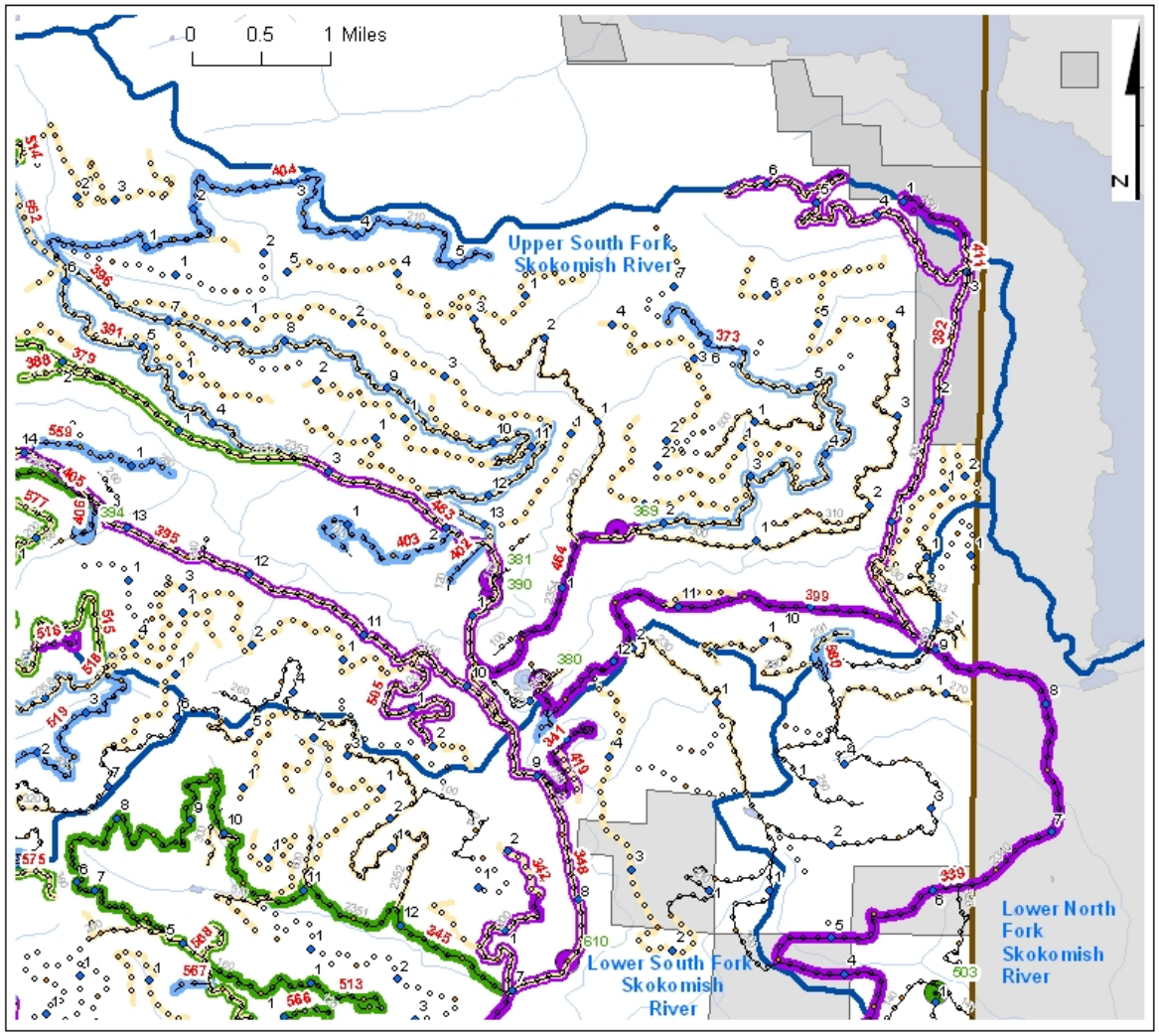
Olympic National Forest FY 2012 Invasive Plant Program
Map 3. Mason County: Upper SF Skokomish East



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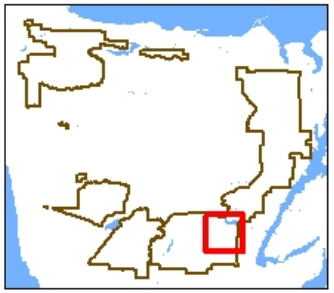
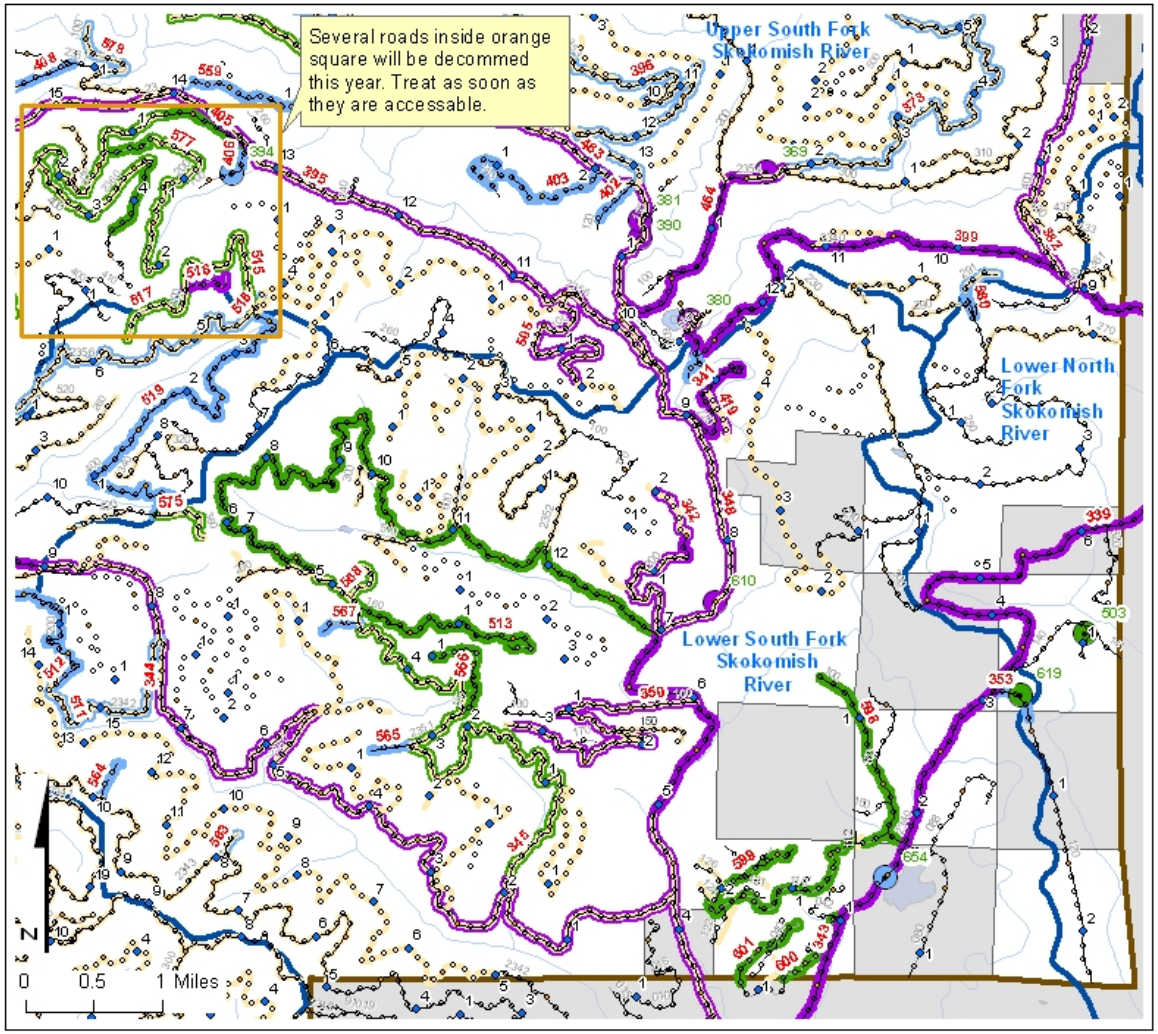


Olympic National Forest FY 2012 Invasive Plant Program
Map 4. Mason County: Lower SF Skokomish Southeast



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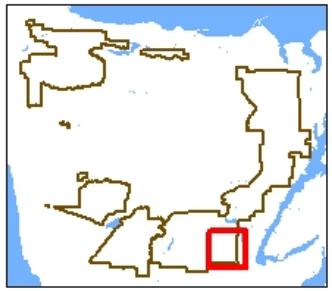
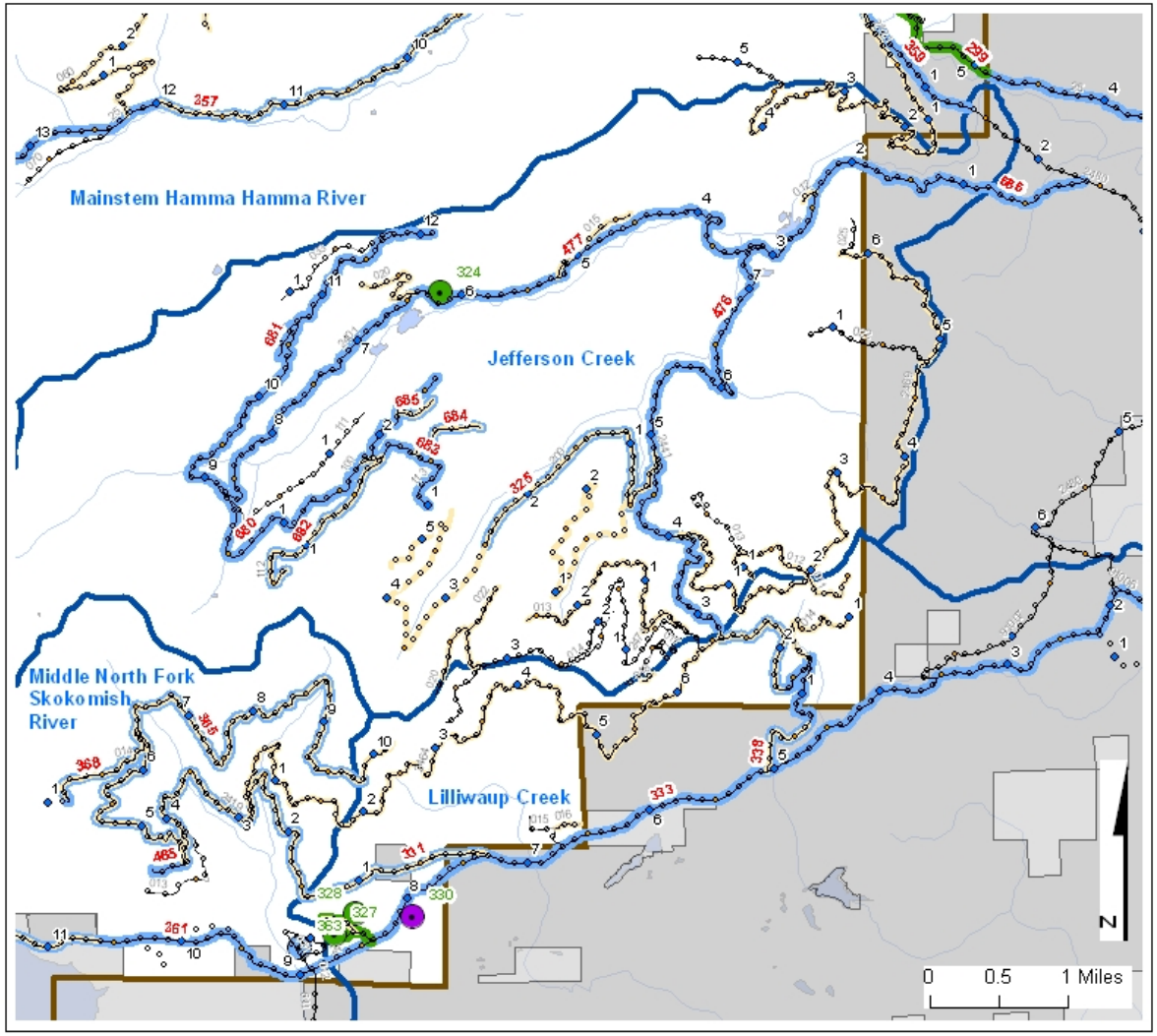


Olympic National Forest FY 2012 Invasive Plant Program
Map 5. Mason County: Jefferson Creek



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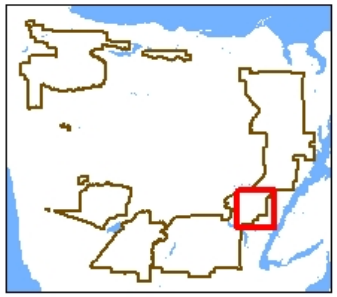
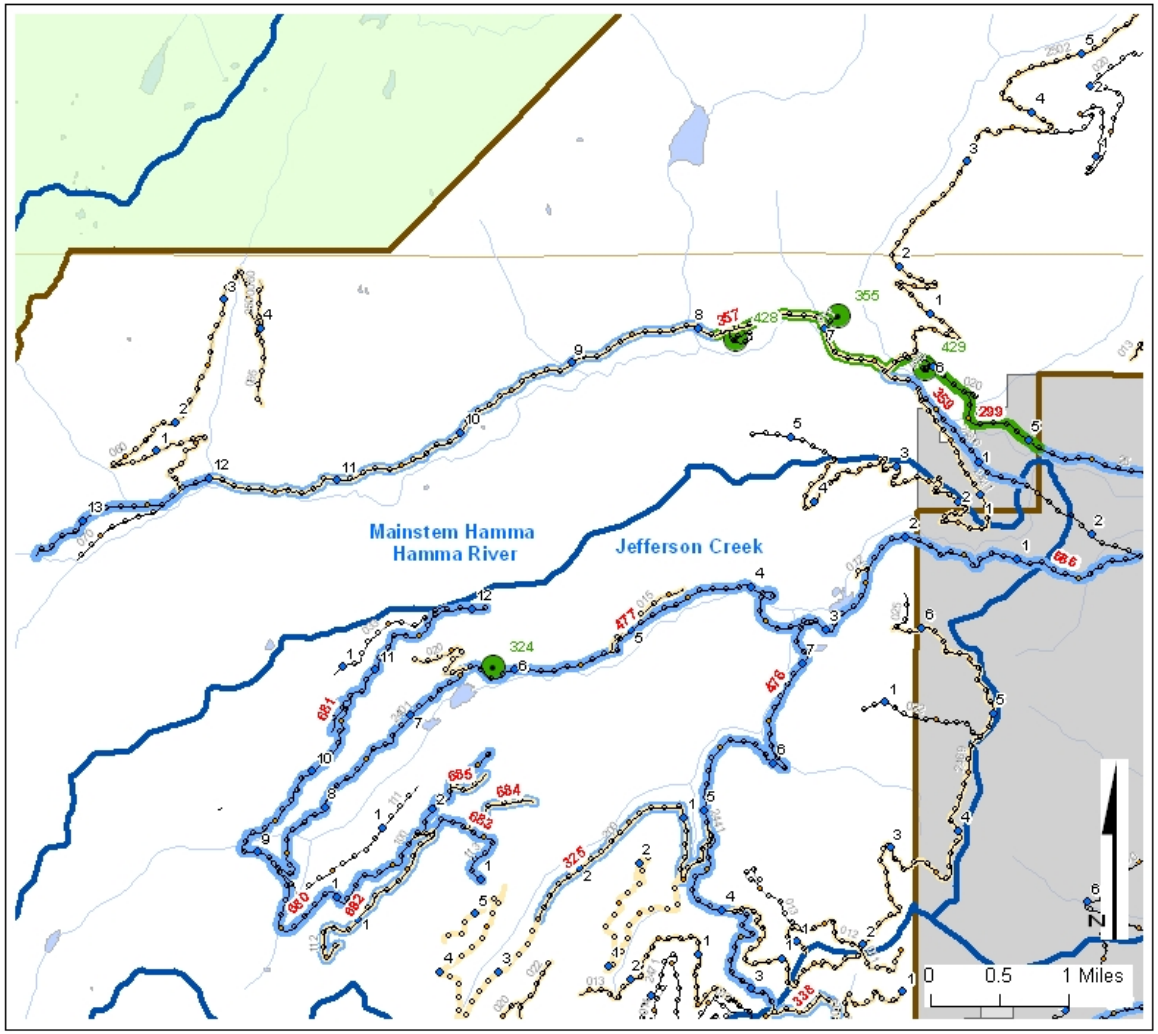


Olympic National Forest FY 2012 Invasive Plant Program
Map 6. Mason County: Hamma Hamma



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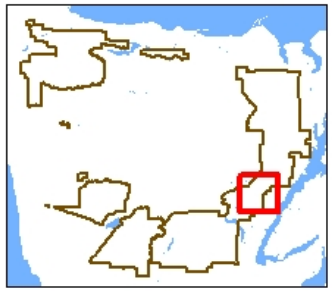


POST-SEASON OBSERVATIONS

Nature of the Problem

Weed infestations continue to threaten the health and diversity of native plant communities, both within the boundaries of the Olympic National Forest and on adjacent lands. These aggressive invaders can displace native species. Some weeds, such as poison hemlock (*Conium maculatum)* are toxic to humans and wildlife, while others can contribute to conditions which may result in increased erosion. Many die back in the winter and offer little to no food or habitat for native wildlife.

Since 2009, Mason County personnel, WCC crews and contract weed control personnel have been actively treating noxious weeds on many of the sites identified in the Olympic National Forest's Integrated Weed Management Program as adopted in the 2008 Final Environmental Impact Statement. A compilation of Forest Service data collected since treatments began in 2010 supports the field observation that infestation size and density have been reduced. Continued follow-up on known sites is essential for effective, long term control. However, in many cases, road closures have resulted in decreased access to these sites and infestation information is more difficult and time consumptive to obtain.

Invasive Weed Populations

- Overall distribution and populations densities continue to be reduced on many sites with multi-year treatments.
- The most commonly recorded invasive species continue to be Scotch broom, tansy ragwort, herb Robert, Canada thistle, bull thistle and everlasting peavine.
- St. Johnswort appears to be increasing in its abundance and distribution. Those areas considered more at risk, due to proximity to trailheads, areas of special significance, etc. will need continued monitoring and perhaps the development of a decision matrix to determine when to treat this Class C Noxious Weed.
- The purple loosestrife site recorded at Lake West continues to be monitored. As in 2011, no plants were located in 2012.This site will require long term monitoring to ensure that the site and the surrounding area remain free of purple loosestrife.
- Meadow, diffuse and spotted knapweeds continue to be recorded at new sites in Mason County. Forest Service lands will need to be watched carefully for introduction of these species.
- Common mullein (*Verbascum thapsus)* was located and treated at the Jefferson Creek Pit. This species, a native of Europe and Asia, is a noxious weed in Colorado and Hawaii and will be added to the 2013 Species list as a priority 1 species.

- As observed on July 05, 2012, the infestation of Scotch broom along the Lake Cushman Road has expanded. Plants are 3 feet tall at the junction of the Mt. Rose village entrance. Since this is a high traffic area and has the potential to become dusty early in the season, it is recommended that treatment be prescribed and undertaken during the early part of May. This timing would minimize conflicts between workers and Forest and National Park visitors. In addition, this would prevent the plants from flowering and the production of seeds.
- Prickly lettuce (*Lactuca serriola*) is also starting to become more prevalent at the Lake Cushman pit and elsewhere. Treatment of this European invader was initiated in 2012.
- Multiple EDRR sites for yellow hawkweed in 2010 elevated this Mason County Class B 'designate' species to a high priority for control position on the Forest Service list of priority species. Herb Robert continues to be a high concern, because of its ability to invade undisturbed forest under-story, and to produce prolific seedling growth throughout the year. New Herb Robert sites are treated immediately utilizing EDRR.
- Herb Robert sites treated multiple times during the 2012 field season were revegetated with blue wildrye grass seed late in the season. These sites will be monitored for the effectiveness of this treatment.

Who would have expected Herb Robert at the Lebar horsecamp? Knowledgeable staff and a detective's eye resulted in finding this site before it expanded into the surrounding old growth forest.

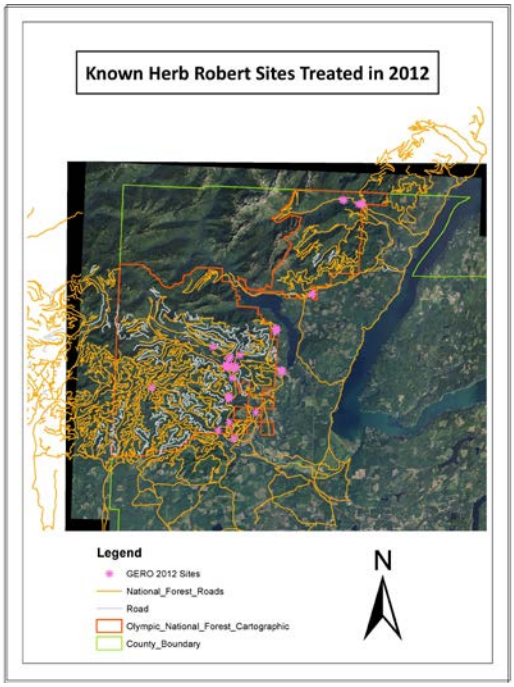
Survey and Treatment

- Issues beyond Forest Service and County control resulted in a late beginning to the 2012 field season. The required legal notice appeared in the June 07, 2012 edition of the Mason County Journal (Appendix G). Wet weather in June hampered early treatments; however, a warm and dry September and October permitted treatments to continue later into the season.
- Informal surveys were performed while driving to assigned treatment project areas and species identified as Class A, or Class B "designate" were treated as EDRR sites.
- The MCNWCB continues to utilize Integrated Vegetation Management (IVM) to develop site specific treatments.

On FS Road 2340, tansy ragwort was manually removed to minimize the chance of the plants producing viable seeds
Thousands of tansy ragwort seeds did not reach their potential.

- The MCNWCB has increased its treatments utilizing triclopyr. Established grasses are generally not affected by this selective herbicide. With methodical and careful application, non-target native plants appear to be less impacted and recovery seems to progress more quickly than with use of products containing glyphosate.
- Pits continued to be a high priority for inspection and treatment. Multiple pits were incorporated into the 2012 project list with most being identified as a Priority 1A for treatment.
- Treatment of campgrounds and trailheads remains a high priority because of the potential for spread and the introduction of new species. Four campgrounds identified as high priority for treatment were treated late in the 2012 season, so as to not conflict with Forest visitor usage.
- Treatment of St. Johnswort utilizing triclopyr at the Mint Meadow was initiated this year after multiple releases of the Klamath weed beetle proved unsuccessful. Although release and monitoring efforts were initiated in 2009, few insects were observed in the southwest portion of the meadow where the St. Johnswort was rapidly outcompeting native grasses and shrubs.

- Multiple herbicide applications were made at several herb Robert sites, reducing the population's ability to reproduce. Repeated treatments will eventually reduce the seedbank for this prolific winter annual.
- The extent of invasive plant populations in less accessible areas, i.e. wilderness areas, decommissioned roads or roads inaccessible due to storm damage, continues to be minimally documented. The work plan does not prioritize or allocate time to accomplish this facet of the noxious weed control program.
- The monitoring component of the project continues to be developed so as to provide valuable feedback regarding treatment efforts. Timing and reporting of these findings is critical to the continued improvement of the implementation of the weed control strategies.



Data Collection/Mapping

- Feedback from the 2011 field season was incorporated into the 2012 FACTS form format. In addition, considerable time was spent early in the season ensuring a consistent approach by all personnel completing the FACTS forms.
- Color 8 ½ by 11 inch maps were provided by Forest Service personnel with site reference numbers and call-out comments marked on them to identify issues of concern for a particular area. These were very useful and are found on pages 11-16 of this report.
- The crew was equipped with a field notebook which contains the work plan, sorted by priority, maps, forms, etc.. The overall project map hangs on the office wall and priorities are established based on available field time.
- Field personnel reviewed FACTS forms daily, entered accomplishments into an excel spreadsheet and submitted copies to the Forest Service electronically on a regular basis
- MCNWCB personnel collected very little survey data on National Forest land during the 2012 season. Informal surveys were conducted on Tacoma City Light land on the west side of Lake Cushman to determine presence/absence of Herb Robert. Currently, weed sites on the Olympic National Forest have not been mapped in the county's GIS system. A plan is being developed to map any Class A or Class B "designate" or "selected" noxious weeds found on the Olympic National Forest into the county GIS system.

RECOMMENDATIONS

Future Direction of the Project

On July 06, 2012, the Secure Rural Schools and Community Self-Determination Act of 2000 was reauthorized for federal fiscal year (FY) 2012 as part of Public Law 112-141. The Mason County Noxious Weed Control Program submitted a Title II Project Proposal requesting $37,941.00. 5 proposals requesting a total of $94,541.00 were submitted to the Olympic National Forest and the Olympic Peninsula Resource Advisory Committee (RAC) for review. 4 projects were funded, totaling $39,806.00. On September 13, 2012, Acting Forest Supervisor, Amanda McAdams documented and approved the RAC's project recommendations, including $15,000.00 for the "District Cooperative Noxious Weed Control" project proposed by the Mason County Noxious Weed Control Board. With the addition of these funds, $63,511.00 will remain in the Participating Agreement balance.

Efficient use of financial resources continues to be a cornerstone of the Mason County Noxious Weed Control program. In Mason County, and other Olympic Peninsula counties, significant progress has been made during the past three years in the reduction of noxious weeds on National Forest lands. It will be imperative to secure future funding to sustain the progress which this cooperative project has accomplished.

The successful adoption of the 2008 EIS, which authorized herbicide use throughout the Olympic National Forest, allows effective treatment of larger infestations and certain weed species that do not lend themselves to non-chemical methods. We will continue to consider all control methods, but the most effective treatments for a small MCNWCB crew will likely utilize herbicides on a regular basis.

The MCNWCB coordinator has extensive knowledge of the project area, infestation locations, plant identification and continues to gain expertise in best treatment methods. Staff have provided a relatively inexpensive, locally based work force with county wide jurisdiction and long term commitment. However, the MCNWCB program is not equipped to carry out large-scale treatment operations over a large area or many miles of extensively infested roadsides or those requiring specialized all terrain application devices. The expertise of the Weed Board staff is most efficiently utilized to respond to, and treat new infestations, follow up application to contractor applications during the same treatment year, and treat those moderately sized projects which can be efficiently accomplished with backpack spray methods. As the "closest forces" entity, staff can respond quickly to high priority projects, treat new infestations and can work within the constraints of other activities taking place on National Forest lands.

The following email is an example of communication which resulted in timely (within the week) response by the MCNWCB team.

> Hi Pat,
>
> I just left you a message on your voicemail, but since I am heading out all day tomorrow with Cathy and Susan, I thought I would shoot you a quick email. Today I inspected the Lake Cushman Quarry, which is 0.9 miles south of the 2451 Causeway. I hand pulled some SEJA rosettes. There were a few CIVU on the washout prone alluvial (backside of the pit). Cheryl asked me to ask you to head out there soon to spray them and any other SEJA that I may have missed. It is not a large job, but the project is time sensitive.
>
> Thank you!

MCNWCB staff continued an effort to revegetate several Herb Robert treatment sites. This year, blue wildrye (*Elymus glaucus)*, an Olympic National Forest native grass whose seed was collected on the Olympic National Forest and supplied by the Olympic National Forest, was utilized as part of an Integrated Vegetation Plan. Monitoring during the 2013 field season will determine the efficacy in providing a competing vegetative component on these heavily infested and multiple treatment sites.

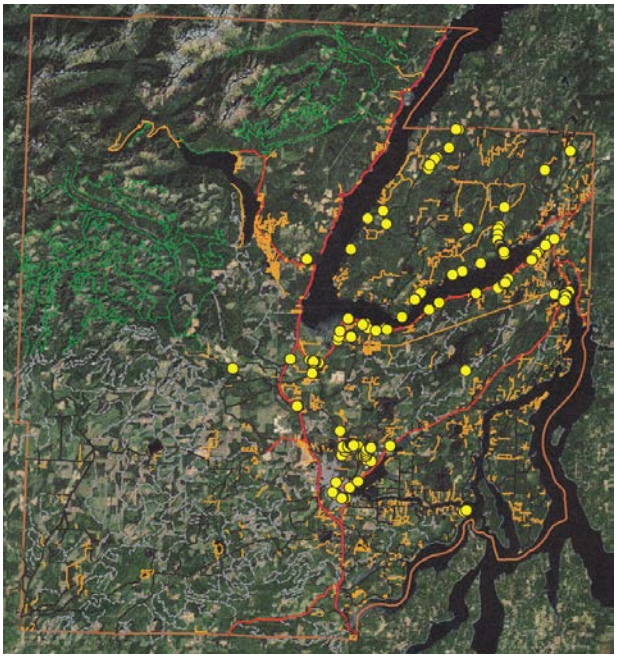
Program Development

- Stable funding provides improved year-to-year weed control continuity within the Olympic National Forest and an improved weed control program on other Mason County lands that are adjacent to, or directly connected to, the Forest. Funding from the Forest Service is especially important because funding for noxious weed control from Mason County continues to be minimal.
- As required, monitoring will continue to be an important component of the program. This requirement can function to provide feedback to facilitate and prioritize re-treatments and locate new sites since visitation is often during a different time of the growing season.
- We need to determine our goals and uses of hand-held GPS units in the field. We currently have a Garmin GPSmap 76CSx.

Survey and Treatment

- While our focus will continue to be treating known sites, more time must be allowed each season for surveying and locating new infestations before they become well established. More periodic surveys will also give a better sense of whether we are getting ahead of new invasions, or they simply have not yet been identified.
- The yearly work plan could identify areas needing to be surveyed. A number of days could be allocated to survey especially during times of inclement weather.
- Additional time must be built into the work plan for follow-up treatments because multiple applications to the same site during a single growing season provide substantially improved weed control. Specifically, all herb Robert sites will likely require 2 to 3 follow-up treatments per season.
- As the demand for weed free construction materials increases, a listing of high priority, non-Forest Service, pits that have potential to provide materials for Forest Service projects would facilitate the planning of inspections.
- Effective control of invasive plants should begin as early as possible in the road decommissioning process, especially in areas where herb Robert is present. The complexity of other scenarios will require thoughtful orchestration by the Forest Service, construction contractors and the local Weed Boards.

In addition to the treatments specified on Olympic National Forest lands, the Mason County Noxious Weed Control Board continued educational outreach within the community and has ended the year with a focused effort at surveying and mapping of knotweed species within county rights-of-way.



Results of year end survey

Documentation

- Continued discussions are necessary to affirm a consistent approach for data collection. The FACTS form appears to have reached a stable, consistent format.
- Pit surveys were often completed during treatment visits. Aerial photos were valuable for depicting where species were located more accurately than in a sketch format. (Appendix H)

Debris from Lake Cushman stockpiled at the Cushman Pit, fall 2012

2012 PROTOCOLS

Team and Project Dates

Treatment continues to be the focus of the project on National Forest lands. Patricia Grover, MCNWCB coordinator, and field assistants Connor Cordray, Hugo Vasquez and Anna Mangan performed and documented treatments. Fieldwork began in June 2012 and continued into November 2012.

Invasive Species Recorded

Treatment and surveys focused on Class A and B-designate weeds on the Mason County Noxious Weed List (Appendix F), and additional species that are of concern to the Forest Service (Appendix E). In most cases Class B non-designate, Class C, and unlisted 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, which can threaten undisturbed areas. Treatments were not intended to target all non-native species.

Road Survey and Treatment
(see Appendix B for summary)

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. Detection and treatment of new infestations was also a priority, especially if new sites were seen enroute to known sites.

a. Most known sites are roadside. Typically, at least 10 feet on both sides of the road was treated or surveyed. The distance treated/surveyed was recorded in the field and the area treated/surveyed was calculated using the following formula:

$$\frac{\text{miles surveyed} \times 5280\ \text{ft/mi} \times 10\ \text{ft/roadside} \times 2\ \text{roadsides/survey}}{43560\ \text{ft}^2\text{/acre}} = \text{acres surveyed/treated}$$

b. Trailheads, campgrounds, parking areas, and gravel pits were surveyed on foot and area surveyed or treated was estimated.
c. Due to unfavorable weather conditions and the unavailability of backpack sprayers, the WCC crew was directed to cut blooming Scotch broom and manually remove the smaller, tap rooted plants early in June on Forest Service roads 2300 and 2340.
d. Herbicide treatments were applied based on guidelines established in the 2008 EIS.
    i. Foliar herbicide applications were generally made using 1.5% AquaNeat or AquaMaster (glyphosate) and 0.5% Competitor (surfactant) or Element 3A (triclopyr), also at 1.5% with Competitor at 0.5%. Triclopyr does not kill established grasses and has a residual effect.
    ii. A legal notice listing all sites under consideration for herbicide treatment by the MCNWCB was published in the Shelton-Mason County Journal on June 07, 2012 (Appendix G). Herbicide applications were carried out between June 14, 2012 and October 11, 2012.

iii. On-site notices (Appendix G) were posted prior to treatments and left in place for at least 24 hours after treatment. Treatments in high-use areas such as campgrounds were avoided during busy times (near weekends or holidays) and Forest Service recreation personnel were contacted prior to commencing treatment.

Equipment

The Federal NPDEDS permit required that backpack sprayers be calibrated. Forest Service and MCNWCB backpack sprayers were calibrated at the beginning of the field season. The protocol utilized is found in Appendix J.

WCC and MCNWCB personnel measuring an area for sprayer calibration

Data Collection

A unique "Reference Number" identifies each treatment area and the corresponding data.

Forest Activity Tracking Sheet (FACTS)

FACT sheets are used to record treatments in each Reference Number. A sample form and instructions for filling it out, as supplied by the Forest Service, are in Appendix H.

Invasive Plant Inventory for Rock Sources, Olympic National Forest

The Rock Source Survey is used to track the suitability of quarry materials from both public and private sources to meet the Forest Service "Weed Free" standard for construction materials. Forest Service protocols for completing this form are included in Appendix H.

NRIS

No data was collected for new sites for inclusion in the NRIS database. New sites that were found and treated were recorded on FACTS forms only as EDRR (Early Detection Rapid Response) sites.

Data Reporting

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

Appendix A is the Project Area list supplied by the Forest Service.
Appendix B is a master list of reference numbers treated during the 2012 field season. It lists the area of treatment, by road, or other project area, method of treatment and weed species treated.
Appendix C is a summary of rock source inspections and treatments.
Appendix D showcases the MCNWCB participation in various Mason County events.
Appendix E contains the 2012 Forest Service Treatment Priority List.
Appendix F contains the 2012 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 any listed noxious weeds on their property. This same law provides for the formation of the County Noxious Weed Control Boards, and thus the weed control program in Mason County that is supplemented under this project. The Mason County 2012 Noxious Weed List is also included. 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.
Appendix G contains the public notice published in the Shelton-Mason County Journal and an on-site posting notice.
Appendix H contains an example of a completed FACTS form and a Rock Source Survey form.
Appendix I contains an extract from the Monitor's report.
Appendix J contains the Backpack Sprayer Calibration protocol.

APPENDIX A
FOREST SERVICE 2012
MASON COUNTY PROJECT LIST
(ordered by priority)

2012 Olympic NF Invasive Plant Program - Mason County
4/16/2012 clb

If no priority is listed, do not use herbicides unless it's an EDRR site.

Priority 1A projects must be completed
1 = High priority
2 = Moderate priority

Ref #	2012 Job Code	2012 Work Crew	Priority: 1A=mandatory 1=high 2=medium blank=don't treat unless EDRR	6th Field Watershed Name	Watershed County	Site Name	Road #	BMP	EMP	Total Miles	Comments
516	CMLG0910	County	1A*	Middle Fork Satsop	Mason		2356210	0	0.3	0.3	**Road scheduled for decomm. in 2012 - treat as soon as road is accessable - decomm will start in mid-June.**
504	S2F608	County	1A*	Upper South Fork Skokomish	Mason	**Pine Lake**	2361210			0	**Dates for herbicide treatment with the WCC: Sept 4 & 5, 2012.** At end of 2361210 road. Lake has a large, dense infestation of PHAR around its edges. This is a NEPAed project with a very specific PHAR eradication plan that needs to be followed. Do not treat unless you've talked to Cheryl. Small patches of CIAR, SEJA also present.
348	CMLG0910	County	1A	Lower South Fork Skokomish River	Mason		2300000	0	9.5	9.5	Yellow hawkweed at MP 3.0 - 3.5 (just before FS boundary),& MP0.0-3.3;Was not completed in 2011. MP 6.8 - 7.2 (jxn w/ 200 spur), MP 8.8 - 9.0 (just before Oxbow CG entrance). GERO seen Feb 2011 on western rd shoulder just past 2350 jxn; approx MP 4.4. Many other weeds, including CIVU, HYPE, SEJA, DACA, PHAR, TAVU, CYSC, CIAR. 1st 3.6 miles not on FS land.
610	CMLG0910	County	1A	Lower South Fork Skokomish River	Mason	**23 Road deep patch borrow site**	2300000	7.5	7.5	0	2300000, MP 7.5. Very important to monitor and treat in 2012. Disposal site for Fir Creek AOP, which was a yellow archangel site. Unclear if contractors on that project followed mitigation measures to prevent spread LAGA.
395	CMLG0910	County	1A	Upper South Fork Skokomish	Mason		2300000	9.5	18	8.5	SEJA, CYSC, daca4, Road to Spider Lake. Mystery hawkweed (H. umbellatum?) found in 2010 at jxn of 23 x 2356 on island in road.
522	CMLG0910	County	1A	Middle Fork Satsop	Mason		2300000	17.9	21	3.1	Starts just past Spider Lake. Wide variety of weeds; SEJA heavy in places, CIVU, CYSC4, HYPE, SEJA
350	CMLG0910	County	1A	Lower South Fork Skokomish River	Mason		2300100	0	3.2	3.2	Decommed in 2008; **needs monitoring and treatment.** We can probably have Irene or Mary walk this road and tell you what is out here, then treat as nec. SEJA was present prior to decomm, especially past the 130 spur.
342	CMLG0910	County	1A	Lower South Fork Skokomish River	Mason		2300200	0	2	2	**Will be decomm after 2012.** Large dense infestation of GERO in ditches and expanding into forest and clearings from MP 0 - 0.3. SEJA scattered all along road, especially upper segments. Last 0.5 miles is closed to vehicles, but still needs to be treated. Treated in 2010 & 2011, but needs follow up. HICA10 is also along edges of 23 road at junction.
341	CMLG0910	County	1A	Lower South Fork Skokomish River	Mason		2300220	0	1.4	1.4	Oxbow CG road. CEJA, SEJA, CYSC, CIAR4,
419	CMLG0910	County	1A	Lower South Fork Skokomish River	Mason		2300221	0	0.4	0.4	Oxbow CG road. Decommed in 2010, runs along river. Was used for the Skok LWD project in 2010; monitor and treat as time allows.
343	CMLG0910	County	1A	Lower South Fork Skokomish River	Mason		2340000	0	3.4	3.4	Follow up on GERO just after high steel bridge. Other parts of road a lower priority. SEJA, HYPE, TAVU, CYSC, CIAR, DACA, PHAR. Boundary KV
339	CMLG0910	County	1A	Lower North Fork Skokomish River	Mason		2340000	3.4	9.1	5.7	Boundary KV; CIAR4, CYSC4, SEJA, TAVU, CIVU, CYSC4, HYPE, RULA; See Ref# 419
399	CMLG0910	County	1A	Upper South Fork Skokomish	Mason		2340000	9.1	12.9	3.8	Road closest to Brown Creek CG is highest priority - **burdock becoming a problem**, as well as other weeds. Other parts of road segment lower priority, but treat as time allows.
380	CMLG0910	County	1A	Upper South Fork Skokomish	Mason	**Brown Creek CG**	2340000			0	VERY WEEDY in 2011! Burdock becoming a problem at campground - it is more prevelent now that I have noticed in the past. Also starting to see GERO in campground, as well as at entrace. This Ref # includes the 540, 543, and 600 spurs, which are all roads in the campground.
382	CMLG0910	County	1A	Upper South Fork Skokomish	Mason		2340400	0	6.3	6.3	**Decomm completed in FY11. GERO at jxn with 450 needs monitoring, and treatment as nec.**The rest of this road is a lower priority - only treat if there is time.

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2 = Moderate priority

Ref #	2012 Job Code	2012 Work Crew	Priority: 1A=mandatory 1=high 2=medium blank=don't treat unless EDRR	6th Field Watershed Name	Watershed County	Site Name	Road #	BMP	EMP	Total Miles	Comments
411	CMLG0910	County	1A	Upper South Fork Skokomish	Mason		2340450	0	1.2	1.2	**Decommed in 2011**; Severe GERO infestation prior to decomm - Monitor and treat in 2012.
562	CMLG0910	County	1A	Lower South Fork Skokomish River	Mason		2342231	0	0.2	0.2	Road will be decommed after 2012. Heavy SEJA infestation on adjacent roads
344	CMLG0910	County	1A	Lower South Fork Skokomish River	Mason		2350000	0	9	9	**Yellow hawkweed** abundant along road edges on 2350 at MP 10.5 – 11.5, which is in Satsop (Ref # 591). Lower part of 2350 (this Ref #) is in L SF Skok WS so survey for and treat this weed if found on this section of road - none found here yet. **Yellow archangel** at junction of 23 road and 2350 road. Fir Creek fish passage site. Bulldozed/buried in 2010 but will need monitoring and treatment of other weeds that will colonize site. Other weeds should be treated along entire stretch of road as well, including a small **GERO** infestation at pullout at MP 1.0. CIAR, SEJA, CYSC, CIVU, HYPE, TAVU
591	CMLG0910	County	1A	Middle Fork Satsop	Mason		2350000	9	12.1	3.1	Yellow hawkweed abundant along road edges at MP 10.5 – 11.5. Lower part of 2350 is in L SF Skok WS also needs to be surveyed for this weed - Ref # 344. Other weeds observed here include CYSC, SEJA, etc.These need treatment, too.
656	CMLG0910	County	1A	Middle Fork Satsop	Mason		2350240	0	2.1	2.1	Unsure what's here - Pat has it as an EDRR site to re-treat. hawkweed?
463	CMLG0910	County	1A	Upper South Fork Skokomish	Mason		2353000	0	3.2	3.2	CIAR4, CIVU, ARMI2, HYPE, PHAR3, SEJA, herb Robert found in 2009 at approx MP 0.8, "on a trail to the LeBar Cr & SF Skok confluence. East end of LeBar bridge on left. From datasheet: 475144, 5251590
381	CMLG0910	County	1A	Upper South Fork Skokomish	Mason	**Brown Creek Flat Quarry**	2353000	1.2	1.2	0	2353000, MP 1.2
390	CMLG0910	County	1A	Upper South Fork Skokomish	Mason	**Lebar Horse CG**	2353000			0	
464	CMLG0910	County	1A	Upper South Fork Skokomish	Mason		2354000	0	1.8	1.8	This segment of road is from the Skok bridge to the Brown Creek quarry (at 300 spur fork). **Discovered in 2009**: Large infestation of herb Robert at MP 0 - 0.1; extendes downslope towards road into Brown Creek CG, just past jxn.
369	CMLG0910	County	1A	Upper South Fork Skokomish	Mason	**Brown Creek Quarry**	2354000			0	At junction of 2354 and 2354300 road. CYSC4 has been greatly reduced, but follow up **with herbicide** in 2012 is needed. Also trace SEJA, CIVU, CYSC4, HYPE, RULA, and HYPE seen in 2011.
505	CMLG0910	County	1A	Upper South Fork Skokomish	Mason		2356100	0	1.9	1.9	**Road was decommed in 2010.** Mystery hawkweed (H. umbellatum?) discovered at MP 0.15 in 2009. Pulled then, but need to get positive ID. Monitor and treat in 2012.
520	CMLG0910	County	1A	Upper South Fork Skokomish	Mason		2361400	1	1.2	0.2	Opening (will be obvious when you get there) along this road at this segment has a wide variety of weeds, incl SEJA, CIAR, HYPE are the biggest concern. Very few weeds along the rest of road. Big washout at beginning of road.
374	CMLG0910	County	1A	Upper South Fork Skokomish	Mason		2361600	0	5.4	5.4	Entire road needs treatment; **Decommed upper part of road needs to be monitored in 2012, and treated as nec.** We can probably have Irene or Mary monitor, and then let you know if there is anything to treat on the decommed portion. Sensitive botanical species (*Parnassia palustris*) on this road, sometimes in road prism, grows in wet places - on seeps and in ditches; best if crews work with Pat on site. Small patch **yellow hawkweed at appx. MP 1.0**; orange & pink flagging; also

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2 = Moderate priority

Ref #	2012 Job Code	2012 Work Crew	Priority: 1A=mandatory 1=high 2=medium blank=don't treat unless EDRR	6th Field Watershed Name	Watershed County	Site Name	Road #	BMP	EMP	Total Miles	Comments
376	CMLG0910	County	1A	Upper South Fork Skokomish	Mason		2363000	0	3.5	3.5	**Decommed upper part of road needs to be monitored in 2012, and treated as nec.** We can probably have Irene or Mary monitor, and then let you know if there is anything to treat. Sensitive botanical species (*Parnassia palustris*) on this road, outside road prism in wet areas (meadows and seeps). CIAR found along upper edge of meadow upslope from road at MP 2.7 (just past creek)
330	KV0527	County	1A	Lilliwaup Creek	Mason	**Lilly TS, Unit 3**	2400000			0	Major infestation of herb Robert in this unit. **Money has been set aside for three separate treatments in 2012.** Pretty sure Pat Grover knows where this is. Due south of MP 8.0 of the 24 road (east of Big Creek CG).
514	S2F608	County	1*	Upper South Fork Skokomish	Mason		2353230	0	2.5	2.5	SEJA only past MP 1.0, lower segment bigger concern - SEJA, TAVU, CYSC, **Road scheduled for decomm. in 2012 - treat as soon as road is accessable - unknown when decomm will start.**
515	S2F608	County	1*	Upper South Fork Skokomish	Mason		2356200	0	1.3	1.3	**Road scheduled for decomm. in 2012 - treat as soon as road is accessable - decomm will start in mid-June.** Upper part of this road is in Middle Fork Satsop WS. Abundant SEJA, some CYSC. The 2356 and 2352400 roads leading to this site are also heavily infested with scotch broom.
517	S2F608	County	1*	Middle Fork Satsop	Mason		2356200	1.3	2	0.7	**Road scheduled for decomm. in 2012 - treat as soon as road is accessable - decomm will start in mid-June.**Lower part of this road is in Upper South Fork Skok WS. The 2356 and 2352400 roads leading to this site are also heavily infested with scotch broom.
540	S2F608	County	1*	Upper South Fork Skokomish	Mason		2356560	0	0.4	0.4	**Road scheduled for decomm. in 2012 - treat as soon as road is accessable - decomm will start in mid-June.** Heavy SEJA infestation found and treated here in 2010 - needs follow up.
405	S2F608	County	1*	Upper South Fork Skokomish	Mason		2360000	0	4.3	4.3	Several spurs off this road have be or will be decommed, unsure what decomm schedule is for this road, but was weedy last I was out there
577	S2F608	County	1*	Upper South Fork Skokomish	Mason		2360200	0	2.1	2.1	**Scheduled for Decomm in 2012, treat as soon as access will allow.** Contractor said difficult access - spray diffuse knapweed at MP 1.2, do not treat road beyond that. Only a few diffuse knapweed seen when treated in 2011, but needs follow up. Few herb Robert sprayed at beginning of road as well in 2010 and 2011, also needs follow up.
409	S2F608	County	1*	Upper South Fork Skokomish	Mason		2361210	0	2.7	2.7	**Road-to-trail conversion will most likely beginin 2012 - treat for weeds as soon as road is accessable (early July?).** Road to Pine Lake - walk in site. POBO and GERO found on berm at beginning of road in 2009, treated at that time. Knotweed not seen in 2010, GERO treated twice in 2010. SEJA, CIAR, HYPE, CYSC on road beyond berm, treated twice in 2010 and in 2011. Needs final treatment in 2012 before road to trail conversion.
523	S2F608	County	1	Upper West Fork Satsop River	Mason		2300000	21	32.4	11.4	At MP 21.4, small patch of yellow hawkweed, needs treatment; this is highest priority for treatment on this segment of the road; but other parts of road should be treated as time allows. 23 road rock stockpile also occurs on this segment of the road, under Ref # 585.
600	S2F608	County	1	Lower South Fork Skokomish River	Mason		2340040	0	0.7	0.7	**Ahl Over TS.** This Ref # includes all associated spurs (044) and surrounding unit.
601	S2F608	County	1	Lower South Fork Skokomish River	Mason		2340040	1.2	1.9	0.7	**Ahl Over TS.**This Ref # includes all associated spurs (046,048) and surrounding unit.

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Ref #	2012 Job Code	2012 Work Crew	Priority: 1A=mandatory 1=high 2=medium blank=don't treat unless EDRR	6th Field Watershed Name	Watershed County	Site Name	Road #	BMP	EMP	Total Miles	Comments
598	S2F608	County	1	Lower South Fork Skokomish River	Mason		2340100	0	1.4	1.4	**Ahl Over TS**. Ref. #598, also see 599, 600,601 Ahl Over TS road system (2340100) and spurs – just west of Lake West; This Ref # includes all associated spurs (150, 160)and surrounding unit, so total miles/acres is higher than what is represented here. Just west of Lake West. Herb Robert found at ~MP 0 .5 of the 2340110 spur, along edges and in roadbed. With minimal surveys, 4 English holly plants have also been found - I'll give Pat a map of where. On roads, lots of SEJA and a few RULA. Probably lots more than what I've listed here – all the surveys I've done so far (as of Jan, 2011) happened in the dead of winter.
599	S2F608	County	1	Lower South Fork Skokomish River	Mason		2340110	0	2.65	2.65	**Ahl Over TS.** This Ref # includes all associated spurs (112,116,121,122,124,126,128,130,132) and surrounding unit,so total miles/acres is higher than what is represented here. . Herb Robert found at MP 0.5 of 110 spur. English holly found at various locations, will provide map.See Ref. # 599, 600, 601
619	S2F608	County	1	Lower South Fork Skokomish River	Mason	**Boundary TS, unit 10**	2340120	0.2	0.2	0	Boundary Prairie project site, just west of Dennie Ahl seed orchard. Approx MP 0.15 - 0.25 of 2340120 road = SW edge of unit. **Small patch of hawkweed seen in unit.** Contact Robin Shoal for details. 360-956-2376
503	S2F608	County	1	Lower North Fork Skokomish River	Mason	**Dennie Ahl seed orchard**	2340140			0	Located off of 2340 road, past high steel bridge. Will need key to get in. Scotch broom is biggest concern, although many weed species are present and need to be controled.
510	S2F608	County	1	Middle Fork Satsop	Mason		2342230	0	2.2	2.2	**Scheduled for Decomm after 2012.** SEJA abundant, scattered CIVU. CYSC also an issue. Treated in 2010 and 2011, needs follow up.
513	S2F608	County	1	Lower South Fork Skokomish River	Mason		2351160	0	1.9	1.9	**Scheduled for Decomm after 2012.** Abundant SEJA, and CIAR. Treated in 2010 and 2011, needs follow up.
575	S2F608	County	1	Lower South Fork Skokomish River	Mason		2352360	0	0.47	0.47	**Scheduled for Decomm after 2012.**Treated in 2010 and 2011; SEJA needs follow up.
379	S2F608	County	1	Upper South Fork Skokomish	Mason		2355000	0	6.6	6.6	GERO at MP 5.6. Look for orange flagging around trunk of large alder on east side of road. Many other weed species all along this road that also need treatment.
388	S2F608	County	1	Upper South Fork Skokomish	Mason		2355100	0	0.7	0.7	Converted to trail in 2008. Pat Grover requested re-treatment
699	S2F608	County	1	Upper West Fork Satsop River	Mason		2364000	0	8.1	8.1	Hawkweed found and treated in 2011 MP 2.1 - 2.3. Also SEJA, other weeds along road that need treatment.
626	S2F608	County	1	Upper South Fork Skokomish	Mason		2364100	0	2.4	2.4	Spotted knapweed found between 130 and 150 spurs in 2010.
524	S2F608	County	1	Middle Fork Satsop	Mason		2365000	1.6	4	2.4	New patch of GERO at junction of 2365 and 2365100 spur. Survey and treat rest of road as time allows.
592	S2F608	County	1	Middle Fork Satsop	Mason		2366000	2.3	12.8	10.5	Yellow hawkweed abundant along road edges near jxn with 2350 road (MP 12.0 – 12.8). Entire 2366 and associated spurs (open and closed) should be surveyed for this weed, but focus on treating known hawkweed infestation. Dispersed campground at Walters Creek bridge also has some hawkweed in it near road - treat this as well under this Ref #.
336	KV0527	County	1	Lilliwaup Creek	Mason		2400025	0	0.3	0.3	Few canes of knotweed found here, needs follow up. Old road to Mint meadow.
327	KV0527	County	1	Lilliwaup Creek	Mason	**Cushman Pit**	2400025	0.2	0.2	0	Located at MP 0.2 of the 2400025 road. CYSC biggest problem, but peavine, bull thistle, and tansy ragwort also need to be eradicated. **Do multiple treatments here**, if possible. Looked OK in 2011, but still needs work.
337	KV0527	County	1	Lilliwaup Creek	Mason		2400026	0	0.3	0.3	walk in
328	S2F608	County	1	Lilliwaup Creek	Mason	**Mint Meadow**	2400026			0	CIAR4, CYSC4, HYPE, PHAR.

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Ref #	2012 Job Code	2012 Work Crew	Priority: 1A=mandatory 1=high 2=medium blank=don't treat unless EDRR	6th Field Watershed Name	Watershed County	Site Name	Road #	BMP	EMP	Total Miles	Comments
324	S2F608	County	1	Jefferson Creek	Mason	**Jefferson Creek Pit**	2401000	3.2	3.2	0	quarry located at MP 3.2 of 2401 road. Contractor treated in 2010. They found CIVU, CYSC4, HYPE, SEJA, TAVU. Treated again in 2011, found trace amounts of weeds. Monitor and treat as necessary.
355	S2F608	County	1	Mainstem Hamma Hamma River	Mason	**Hamma Hamma Pit**	2500011	0.2	0.2	0	Located at MP 0.2 of 2500011 road, a short spur road at MP 7.0 of the 25 road. Small amounts of a wide variety of weeds here.Treated 2010 and 2011, needs follow up treatments in 2012.
429	S2F608	County	1	Mainstem Hamma Hamma River	Mason	**Hamma Hamma CG**	2500030			0	
428	S2F608	County	1	Mainstem Hamma Hamma River	Mason	**Lena CG**	2500040			0	ARMI2, CIAR4, GERO, HYPE, PHAR3, SEJA
559	CMLG0910	County	2	Upper South Fork Skokomish	Mason		2300280	0.1	1.4	1.3	Road will be closed in future, but no decomm with heavy equipment. Survey and treat as time allows.
654	S2F608	County	2	Lower North Fork Skokomish River	Mason	**Lake West**	2340000			0	knotweed and purple loosestrife. Not FS, but just a few feet over boundary.
353	S2F608	County	2	Lower South Fork Skokomish River	Mason		2340120	0	0.4	0.4	HYPE, CIVU, CIAR. Road borders the south edge of Boundary TS, unit 10. Few weeds seen in 2010 - survey and treat as time allows.
560	CMLG0910	County	2	Lower North Fork Skokomish River	Mason		2340291	0	0.5	0.5	Road will be closed in future, but no decomm with heavy equipment. Survey and treat as time allows.
536	CMLG0910	County	2	Lower South Fork Skokomish River	Mason		2340520	0	0.3	0.3	
512	S2F608	County	2	Lower South Fork Skokomish River	Mason		2342200	0	3.4	3.4	Abundant SEJA. This road segment is continuous with Ref# 511
563	CMLG0910	County	2	Lower South Fork Skokomish River	Mason		2343011	0	0.3	0.3	Road will be closed in future, but no decomm with heavy equipment. Survey and treat as time allows.
564	CMLG0910	County	2	Lower South Fork Skokomish River	Mason		2343012	0	0.3	0.3	Road will be decommed after 2012. Few weeds reported here; survey and treat as time allows.
565	CMLG0910	County	2	Lower South Fork Skokomish River	Mason		2351110	0	0.3	0.3	Road will be closed in future, but no decomm with heavy equipment. Survey and treat as time allows.
566	S2F608	County	2	Lower South Fork Skokomish River	Mason		2351120	0	1	1	**Scheduled for Decomm after 2012.** SEJA and HICA10 reported in the vicinity.
567	CMLG0910	County	2	Lower South Fork Skokomish River	Mason		2351140	0	0.27	0.27	Road will be closed in future, but no decomm with heavy equipment. Survey and treat as time allows.
568	S2F608	County	2	Lower South Fork Skokomish River	Mason		2351180	0	0.4	0.4	**Scheduled for Decomm after 2012.** Unk what weeds are here, but SEJA and HICA10 reported in the vicinity.
391	S2F608	County	2	Upper South Fork Skokomish	Mason		2353000	3.2	6	2.8	may be washouts and berms blocking sections of this road. Last I was out there (2009) parts of this road were drivable.
396	S2F608	County	2	Upper South Fork Skokomish	Mason		2353000	6	13.2	7.2	CIAR, CIVU, CYSC4, SEJA, TAVU. Access to Trail # 872.1
402	S2F608	County	2	Upper South Fork Skokomish	Mason		2353120	0	0.4	0.4	CIVU, CYSC4, HYPE, SEJA
403	CMLG0910	County	2	Upper South Fork Skokomish	Mason		2353140	0	1.4	1.4	Few weeds, but survey and treat as time allows.
552	S2F608	County	2	Upper South Fork Skokomish	Mason		2353200	0	1	1	Last time I was out here (2009) this road was drivable.
404	S2F608	County	2	Upper South Fork Skokomish	Mason		2353210	0	5.3	5.3	

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Ref #	2012 Job Code	2012 Work Crew	Priority: 1A=mandatory 1=high 2=medium blank=don't treat unless EDRR	6th Field Watershed Name	Watershed County	Site Name	Road #	BMP	EMP	Total Miles	Comments
373	CMLG0910	County	2	Upper South Fork Skokomish	Mason		2354000	1.8	6.5	4.7	Road decommed in 2010. Large, dense infestation of Scotch broom on lower portions of road (~MP 2.0 - 4.5). Washout at beginning of road segment, will have to walk to get in. Treat as time and access allows; rock pit near beginning of this road (Ref #369) is much higher priority
632	S2F608	County	2	Upper South Fork Skokomish	Mason		2356000	6.6	9.6	3	Lots of SEJA seen in 2010. Other weeds also present and need treatment.
578	S2F608	County	2	Upper South Fork Skokomish	Mason		2361100	0	0.6	0.6	
408	S2F608	County	2	Upper South Fork Skokomish	Mason		2361200	0	2.6	2.6	Road decommed from MP 0.7 - 2.6 in 2011. Treat MP 0 - 0.7 (which is still drivable) as time allows.
393	CMLG0910	County	2	Upper South Fork Skokomish	Mason		2361800	0	0.4	0.4	Unsure what's out here. Survey and treat as time allows.
581	S2F608	County	2	Upper South Fork Skokomish	Mason		2364110	0	0.4	0.4	**Decommed in 2011, survey and treat only as time allows.** SEJA was biggest problem, esp near end of road. Treated in 2010 and 2011; will need monitoring in the future.
582	S2F608	County	2	Upper South Fork Skokomish	Mason		2364130	0	0.4	0.4	**Decommed in 2011, survey and treat only as time allows.** SEJA was biggest problem, esp near end of road. Treated in 2010 and 2011; will need monitoring in the future.
583	S2F608	County	2	Upper South Fork Skokomish	Mason		2364150	0	2.1	2.1	**Decommed in 2011, survey and treat only as time allows.** SEJA was biggest problem, but not as bad as the 110 and 130 spurs.Treated in 2010 and 2011, will need monitoring in the future.
584	S2F608	County	2	Upper South Fork Skokomish	Mason		2364200	0	0.4	0.4	**Decommed in 2011, survey and treat only as time allows.**
333	S2F608	County	2	Lilliwaup Creek	Mason		2400000	0	8.8	8.8	ROW questions-not all on FS land;
361	S2F608	County	2	Middle North Fork Skokomish River	Mason		2400000	8.8	14.5	5.7	CIAR, CIVU, CYSC, HYPE, SEJA, PHAR, TAVU. Pat says CEJA site also. Goes to Mt Rose TH and Bear Gulch Picnic Area.
363	S2F608	County	2	Middle North Fork Skokomish River	Mason	**Big Creek CG**	2400031			0	Last I was there (2009), not very weedy. Survey and treat as time allows. Big Creek Well. Access to Trail # 877
686	S2F608	County	2	Mainstem Hamma Hamma River	Mason		2401000	0	0.8	0.8	Not on FS land - ROW issues? In 2011 this was priority 2; County didn't get done in 2011; should be high priority in 2012
477	S2F608	County	2	Jefferson Creek	Mason		2401000	0.8	12.1	11.3	Lower part of road (below MP 7.0) treated by contractors in 2010 - needs follow up. Upper part of road needs to be looked at and treated as appropriate.
681	S2F608	County	2	Jefferson Creek	Mason		2401013	0	0.3	0.3	Don't know what's here. Survey and treat as time allows.
680	S2F608	County	2	Jefferson Creek	Mason		2401100	0	2.62	2.62	Don't know what's here. Survey and treat as time allows.
682	S2F608	County	2	Jefferson Creek	Mason		2401112	0	1.64	1.64	Don't know what's here. Survey and treat as time allows.
683	S2F608	County	2	Jefferson Creek	Mason		2401113	0	1	1	Don't know what's here. Survey and treat as time allows.
684	S2F608	County	2	Jefferson Creek	Mason		2401114	0	0.5	0.5	Don't know what's here. Survey and treat as time allows.
685	S2F608	County	2	Jefferson Creek	Mason		2401120	0	0.3	0.3	Don't know what's here. Survey and treat as time allows.
331	S2F608	County	2	Lilliwaup Creek	Mason		2419000	0	1.4	1.4	CIVU, SEJA, CIVU, CYSC
365	S2F608	County	2	Middle North Fork Skokomish River	Mason		2419000	1.4	9.8	8.4	Lots of peavine and SEJA. Also CIAR, CIVU, CYSC, HYPE. Access to Mt Ellinor and Mt Washington THs
465	S2F608	County	2	Middle North Fork Skokomish River	Mason		2419012	0	0.3	0.3	
368	S2F608	County	2	Middle North Fork Skokomish River	Mason		2419014	0	1	1	CIAR, CIVU, CYSC Access to Ellinor Shortcuts TH
338	S2F608	County	2	Lilliwaup Creek	Mason		2441000	0	2.7	2.7	SEJA. ROW question? CESTM, CIVU, CYSC4,LALA4, SEJA
478	S2F608	County	2	Jefferson Creek	Mason		2441000	2.8	7.4	4.6	
325	S2F608	County	2	Jefferson Creek	Mason		2441200	0	2.5	2.5	CEBI2 at MP 0 - 0.4; treated in 2008 and 2010. Needs follow up. CESTM, SEJA

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366	S2F608	County	2	Middle North Fork Skokomish River	Mason		2451000	0	4.9	4.9	2011 FACTS form says CESTM and GERO treated here.. Part of this goes through ONP. Parts are difficult to access; treat as much as time and access will allow - lots of weeds here. acording to contractor, and herb Robert reported in 2009 "just over causeway".
359	S2F608	County	2	Mainstem Hamma Hamma River	Mason		2480000	0	1.5	1.5	CYSC, SEJA, abundant GERO mostly outside of road prism;
357	S2F608	County	2	Mainstem Hamma Hamma River	Mason		2500000	2.8	13.5	10.7	CIAR, DACA6, GERO, CIVU, CYSC, SEJA, LALA4, HYPE. . Database also shows knotweed at MP 7.3 (between 011 spur and Lena Cr CG) but this doesn't seem right. MP 2.6 jct w/ 2572 rd. to MP 4.9 (FS boundry). Or to MP 10.0 to tie into wherewhere was treated in 2011; mostly SCSC4
351				Lower South Fork Skokomish River	Mason		2300130	0	0.6	0.6	Decommed in 2008; will need monitoring.
352				Lower South Fork Skokomish River	Mason		2300150	0	0.8	0.8	Decommed in 2008; will need monitoring.
509				Upper South Fork Skokomish	Mason		2300340	0	1.6	1.6	**Decommed in 2011.** SEJA, CYSC, HYPE, small patch of Himylayan blackberry present before decomm, but treated in 2010 and 2011. Needs to be monitored in future (starting in 2013).
530				Upper South Fork Skokomish	Mason		2300350	0	0.4	0.4	Decommed in 2011, will need monitoring in the future.
531				Upper South Fork Skokomish	Mason		2300380	0	2	2	Decommed in 2011, will need monitoring in the future.
420				Lower South Fork Skokomish River	Mason		2340200	0.5	1.2	0.7	
418				Lower North Fork Skokomish River	Mason		2340200	1.2	4.5	3.3	
489				Lower North Fork Skokomish River	Mason		2340200	4.5	5.7	1.2	
421				Lower South Fork Skokomish River	Mason		2340210	0	0.5	0.5	
490				Lower North Fork Skokomish River	Mason		2340250	0	1.5	1.5	
532				Upper South Fork Skokomish	Mason		2340290	0	1.7	1.7	Road decommed in 2010.
551				Lower North Fork Skokomish	Mason		2340360	0	0.5	0.5	
534				Upper South Fork Skokomish	Mason		2340361	0	0.2	0.2	Road decommed in 2010.
535				Upper South Fork Skokomish	Mason		2340362	0	0.1	0.1	Road decommed in 2010.
370				Upper South Fork Skokomish	Mason		2340430	0	1.2	1.2	Decomm in 2009.
371				Upper South Fork Skokomish	Mason		2340433	0	0.15	0.15	Decomm in 2009.
372				Upper South Fork Skokomish	Mason		2340437	0	0.15	0.15	Decomm in 2009.
569				Lower South Fork Skokomish River	Mason		2351300	0	0.47	0.47	Treated in 2010; very few weeds. Decomm after 2012.
570				Lower South Fork Skokomish River	Mason		2351500	0	0.13	0.13	Treated in 2010; very few weeds. Decomm after 2012.
349				Lower South Fork Skokomish River	Mason		2351510	0	0.4	0.4	Accesses trail to Flat Lake? Treated in 2010; very few weeds. Will be decommed after 2012.

APPENDIX B
2012 ACCOMPLISHMENTS

Ref #	Retreat in 2013?	2012 Priority	6th Field Watershed Name	2012 Site Name	Road #	Acres Examined for Weeds	Acres Treated	Herbicide Used	Herbicide Amount (oz)	Date	Species Treated	Comments
324		1	Jefferson Creek	Jefferson Creek Pit	2401	1.2	1.2	Element 3A	1	9/11/2012	CIVU, VETH, CYSC4	
327	2	1	Lilliwaup Creek	Cushman Pit	2400025	4	4	Element 3A	15	7/5/2012	CIVU, HYPE, LEVU, LALA4, SEJA, CYSC4	
328	1	1	Lilliwaup Creek	Mint Meadow	2400026	9	4	Element 3A	42	7/10/2012	HYPE, CIAR4, CIVU, SEJA	
328	1	1	Lilliwaup Creek	Mint Meadow	2400026	7	5	Element 3A	18	8/15/2012	HYPE, CIV4, SEJA, CIAR	
330	1	1A	Lilliwaup Creek	Lilly TS, #3	2400	0.5	0.5	Element 3A	18	8/16/2012	GERO	
330	1	1A	Lilliwaup Creek	Lilly TS, #3	2400	0.5	0.5	Element 3A	12	9/6/2012	GERO	
339	2	1A	Lower North Fork Skok		2340	13.82	13.82	N/A	N/A	6/12/2012	CYSC4, SEJA	
339	1	1A	Lower North Fork Skok		2340	2	2	Element 3A	32	8/3/2012	GERO, CIAR4	
339	1	1A	Lower North Fork Skok		2340	0.25	0.25	Element 3A	9	9/5/2012	GERO, CYSC4, CIVU, SEJA	GERO population extends up Green Diamond spur road to the east.
342	1	1A	Lower South Fork Skok		2300200	0.5	0.5	Element 3A	6.5	7/27/2012	GERO, CIAR4	road. The site goes 10-30' off the road in some areas.
342	1	1A	Lower South Fork Skok		2300200	4.6	4.6	Element 3A	18	7/31/2012	GERO, SEJA, CIVU, CIAR4	
343	2	1A	Lower South Fork Skok		2340	8.24	8.24	N/A	N/A	6/12/2012	CYSC4	
343	1	1A	Lower South Fork Skok	Highsteel Bridge		0.034	0.034	N/A	N/A	7/3/2012	GERO	
343	1	1A	Lower South Fork Skok		2340	0.2	0.2	Element 3A	16	8/3/2012	GERO, SEJA, CIVU, CIAR4	
344	2	1A	Lower South Fork Skok		2350	17.5	4	N/A	N/A	6/11/2012	CYSC4	
344	1	1A	Lower South Fork Skok		2350	1	1	Element 3A	10	6/20/2012	HICA10, SEJA, CYSC4, GERO	
344	1	1A	Lower South Fork Skok		2350	2.6	2.6	Element 3A	11	8/31/2012	SEJA, CIAR4, CIVU, LAGA2, GERO, CYSC4	
344	1	1A	Lower South Fork Skok		2350	0.6	0.6	Element 3A	6.5	8/7/2012	SEJA, GERO, CIAR4	
348	2	1A	Lower South Fork Skok		2300	18.67	18.67	N/A	N/A	6/12/2012	CYSC4	
348	1	1A	Lower South Fork Skok	Old Fir Creek Guard Station		1.25	1.25	N/A	N/A	7/3/2012	CYSC4, GERO, SEJA, CIVU	
348	2	1A	Lower South Fork Skok		2300	4.36	4.36	N/A	N/A	6/11/2012	CYSC4, SEJA	
348	1	1A	Lower South Fork Skok		2300	3	3	Element 3A	3	7/2/2012	DACA6, HICA10, TAVU, CIVU, RUAR9	HICA10 located at N47 20.310' W123 17.483'
348	2	1A	Lower South Fork Skok		2300	2.42	2.42	Element 3A	36	7/12/2012	CYSC4, SEJA, CIVU	
348	1	1A	Lower South Fork Skok		2300	0.2	0.2	Element 3A	3	7/27/2012	GERO, HICA10, CYSC4, SEJA	GERO at the old Fir Creek Guard station
348	1	1A	Lower South Fork Skok		2300	0.3	0.3	Element 3A	4	6/20/2012	HICA10, CYSC4	
348	1	1A	Lower South Fork Skok		2300	2.3	2.3	Element 3A	12	6/21/2012	HICA10, CYSC4, SEJA, CIVU, GERO	GERO patch near MP 4.5

Ref #	Retreat in 2013?	2012 Priority	6th Field Watershed Name	2012 Site Name	Road #	Acres Examined for Weeds	Acres Treated	Herbicide Used	Herbicide Amount (oz)	Date	Species Treated	Comments
348	1	1A	Lower South Fork Skok		2300	1	1	Element 3A	8	7/24/2012	HICA10, TAVU, SEJA, CIVU, GERO, CYSC4	
348	2	1A	Lower South Fork Skok		2300	1	1	Element 3A	11.5	8/7/2012	SEJA, CYSC4, CIAR4	
355	2	1	Mainstem Hama Hama River		2500011	3	0.1	Element 3A	15	9/4/2012	SEJA, HYPE, RUAR9, ARMI2, CIAR, PHAR3	
357	1	2	Mainstem Hama Hama River		2500	0.1	0.01	Element 3A	1	9/6/2012	GERO	GERO at lena lake trailhead parking area southside
357	2		Hamma Hamma		2500	18.42	11.4	N/A	N/A	6/13/2012	CYSC4	
369	1	1A	Upper South Fork Skok	Brown Creek Quarry		2.9	2.9	Element 3A	72	6/14/2012	CYSC4, SEJA, GERO, CIAR4	Need to treat CYSC4 on rocky balds above the pit
369	1	1A	Upper South Fork Skok		2354	1	1	Element 3A	6	8/14/2012	GERO, CYSC4, SEJA, CIAR	
374		1A	Upper South Fork Skok		2361600	15.8	8	Element 3A	18	8/30/2012	SEJA, CYSC4, CIVU, CESTM	
380	2	1A	Upper South Fork Skok	Brown Creek Campground		0.7	0.7	N/A	N/A	6/12/2012	CYSC4	
380	1	1A	Upper South Fork Skok		2340543	5	2	Element 3A	7	9/5/2012	GERO, CIVU, SEJA, CIAR4, ARMI2	
381	1	1A	Upper South Fork Skok	Brown Creek Quarry	2353	0.5	0.25	Element 3A	2.5	8/28/2012	GERO, SEJA	GERO located at the end of the road on the east end of the opening
382	1	1A	Upper South Fork Skok		2340400	12.3	12.5	Element 3A	90	7/9/12-7/10/12	GERO, SEJA, CIVU, CIAR4	GERO near the 450 spur junction heavy infestation
390	1	1a	Upper South Fork Skok	Lebar Horse Campground	2353	5	0.1	N/A	N/A	9/5/2012	SEJA, GERO, HYPE, CIVU	GERO located at the disposal area of the camp ground
395		1A	Upper South Fork Skok		2300	16.5	5	N/A	N/A	6/11/2012	CYSC4	Mystery hawkweed at the 2300/2356 junction
395		1A	Upper South Fork Skok		2300	3.1	3.1	N/A	N/A	8/17/2012	SEJA	
399		1A	Upper South Fork Skok		2340	9.2	9.2	N/A	N/A	6/12/2012	CYSC4	
408		2	Upper South Fork Skok		2361200	1.5	1.5	Element 3A	13	8/31/2012	HYPE, SEJA, CYSC4, GERO	
411	1	1A	Upper South Fork Skok		2340450	2.7	2.7	Element 3A	35	7/11/2012	GERO, SEJA, CIVU, CIAR4	
411	1	1A	Upper South Fork Skok		2340450	5.3	5.3	Element 3A	45	7/9/12-7/10/12	GERO, SEJA, CIVU, CIAR4	
411	2	1A	Upper South Fork Skok		2340450	1.27	1.27	N/A	N/A	7/12/2012	SEJA	
428	1	1	Mainstem Hama Hama River	Lena CG	2500040	5.2	0.25	Element 3A	4	9/6/2012	GERO, ARMI2, HYPE, CIAR4, CIVU	GERO in campsites 4, 6, and 10
429	1	1	Mainstem Hama Hama River	Hamma Hamma CG	2500040	1.5	0.1	Element 3A	7	9/6/2012	GERO, ARMI2, HYPE, CIAR4, CIVU	GERO in campsites 6, 7, and 12
463	1	1A	Upper South Fork Skok		2353	0.5	0.5	N/A	N/A	6/4/2012	GERO	
463	1	1A	Upper South Fork Skok		2353	2.2	2.2	Element 3A	14	8/28/2012	GERO, HYPE, CIVU, SEJA, CYSC4, RUAR9	GERO at MP 2.65, 2.8, and 3.05
463	1	1A	Upper South Fork Skok		2353	0.5	0.5	Element 3A	10	9/5/2012	GERO, HYPE, CIVU, SEJA, CYSC4, RUAR9	
463	1	1A	Upper South Fork Skok		2353	1.5	1.5	Element 3A	30	8/17/2012	GERO, TAVU, CIVU, CIAR4, SEJA	

Ref #	Retreat in 2013?	2012 Priority	6th Field Watershed Name	2012 Site Name	Road #	Acres Examined for Weeds	Acres Treated	Herbicide Used	Herbicide Amount (oz)	Date	Species Treated	Comments
463	1	1A	Upper South Fork Skok		2353	3.2	3.2	Element 3A	10	9/7/2012	SEJA, CIAR4, CIVU, CYSC, RULA, GERO	GERO at the Trailhead restroom
464	1	1A	Upper South Fork Skok		2354	0.4	0.4	Element 3A	10	7/24/2012	GERO	
464	1	1A	Upper South Fork Skok		2354	0.75	0.75	N/A	N/A	6/4/2012	GERO	
464	1	1A	Upper South Fork Skok		2354	0.1	0.1	Element 3A	6	8/10/2012	GERO, SEJA	
464	1	1A	Upper South Fork Skok		2354	0.25	0.25	Element 3A	18	8/14/2012	GERO, SEJA, CIAR	
464	1	1A	Upper South Fork Skok		2354	1	1	Element 3A	8	6/14/2012	GERO, SEJA, CYSC4	
464	1	1A	Upper South Fork Skok		2354	3.3	3.3	Element 3A	14	9/10/2012	SEJA, CIVU, CYSC4, CIAR4, GERO	
477	1	2	Jefferson Creek		2401	1.2	1	Element 3A	11	9/11/2012	HISA4, SEJA, CYSC4	HISA4 needs treatment earlier in the season
503	2	1	Lower North Fork Skok	Dennie Ahl Seed Orchard		0.1	0.1	N/A	N/A	7/4/2012	CYSC4	
503	2	1	Lower North Fork Skok	Dennie Ahl Seed Orchard	2340140	1.5	1.5	Element 3A	6	7/4/2012	CYSC4, SEJA	
520		1A	Upper South Fork Skok		2361400	1	0.01	N/A	N/A	8/31/2012	SEJA	
522	1	1A	Middle Fork Satsop		2300	2	2	Element 3A	12	7/25/2012	SEJA, CIVU, HICA10	Yellow hawkweed approximately 1 mile from junction at a culvert
522	1	1A	Middle Fork Satsop		2300	5	5	Element 3A	30	8/10/2012	SEJA, HICA10, CYSC4, CIVU	
591	2	1A	Middle Fork Satsop		2350	6	0.5	N/A	N/A	6/11/2012	CYSC4	
592	1	1	Upper South Fork Skok		2366	1.7	1.7	Element 3A	9.5	6/20/2012	HACA10, SEJA, GERO CIVU	
610	1	1A	Lower South Fork Skok	Patch Borrow Site	2300	1	1	Element 3A	8.5	7/27/2012	CIVU, SEJA, CYSC4, HICA10	
699	1	1	Upper West Fork Satsop		2364	1	1	Element 3A	12	7/25/2012	HICA10, SEJA	
EDRR	1		Mainstem Hama Hama River		2500	0.25	0.25	Element 3A	N/A	9/4/2012	GERO	Dispersed Rec. Site
EDRR	2			Cushman Quarry	2400	2	2	Element 3A	3	7/5/2012	LEVU, SEJA, HYPE, CIVU	
EDRR	2		Upper South Fork Skok		2361	2.3	2.3	N/A	N/A	8/30/2012	SEJA	
TOTALS						257.784	186.984		820			

Accomplishments prior to USDA Forest Service reporting date

Ref #	Retreat in 2013	2012 Priority: 1A=highest	Project #	6th Field Watershed Name	2012 Site Name	Road #	Acres Examined	Acres Treated	Herbicide Used	Herbicide Amount (oz)	Date	Species Treated
330	1	1A	KV0527	Lilliwaup Creek	Lilly TS, Unit 3	2400	0.3	0.3	N/A	N/A	11/8/2012	N/A
339	1	1A	CMLG0910	Lower North Fork Skokomish River		2340	0.15	0.15	N/A	N/A	11/9/2012	N/A
341		1A	CMLG0910	Lower South Fork Skokomish River		2300220	3	0.5	N/A	N/A	10/10/2012	CYSC4, SEJA
342	1	1A	CMLG0910	Lower South Fork Skokomish River		2300200	0.3	0.3	N/A	N/A	10/26/2012	N/A
343	1	1A	CMLG0910	Lower South Fork Skokomish River		2340	0.1	0.1	N/A	N/A	10/26/2012	N/A
348	2	1A	CMLG0910	Lower South Fork Skokomish River		2300	0.7	0.7	Element 3A	20	10/11/2012	CYSC4, SEJA, RUAR9, TAVU
348	1	1A	CMLG0910	Lower South Fork Skokomish River		2300	0.01	0.01	N/A	N/A	10/26/2012	N/A
350		1A	CMLG0910	Lower South Fork Skokomish River		2300100	1.8	0.3	Element 3A	10	10/9/2012	CYSC4, SEJA
364	1	N/A	S2F608	Middle North Fork Skokomish River		2451	0.1	0	N/A	N/A	11/1/2012	N/A
366	1	2	S2F608	Middle North Fork Skokomish River		2400	0.1	0.1	N/A	N/A	11/1/2012	N/A
366	1	2	S2F608	Middle North Fork Skokomish River		2451	0.01	0.01	N/A	N/A	11/1/2012	N/A
380	1	1A	CMLG0910	Upper South Fork Skokomish River		2340543	0.1	0.1	N/A	N/A	10/26/2012	N/A
419	2	1A	CMLG0910	Lower South Fork Skokomish River		2300221	0.35	0.35	Element 3A	4	10/10/2012	CIVU, SEJA, CYSC4, R4LA
429	1	1A	S2F608	Mainstem Hamma Hamma River	Hamma Hamma CG	2500030	0.1	0.1	N/A	N/A	10/29/2012	N/A
463	1	1A	CMLG0910	Upper South Fork Skokomish River		2353	0.1	0.1	N/A	N/A	10/26/2012	N/A
464	1	1A	CMLG0910	Upper South Fork Skokomish River		2353	0.2	0.2	N/A	N/A	10/26/2012	N/A
598		1	S2F608	Lower South Fork Skokomish River		2340100	2.7	2	N/A	N/A	10/19/2012	SEJA, CIVU, CYSC4
599	1	1	S2F608	Lower South Fork Skokomish River		2340110	3.2	2	N/A	N/A	10/19/2012	GERO, SEJA, CIVU, CYSC4
600		1	S2F608	Lower South Fork Skokomish River		2340040	0.85	0.85	N/A	N/A	10/19/2012	SEJA, CIVU
601		1	S2F608	Lower South Fork Skokomish River		2340040	0.85	0.5	N/A	N/A	10/19/2012	SEJA, CIVU
601		1	S2F608	Lower South Fork Skokomish River		2340040	1.8	1.8	N/A	N/A	11/9/2012	ILAQ80
619		1	S2F608	Lower South Fork Skokomish River		2340120	30.4	0.01	N/A	N/A	10/10/2012	CYSC4, CIAR4, CIVU
654		2	S2F608	Lower South Fork Skokomish River		2340	3.5	0	N/A	N/A	10/10/2012	POBO10
EDRR	1	N/A	N/A	Middle North Fork Skokomish River		2451	16	0	N/A	N/A	11/1/2012	N/A
TOTALS							66.72	10.48		34		

Notes on 2012_Accomplishments_FS_Priorities table:

Reference numbers in **BOLD RED** should be considered priorities for re-treatment in 2012.

In the "Herbicide Used" column, **N/A** indicates that manual treatment was implemented

Reference #s highlighted in PINK are priority Reference # roads whose specified milepost areas were not completed.

REF #	2012 Priority	Project #	6th Field Watershed Name	2012 Site name	Road #
376	1A	CMLG0910	Upper South Fork Skokomish		2363000
504	1A	S2F608	Upper South Fork Skokomish	Pine Lake	2361210
505	1A	CMLG0910	Upper South Fork Skokomish		2356100
516	1A	CMLG0910	Middle Fork Satsop		2342231
562	1A	CMLG0910	Lower South Fork Skokomish		2342231

Priority 1A's that were not treated this season

APPENDIX C
ROCK SOURCE SURVEYS AND TREATMENT

	2012 Rock Pits Inspected/Treated				
Rock Source	**Option A Rock Source Exceeds Requirements**	**Option B Rock Source Meets Requirements**	**Option C Rock Source Meets Minimum Requirement**	**Treatment (Manual)**	**Treatment (Herbicide**
Jefferson Creek Pit					**9/11/2012**
Cushman Pit					**7/5/2012**
Lake Cushman Quarry					**7/5/2012**
Brown Creek Quarry					**6/14/2012 8/14/2012**
Hamma Hamma Pit					**9/4/2012**
Little Creek Quarry (Private)			**Site visit/consult**		
Skookum Quarry (Private)		**Inspection 09/25/2012**			

APPENDIX D
OUTREACH AND EDUCATION

Public education and awareness continued to be key elements of Mason County's Noxious Weed Control program. Participation at local events included:

MCNWCB booth at Tahuya Days, Tahuya, WA

Karen Paxson staffs the MCNWCB booth at the Taste of Hood Canal, Belfair, WA

MCNWCB staff and Mason County Master Gardeners prepare for the
Forest Festival Parade – Shelton, WA

Education and outreach efforts culminated at:

OysterFest 2012
(Over 750 festival goers visited our booth!)

APPENDIX E

Exhibit I -2012 Target Species by Treatment Type

Code	Scientific Name	Common Name	Treatment Priority
AEPO	Aegopodium podagraria	Bishop's weed, goutweed	1
BRTE	Bromus tectorum	cheatgrass	1
BUDDL2	Buddleja davidii	butterfly bush	1
CEBI2	Centaurea biebersteinii	spotted knapweed	1
CEDE5	Centaurea debeauxii	meadow knapweed	1
CEDI	Centaurea diffusa	diffuse knapweed	1
CEJA	Centaurea jacea	brownray knapweed	1
CYES	Cyperus esculentus	yellow nutsedge	1
GERO	Geranium robertianum	herb Robert, stinky Bob	1
HIAU	Hieracium aurantiacum	orange hawkweed	1
HIPR	Hieracium caespitosum	meadow (yellow) hawkweed	1
HISA4	Hieracium sabaudum	European hawkweed	1
LAGA2	Lamiastrum galeobdolon	yellow archangel	1
LIVU2	Linaria vulgaris	butter and eggs	1
LYSA2	Lythrum salicaria	purple loosestrife	1
POBO10	Polygonum bohemicum	Bohemian knotweed	1
POCU6	Polygonum cuspidatum	Japanese knotweed	1
POSA4	Polygonum sachalinense	giant knotweed	1
PORE5	Potentilla recta	sulphur cinquefoil	1
SEJA	Senecio jacobaea	tansy ragwort	1
SILA21	Silene latifolia	bladder campion	(new) 1
SYOF	Symphytum officinale	common comfrey	1
VIMA	Vinca major	bigleaf periwinkle	1
VIMI2	Vinca minor	common periwinkle	1
ARMI2	Arctium minus	lesser burrdock	1
BOOF	Borago officinalis	common borage	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
LYVU	Lysimachia vulgaris	garden yellow loosestrife	2
PHAR3	Phalaris arundinacea	reed canarygrass	2
PRLA5	Prunus laurocerasus	English laurel	2
RUDI2	Rubus discolor	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	creeping buttercup	Tolerate
TAOF	Taraxacum officinale	common dandelion	Tolerate

APPENDIX F

Noxious Weeds are non-native plants introduced to Washington State that can be highly destructive, competitive, and difficult to control. These plants invade our croplands, rangeland, forests, parks, rivers, lakes, wetlands, and estuaries causing both ecological and economical damage that affects us all. Noxious weeds can:

- Lower crop yields
- Reduce forage quality
- Destroy plant and animal habitat
- Displace native plants
- Reduce recreational opportunities (*e.g.*, fishing, hunting, swimming and hiking)
- Clog waterways
- Decrease land values
- Increase erosion and wildfire risk
- And some are toxic to humans and livestock

To help 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 is designed to:

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

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

WA State Noxious Weed Control Board
P.O. Box 42560
Olympia, WA 98504-2560
(360)-725-5764

Email: noxiousweeds@agr.wa.gov

Website:
http://www.nwcb.wa.gov

WA State Department of Agriculture
21 North First Avenue #103
Yakima, WA 98902
(509) 225-2604

Mason County
Noxious Weed Control Board
303 N. 4th Street
Shelton, WA 98584
(360)427-9670 ext. 592
Email: PatriciaG@co.mason.wa.us

Website:
http://mason.wsu.edu/Weeds/index.html

WA State Department of Ecology
Aquatic Plants
http://www.ecy.wa.gov/programs/wq/links/plants.html

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

2012 Mason County Noxious Weed List

Oriental clematis, *Clematis orientalis*, a new 2012 Class A noxious weed

Scan of a pressed oriental clematis plant sample

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.**

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 a high priority. In regions where a Class B species is already abundant, control is decided at the local level, with containment as the primary goal. **Species designated for control in Mason County are displayed in BOLD type.** ***++denotes selected***

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 or technical consultation. ***++denotes selected for control***

▫ SPECIES KNOWN, OR SUSPECTED OF OCCURRING, IN MASON COUNTY

Class A Weeds
Eradication is required

▫buffalobur	*Solanum rostratum*
common crupina	*Crupina vulgaris*
cordgrass, common	*Spartina anglica*
cordgrass, dense-flowered	*Spartina densiflora*
cordgrass, saltmeadow	*Spartina patens*
cordgrass, smooth	*Spartina alterniflora*
dyer's woad	*Isatis tinctoria*
eggleaf spurge	*Euphorbia oblongata*
false-brome	*Brachypodium sylvaticum*
floating primrose-willow	*Ludwigia peploides*
flowering rush	*Butomus umbellatus*
garlic mustard	*Alliaria petiolata*
▫giant hogweed	*Heracleum mantegazzianum*
goatsrue	*Galega officinalis*
▫hawkweed, European	*Hieracium sabaudum*
▫hawkweed, yellowdevil	*Hieracium floribundum*
hydrilla	*Hydrilla verticillata*
johnsongrass	*Sorghum halepense*
▫knapweed, bighead	*Centaurea macrocephala*
knapweed, Vochin	*Centaurea nigrescens*
kudzu	*Pueraria montana* var. *lobata*
meadow clary	*Salvia pratensis*
oriental clematis	*Clematis orientalis*
purple starthistle	*Centaurea calcitrapa*
reed sweetgrass	*Glyceria maxima*
ricefield bulrush	*Schoenoplectus mucronatus*
▫sage, clary	*Salvia sclarea*
sage, Mediterranean	*Salvia aethiopis*
shiny geranium	*Geranium lucidum*
silverleaf nightshade	*Solanum elaeagnifolium*
▫Spanish broom	*Spartium junceum*
spurge flax	*Thymelaea passerina*
Syrian beancaper	*Zygophyllum fabago*
Texas blueweed	*Helianthus ciliaris*
thistle, Italian	*Carduus pycnocephalus*
thistle, milk	*Silybum marianum*
thistle, slenderflower	*Carduus tenuiflorus*
variable-leaf milfoil	*Myriophyllum heterophyllum*
velvetleaf	*Abutilon theophrasti*
wild four-o'clock	*Mirabilis nyctaginea*

Class B Weeds

Austrian fieldcress	***Rorippa austriaca***
blackgrass	***Alopecurus myosuroides***
▫blueweed	***Echium vulgare***
▫Brazilian elodea	***Egeria densa***
bugloss, annual	***Anchusa arvensis***
bugloss, common	***Anchusa officinalis***
▫butterflybush	*Buddleja davidii*
camelthorn	***Alhagi maurorum***
▫common catsear	*Hypochaeris radicata*
▫common fennel	*Foeniculum vulgare*
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 willowherb	***Epilobium hirsutum***
hawkweed oxtongue	***Picris hieracioides***
hawkweed, mouseear	***Hieracium pilosella***
▫++hawkweed, orange	*Hieracium aurantiacum*
hawkweed, polar	***Hieracium atratum***
hawkweed, queen-devil	***Hieracium glomeratum***
hawkweed, smooth	***Hieracium laevigatum***
▫hawkweed, yellow	***Hieracium caespitosum***
▫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 jacea x nigra***
knapweed, Russian	***Acroptilon repens***
▫knapweed, spotted	***Centaurea stoebe***
▫knotweed, Bohemian	*Polygonum x bohemicum*
▫knotweed, giant	*Polygonum sachalinense*
▫++knotweed, Himalayan	*Polygonum polystachyum*
▫knotweed, Japanese	*Polygonum cuspidatum*
kochia	***Kochia scoparia***
lawnweed	***Soliva sessilis***
lepyrodiclis	***Lepyrodiclis holosteoides***
longspine sandbur	***Cenchrus longispinus***
loosestrife, garden	***Lysimachia vulgaris***
▫loosestrife, purple	***Lythrum salicaria***
loosestrife, wand	***Lythrum virgatum***
▫oxeye daisy	*Leucanthemum vulgare*
parrotfeather	***Myriophyllum aquaticum***
perennial pepperweed	***Lepidium latifolium***
▫perennial sowthistle	***Sonchus arvensis* ssp. *arvensis***
▫++poison-hemlock	*Conium maculatum*
▫policeman's helmet	***Impatiens glandulifera***
puncturevine	*Tribulus terrestris*
rush skeletonweed	***Chondrilla juncea***
saltcedar	***Tamarix ramosissima***
▫Scotch broom	*Cytisus scoparius*
▫spurge laurel	***Daphne laureola***
▫spurge, leafy	***Euphorbia esula***
spurge, myrtle	*Euphorbia myrsinites*
▫sulfur cinquefoil	***Potentilla recta***
swainsonpea	***Sphaerophysa salsula***
▫++tansy ragwort	*Senecio jacobea*
thistle, musk	***Carduus nutans***
thistle, plumeless	***Carduus acanthoides***
thistle, Scotch	***Onopordum acanthium***
water primrose	***Ludwigia hexapetala***
white bryony	***Bryonia alba***
▫wild carrot	*Daucus carota*
▫wild chervil	***Anthriscus sylvestris***
▫yellow archangel	*Lamiastrum galeobdolon*
yellow floatingheart	***Nymphoides peltata***
▫yellow nutsedge	***Cyperus esculentus***
yellow starthistle	***Centaurea solstitialis***

Class C Weeds

absinth wormwood	*Artemisia absinthium*
babysbreath	*Gypsophila paniculata*
black henbane	*Hyoscyamus niger*
cereal rye	*Secale cereale*
▫common groundsel	*Senecio vulgaris*
▫common St. Johnswort	*Hypericum perforatum*
▫common tansy	*Tanacetum vulgare*
curlyleaf pondweed	*Potamogeton crispus*
▫English ivy - four cultivars only	*Hedera helix* 'Baltica', 'Pittsburgh', and 'Star'; *H. hibernica* 'Hibernica'
▫evergreen blackberry	*Rubus laciniatus*
▫field bindweed	*Convolvulus arvensis*
▫fragrant waterlily	*Nymphaea odorata*
hairy whitetop	*Cardaria pubescens*
hawkweed, common	*Hieracium lachenalii*
hawkweeds, nonnative and invasive species not listed elsewhere	*Hieracium* spp.
▫Himalayan blackberry	*Rubus armeniacus*
hoary cress	*Cardaria draba*
Japanese eelgrass (on commercially managed shellfish beds only)	*Zostera japonica*
jointed goatgrass	*Aegilops cylindrica*
▫old-man's-beard	*Clematis vitalba*
▫reed canarygrass	*Phalaris arundinacea*
▫scentless mayweed	*Matricaria perforata*
smoothseed alfalfa dodder	*Cuscuta approximata*
spikeweed	*Hemizonia pungens*
spiny cocklebur	*Xanthium spinosum*
▫thistle, bull	*Cirsium vulgare*
▫thistle, Canada	*Cirsium arvense*
tree-of-heaven	*Ailanthus altissima*
▫white cockle	*Silene latifolia* ssp. *alba*
▫yellowflag iris	*Iris pseudacorus*
▫yellow toadflax	*Linaria vulgaris*

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

WA State Noxious Weed Control Board
P.O. Box 42560
Olympia, WA 98504-2560
(360)-725-5764

Email: noxiousweeds@agr.wa.gov

Website: http://www.nwcb.wa.gov

Or

WA State Department of Agriculture
21 North First Avenue #103
Yakima, WA 98902
(509) 225-2604

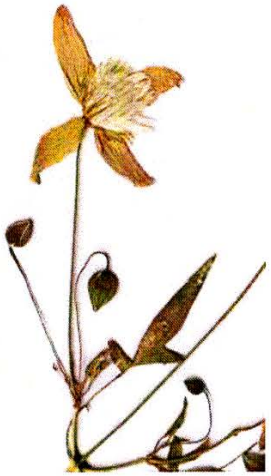
Or

Your local County
Noxious Weed Control Board

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

2012 Washington State Noxious Weed List

(arranged alphabetically by common name)



Oriental clematis, *Clematis orientalis*, a new 2012 Class A noxious weed

Scan of a pressed oriental clematis plant sample

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.**

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 a high priority. 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.

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 or technical consultation.

Class A Weeds
Eradication is required

buffalobur	*Solanum rostratum*
common crupina	*Crupina vulgaris*
cordgrass, common	*Spartina anglica*
cordgrass, dense-flowered	*Spartina densiflora*
cordgrass, saltmeadow	*Spartina patens*
cordgrass, smooth	*Spartina alterniflora*
dyer's woad	*Isatis tinctoria*
eggleaf spurge	*Euphorbia oblongata*
false-brome	*Brachypodium sylvaticum*
floating primrose-willow	*Ludwigia peploides*
flowering rush	*Butomus umbellatus*
garlic mustard	*Alliaria petiolata*
giant hogweed	*Heracleum mantegazzianum*
goatsrue	*Galega officinalis*
hawkweed, European	*Hieracium sabaudum*
hawkweed, yellowdevil	*Hieracium floribundum*
hydrilla	*Hydrilla verticillata*
johnsongrass	*Sorghum halepense*
knapweed, bighead	*Centaurea macrocephala*
knapweed, Vochin	*Centaurea nigrescens*
kudzu	*Pueraria montana var. lobata*
meadow clary	*Salvia pratensis*
oriental clematis	*Clematis orientalis*
purple starthistle	*Centaurea calcitrapa*
reed sweetgrass	*Glyceria maxima*
ricefield bulrush	*Schoenoplectus mucronatus*
sage, clary	*Salvia sclarea*
sage, Mediterranean	*Salvia aethiopis*
shiny geranium	*Geranium lucidum*
silverleaf nightshade	*Solanum elaeagnifolium*
Spanish broom	*Spartium junceum*
spurge flax	*Thymelaea passerina*
Syrian beancaper	*Zygophyllum fabago*
Texas blueweed	*Helianthus ciliaris*
thistle, Italian	*Carduus pycnocephalus*
thistle, milk	*Silybum marianum*
thistle, slenderflower	*Carduus tenuiflorus*
variable-leaf milfoil	*Myriophyllum heterophyllum*
velvetleaf	*Abutilon theophrasti*
wild four-o'clock	*Mirabilis nyctaginea*

Class B Weeds

Austrian fieldcress	*Rorippa austriaca*
blackgrass	*Alopecurus myosuroides*
blueweed	*Echium vulgare*
Brazilian elodea	*Egeria densa*
bugloss, annual	*Anchusa arvensis*
bugloss, common	*Anchusa officinalis*
butterflybush	*Buddleja davidii*
camelthorn	*Alhagi maurorum*
common catsear	*Hypochaeris radicata*
common fennel	*Foeniculum vulgare*
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 willowherb	*Epilobium hirsutum*
hawkweed oxtongue	*Picris hieracioides*
hawkweed, mouseear	*Hieracium pilosella*
hawkweed, orange	*Hieracium aurantiacum*
hawkweed, polar	*Hieracium atratum*
hawkweed, queen-devil	*Hieracium glomeratum*
hawkweed, smooth	*Hieracium laevigatum*
hawkweed, yellow	*Hieracium caespitosum*
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 jacea x nigra*
knapweed, Russian	*Acroptilon repens*
knapweed, spotted	*Centaurea stoebe*
knotweed, Bohemian	*Polygonum x bohemicum*
knotweed, giant	*Polygonum sachalinense*
knotweed, Himalayan	*Polygonum polystachyum*
knotweed, Japanese	*Polygonum cuspidatum*
kochia	*Kochia scoparia*
lawnweed	*Soliva sessilis*
lepyrodiclis	*Lepyrodiclis holosteoides*
longspine sandbur	*Cenchrus longispinus*
loosestrife, garden	*Lysimachia vulgaris*
loosestrife, purple	*Lythrum salicaria*
loosestrife, wand	*Lythrum virgatum*
oxeye daisy	*Leucanthemum vulgare*
parrotfeather	*Myriophyllum aquaticum*
perennial pepperweed	*Lepidium latifolium*
perennial sowthistle	*Sonchus arvensis ssp. arvensis*
poison-hemlock	*Conium maculatum*
policeman's helmet	*Impatiens glandulifera*
puncturevine	*Tribulus terrestris*
rush skeletonweed	*Chondrilla juncea*
saltcedar	*Tamarix ramosissima*
Scotch broom	*Cytisus scoparius*
spurge laurel	*Daphne laureola*
spurge, leafy	*Euphorbia esula*
spurge, myrtle	*Euphorbia myrsinites*
sulfur cinquefoil	*Potentilla recta*
swainsonpea	*Sphaerophysa salsula*
tansy ragwort	*Senecio jacobaea*
thistle, musk	*Carduus nutans*
thistle, plumeless	*Carduus acanthoides*
thistle, Scotch	*Onopordum acanthium*
water primrose	*Ludwigia hexapetala*
white bryony	*Bryonia alba*
wild carrot	*Daucus carota*
wild chervil	*Anthriscus sylvestris*
yellow archangel	*Lamiastrum galeobdolon*
yellow floatingheart	*Nymphoides peltata*
yellow nutsedge	*Cyperus esculentus*
yellow starthistle	*Centaurea solstitialis*

Class C Weeds

absinth wormwood	*Artemisia absinthium*
babysbreath	*Gypsophila paniculata*
black henbane	*Hyoscyamus niger*
cereal rye	*Secale cereale*
common groundsel	*Senecio vulgaris*
common St. Johnswort	*Hypericum perforatum*
common tansy	*Tanacetum vulgare*
curlyleaf pondweed	*Potamogeton crispus*
English ivy - four cultivars only	*Hedera helix* 'Baltica', 'Pittsburgh', and 'Star'; *H. hibernica* 'Hibernica'
evergreen blackberry	*Rubus laciniatus*
field bindweed	*Convolvulus arvensis*
fragrant waterlily	*Nymphaea odorata*
hairy whitetop	*Cardaria pubescens*
hawkweed, common	*Hieracium lachenalii*
hawkweeds, nonnative and invasive species not listed elsewhere	*Hieracium spp.*
Himalayan blackberry	*Rubus armeniacus*
hoary cress	*Cardaria draba*
Japanese eelgrass (on commercially managed shellfish beds only)	*Zostera japonica*
jointed goatgrass	*Aegilops cylindrica*
old-man's-beard	*Clematis vitalba*
reed canarygrass	*Phalaris arundinacea*
scentless mayweed	*Matricaria perforata*
smoothseed alfalfa dodder	*Cuscuta approximata*
spikeweed	*Hemizonia pungens*
spiny cocklebur	*Xanthium spinosum*
thistle, bull	*Cirsium vulgare*
thistle, Canada	*Cirsium arvense*
tree-of-heaven	*Ailanthus altissima*
white cockle	*Silene latifolia ssp. alba*
yellowflag iris	*Iris pseudacorus*
yellow toadflax	*Linaria vulgaris*

APPENDIX G

LEGAL NOTICE PROVIDED BY OLYMPIC NATIONAL FOREST PERSONNEL

PUBLIC NOTICE – Shelton-Mason County Journal, Shelton, WA

The Hood Canal Ranger District, Olympic National Forest, may be applying the herbicides glyphosate, triclopyr or imazapyr to noxious weeds or other invasive plant species at the following Forest Service sites in Mason County between June 11 and October 15, 2012. Applications will be conducted as planned as directed in the Final EIS-Olympic National Forest Site Specific Invasive Plant Treatment Project (2008). Notices indicating that formulations containing glyphosate, triclopyr or imazapyr will be applied, and 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 Susan Piper, Olympic National Forest, Wildlife, Botany, and Invasive Plant Program Manager at 360-956-2435, or Pat Grover, Mason County Noxious Weed Control Board Coordinator at 360-427-9670 ext. 592.

Jefferson Creek Subwatershed, including 2401 and 2441 Rds and associated spurs; Jefferson Creek rock pit; Lilliwaup Creek Subwatershed, including 24, 2419, 2441 Rds and associated spurs; Mint Meadow, Lilly Timber Sale, Cushman rock pit; Lower North Fork Skokomish Subwatershed, including Rd 2340 and associated spurs, Dennie Ahl Seed Orchard; Lower South Fork Skokomish River Subwatershed, including 23, 2340, 2342, 2343, 2350, 2351, 2352 Rds and associated spurs; Boundary Timber Sale; Mainstem Hamma Hamma River Subwatershed, including 25, 2401, 2480 Rds and associated spurs; Hamma Hamma rock pit; Lena and Hamma Hamma Campgrounds; Middle Fork Satsop Subwatershed, including 23, 2365, 2342, 2350, 2356, 2366 Rds and associated spurs; Middle North Fork Skokomish River Subwatershed, including Rds 24, 2419, 2451 and associated spurs, Big Creek Campground; Upper South Fork Skokomish Subwatershed, including 23, 2340, 2353, 2354, 2355, 2356, 2360, 2361, 2363, 2364 Rds and associated spurs; Pine Lake; Brown Creek, Brown Creek flat and V1043 quarries; Lebar Horse and Brown Creek Campgrounds; Upper West Fork Satsop River Subwatershed, including 23 and 2364 Rds and associated spurs.

ONSITE POSTING

NOTICE

The herbicide triclopyr, glyphosate, or imazapyr, will be applied to this site between June 11, 2012 and October 15, 2012 to control noxious weeds, which threaten native vegetation and habitat in this area.

Planned / Actual application date*: _____

*Actual date of application contingent upon weather conditions.

Targeted Noxious Species: Scotch broom, tansy ragwort, true tansy, Canada thistle**

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

NO USE RESTRICTIONS ARE IN PLACE

Avoid contact with treated vegetation until after it has dried.

FOR MORE INFORMATION CONTACT:

Mason County Noxious Weed Control Board
Patricia Grover, MCNWCB Coordinator
303 N 4th St.
Shelton, WA 98584
(360) 427-9670X592
or
Olympic National Forest
Susan Piper
Wildlife, Botany, and Invasive Plant Program Manager
1835 Black Lake Blvd. SW, Suite A
Olympia, WA 98512-5623
(360) 956-2435

APPENDIX H

PROJECT FORMS

FACTS example

2012 FACTS Invasive Plant Treatment Data Form - ONF and Counties

General Activity Fields

Ref #: 464

Should this area be a high priority for follow-up treatments next year? Yes / No (Circle one)
Provide reasoning in comments field below or on back page (For example: Are high priority species present? Major infestation? Sensitive area?)

Region	Forest	District (circle one)*	6th Field Watershed Name	Project # and Name	Owner	Workforce**
06	09	PAC-N HC-N PAC-S HC-S	Upper South fork Skokomish		FS	MCNWCB

Method Code	Equipment Code (circle one)	Job Code:	Comments: If road, enter requested information, including beginning & ending mileposts. If non-road, give site name. Comments box can be used to describe extent of infestation, provide recommendations, etc.	
700 Herbicide 100 Manual	711 hand sprayer 712 backpack sprayer 713 hack & squirt 716 injector 721 mobile ground sprayer 000 other	CMLG0910	Road number with BMP & EMP –OR- site name: 2354 BMP 0.2 EMP 1.9 Was entire area represented by the Ref# examined and treated for weeds? Yes / No If no, describe what part was surveyed and treated in comments box.	Comments:

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, USFS Force Account

Site/Inventory Fields

Start Date	Stop Date	Acres examined for weeds	Application Site (circle one)	Licensed Applicator: Name and License #
9/10/12	9/10/12	3.3	Road edge/ROW, Gravel/rock source, Forest, Admin Site, Campground, Trailhead, Riparian, Other	GRUER #74021
				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)	% of area examined for weeds infested with this species (lump plants together – use cover classes 1 - 9 listed below)	Comments
SEJA	3.3 acres	1	Deadheaded blooming/seeding plants
CIVU	3.3 acres	1	"
CYSC4	0.1 acres	2	
CIAR4	0.01 acres	1	
GERO	0.2 acres	1	
	acres		
	acres		

γ 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 Subunit # _____ Name: _____

Daily Log Day 1

Application Date	Time Start	Time Stop	Temp (F)	Wind Speed (MPH)	Wind Direction	Cloud Cover	Comments:
9/10/12	1400	1630	70°	2	SW	50%	

Total Volume of Mix Applied	UOM	Mix (oz products /gal water)	Dilutant	Applicators Names
7	Gal.	2 oz/ gal	Water	GROVER Cordray

Herbicide Product Name	Amount of this herbicide product that was applied	Percent Solution	Adjuvant Product Name	Amount of this adjuvant that was applied	Product Rate	UOM	Total Application Area (Acres):
Element 3A	14 oz	1.5%	Competitor	7 oz	2	Oz/Ac	3.3
	oz		Blaze on Blue	2 oz	0.6	Oz/Ac	Acres Treated within 150' of Water: ∅
	oz			oz		Oz/Ac	Bankful Acres Treated (for NPDES): ∅

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 products /gal water)	Dilutant	Applicators Names
	Gal.	oz/ gal	Water	

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

(From front page) Ref #: 464 Start Date: 9-10-12

2012 FACTS Invasive Plant Treatment Data Form – ONF and Counties modified by clb 06/10/2012

Page 2 of 2

1.7 mile, x 16'

Notes: 30z/full for Competitor

Limited treatment of abundant HYPE. Too late for most this year. If species becomes high Priority, treat May/June

Quarry Survey example

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.

Patricia A. Grover — Signature

July 27, 2012 — Date

Name of Rock Source: 2300 Patch Borrow **Ownership (circle one): Forest Service / Private**

Narrative of Pit Location (include, at minimum, road number and milepost for FS pits **OR** address/cross streets for private pits)**:**

Ref # (from project spreadsheet):

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: Patricia A. Grover - Coordinator, MCNWXB **Date of Inspection:** 7-27-12

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.

Ref. #610 - Majority of SEJA & HICA located in NW portion of pit. This area should be closed to use & access until it is found to be free of these priority 1 species.

Name of Rock Source: **Date inspected:**

Species present:

Present?	Code	Scientific Name	Common Name	Priority	% of infestation	Comments
	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		
✓	CIAR4	*Cirsium arvense*	Canada thistle	2	15	
✓	CIVU	*Cirsium vulgare*	Bull thistle	2	13	
	COAR4	*Convolvulus arvensis*	field bindweed	2		
	CYES	*Cyperus esculentus*	yellow nutsedge	1		
✓	CYSC4	*Cytisus scoparius*	Scotch broom	2	10	
✓	DACA6	*Daucus carota*	Queen Anne's lace	2	10	
	GERO	*Geranium robertianum*	herb Robert, stinky Bob	1		
	HEHE	*Hedera helix*	English ivy	2		
	HIAU	*Hieracium aurantiacum*	orange hawkweed	1		
✓	HICA10	*Hieracium caespitosum*	meadow (yellow) hawkweed	1		
	HISA4	*Hieracium sabaudum*	European hawkweed	1		
	HYPE	*Hypericum perforatum*	common St. Johnswort	2		
	ILAQ80	*Ilex aquifolium*	English holly	2		
	LAGA2	*Lamiastrum galeobdolon*	yellow archangel	1		
	LALA4	*Lathyrus latifolius*	everlasting peavine	2		
	LASY	*Lathyrus sylvestris*	flat pea	2		
	LIVU2	*Linaria vulgaris*	butter and eggs	1		
	LYPU2	*Lysimachia punctata*	large yellow loosestrife	1		
	LYVU	*Lysimachia vulgaris*	garden yellow loosestrife	1		
	LYSA2	*Lythrum salicaria*	purple loosestrife	1		
	PHAR3	*Phalaris arundinacea*	reed canarygrass	2		
	POBO10	*Polygonum x bohemicum*	Bohemian knotweed	1		
	POCU6	*Polygonum cuspidatum*	Japanese knotweed	1		
	POSA4	*Polygonum sachalinense*	giant knotweed	1		
	PORE5	*Potentilla recta*	sulphur cinquefoil	1		
	PRLA5	*Prunus laurocerasus*	English laurel	2		
	RUAR9	*Rubus armeniacus*	Himalayan blackberry	2		
	RULA	*Rubus laciniatus*	cutleaf blackberry	2		
✓	SEJA	*Senecio jacobaea*	tansy ragwort	1	20	
	SILAA3	*Silene latifolia ssp. alba*	bladder campion	1		
	SYOF	*Symphytum officinale*	common comfrey	1	30	
✓	TAVU	*Tanacetum vulgare*	common tansy	2		
	VIMA	*Vinca major*	Big leaf periwinkle	1		
	VIMI2	*Vinca minor*	Common periwinkle	1		
If other priority species are present that are not listed above, write them down in the space provided on the next page.					this column (including what's on next page) should add up to 100%	

Species present that are not listed on previous page.			
Code	**Common Name**	**% of infestation**	**Comments**
		this column (including what is on previous page) should add up to 100%	

The following species are tolerated when present. However, please indicate if they are present in the rock pit:						
✓	DIPU	Digitalis purpurea	purple foxglove	Tolerate	Do not include in % of infestation.	
✓	HYRA3	Hypochaeris radicata	hairy catsear	Tolerate		
✓	LEVU	Leucanthemum vulgare	oxeye daisy	Tolerate		
✓	LOPE80	Lotus pedunculatus	big trefoil	Tolerate		
✓	PLLA	Plantago lancoelata	narrowleaf plantain	Tolerate		
✓	RARER	Ranunculus repens var repens	creeping buttercup	Tolerate		
	TAOF	Taraxacum officinale	common dandelion	Tolerate		

DON'T FORGET TO FILL OUT THIS SECTION!

Estimated size of pit: 1.0 **acres**
(**1 acre** = 43560 ft^2, or approximately 209 ft x 209 feet. **1/10 acre** = 4356 ft^2, or 66 ft x 66 ft, or approximately 435 ft x 10 ft)

Percent of pit infested with invasive plants 30 **%**
(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?** 2011

Name of Rock Source: 2300 Patch Borrow Site

Date inspected: 07-27-12

APPENDIX I

EXAMPLE FROM MONITOR'S REPORT

Ref #	County	Road # OR Site Name	BMP	EMP	Date of Treatment	species acres monitored	application area monitored	Date Monitored	Needs Follow Up This Year?	Notes
328	Mason	Mint Meadow 2400-025			8/15/2012	5.12	5.00	9/5/2012	Yes	Second treatment this season. Spot treatment perimeter and internal corridors. Treated HYPE completely reddish brown and dead. Untreated HYPE seed ripening and some still flowering. Rumex sp treated also?
348	Mason	2300	0	1	7/12/2012	0.75	2.42	9/10/2012	No	Heavy CYSC seed bank from surrounding Green Diamond property will require ongoing treatment.
348	Mason	2300 Old Fir Cr Guard Station	3.2	3.3	7/3, 7/27/2012	5.46	0.20	9/10/2012	No	Both manual and herbicide treatment. Large grassy area with many weeds especially CYSC4. Quite a bit of CYSC4 remains back along edge of forest. Could use further treatment eventually. A few SEJA and CIVU found. Not sure of exact location of HICA10 and GERO but did not find (Flagging these small specific infestations at time of treatment would be helpful for locating during monitoring). Small patch of TAVU and PHAR here also.
699	Mason	2364	1.9	2.1	7/25/2012	1.71	1.00	9/10/2012	No	Looked at roadway at intersection of 2364 and 080 and 100 spurs (tangle of orange flagging) up to 0.1 mile beyond. Basal leaf rosettes look like hawkweed but not sure if HICA10. None blooming in any case. Lots of mature flowering HYPE and SEJA on roadway from MP 0.0 to 3.0 and possibly beyond.
348	Mason	2300	8.5	9	7/24/2012	1.71	1.00	9/10/2012	No	Looks good
428	Mason	2500-040 Lena Creek Campground			9/6/2012	0.06	0.25	9/11/2012	No	Checked campsites 4, 6 and 10 for GERO. Looks like treatment effectively killed all of this year's plants. One CIVU at Campsite #2 too soon after treatment to determine efficacy. Other treated weed species not found.
355	Mason	2500-011 Hamma Hamma Pit			9/4/2012	0.2?	?	9/11/2012	Yes	Not sure from FACTS form what was treated. Just SEJA and RUAR9? County indicated will return for further treatment. Large variety of weeds here. Two large blooming ARMI2 plants, one on road between upper and lower areas of pit and the other hidden in shrubbery on NW edge of lower area. Ornamental Rock spray cotoneaster? (*Cotoneaster horizontalis*) doing well in NW corner near entrance. Flagged.
429	Mason	2500-030 Hamma Hamma Campground			9/6/2012	1.10	0.10	9/11/2012	Yes	Checked campsites #7 and #12 for GERO. Area behind log at #7 could use another treatment this season. Small vegetative plants persist. GERO at #12 mostly gone. Just a few small vegetative plants. Overall looks a lot better than it used to. Did not see ARMI2 (possibly basal leaves between Campsites #12 and #13?
357	Mason	2500 Lena Lake Trailhead	7.8	7.8	9/6/2012	0.01	0.01	9/11/2012	No	Looks like GERO site at south side of road across from TH treated effectively. No new growth found at this time.
EDRR	Mason	2500	5?	5?	9/4/2012	0.25		9/11/2012	?	Not sure if found the same site but did find small area of mature GERO at 570 elev. Along 2500 rd where road goes right next to river about MP 5ish. Open place where cars pull off road and scramble down rocky loose bank directly rocky beach and Hamma Hamma River. GERO on this bank. Flagged orange.
374	Mason	2361-600	0	9.6	8/30/2012	9.61	8.00	9/12/2012	No	Only monitored MP 0.0 - 2.3 (drivable portion). MP 2.3 - 5.4 decommissioned. Very clean to that point (Church Cr. TH) except for HYPE. County indicates heavier infestation particularly SEJA above.

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resources for prairie and grassland managers

Backpack and Spot Treatment Calibration Guidelines

How do I make the most of my herbicide spot treatments?

Accurate timing, careful measurements of herbicide and uniform spray motions are essential to proper, economical application. Consistent spray motions can help obtain good coverage of troublesome weeds. Soaking scattered weeds rather than using regular spray motions may result in excessive rates that could injure desirable species.

How much herbicide do I put in my tank?

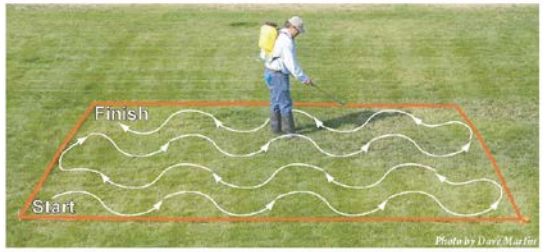
The mix amount is dependent on your spray volume and your application rate. Therefore, this question cannot be answered until we know the volume that is being applied with your particular spraying style in gallons per acre (GPA). The following step-by-step procedure will allow you to calibrate your spray volume (see answer at end).

Sprayer Calibration

Six Simple Steps

The following step-by-step method of calibrating a backpack or hand-gun sprayer involves very little math or formulas. It is based on the following principal:

One gallon = 128 fluid ounces and your calibration area to be sprayed is 1/128 of an acre, thus fluid ounces collected = gallons per acre.



1. Clean sprayer and nozzle thoroughly. Then, fill the spray tank with clean water. Spray with water only to check to see that the nozzle forms a uniform spray pattern. If the pattern is uneven, check to make sure the nozzle is clean and replace it if needed. Adjustable nozzles should be set and marked to permit repeated use of the selected spray pattern. If necessary, add a marker dye to the water to more easily see your spray pattern.

2. Measure an area 18.5 feet by 18.5 feet,which is equal to 1/128th of an acre. If possible, this should be done in the field on which you will be spraying.

3. Time the number of seconds it takes to spray the measured area uniformly with water using gentle side-to-side sweeping motion with the spray wand similar to spray painting a home or automobile. Record the number of seconds required to spray the area. During application be sure to maintain a constant sprayer pressure and cover the entire area uniformly one time.

You should repeat step 3 at least twice and use the average of the two times.

4. Spray into a container for the average time calculated in step 3. Be sure to maintain constant sprayer pressure while you spray into the container.

5. Measure the number of fluid ounces of water in the bucket. The number of fluid ounces collected from the bucket is equal to the number of gallons of water per acre the sprayer is delivering.Volume sprayed in fluid ounces = gallons of water per acre (GPA).

6. Add the proper amount of herbicide to the tank. For backpack sprayers, use Table 1 to determine how much liquid herbicide to add to each gallon of water. For large sprayer, use Table 2 to determine the amount of liquid herbicide to add to your spray tank.

Find your spray volume in gallons per acre (GPA - calculated above) and read across the tables to determine the amount of herbicide to add to each gallon of water based on the recommended herbicide application rate.

Tip *Use a syringe to measure herbicide if you are applying a low-rate product like Milestone (e.g., 5 to 7 fl oz/ac).*

1 tsp=5cc
1/2 tsp=2.5 cc
1/4 tsp=1.3 cc

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Some states require an individual be licensed if involved in the recommendation, handling or application of any pesticide. Consult your local extension office for information regarding licensing requirements. Always read and follow label directions. State restrictions on the sale and use of Transline apply. Consult the label before purchase or use for full details.

Table 1: Backpack or Other Small-volume Sprayers

The amount of herbicide you need to add to each gallon of water based on the recommended rate for the weed you are treating.

Gallons/Ac (from step 5)	Recommended Herbicide Rate/Acre				
	5 fl oz/ac	7 fl oz/ac	1 pint/ac	1 quart/ac	2 quarts/ac
20	7.5 cc/gal	10.5 cc/gal	5 tsp/gal	10 tsp/gal	3 1/4 fl oz/gal
30	5 cc/gal	7.0 cc/gal	3 tsp/gal	6 tsp/gal	2 fl oz/gal
40	3.8 cc/gal	5.3 cc/gal	2 1/3 tsp/gal	4 3/4 tsp/gal	1 2/3 fl oz/gal
50	3.0 cc/gal	4.2 cc/gal	2 tsp/gal	3 3/4 tsp/gal	1 1/4 fl oz/gal
60	2.5 cc/gal	3.5 cc/gal	1 2/3 tsp/gal	3 1/4 tsp/gal	6 1/3 tsp/gal
70	2.1 cc/gal	3.0 cc/gal	1 1/3 tsp/gal	2 3/4 tsp/gal	5 1/3 tsp/gal
80	1.9 cc/gal	2.6 cc/gal	1 1/4 tsp/gal	2 1/3 tsp/gal	4 3/4 tsp/gal
90	1.7 cc/gal	2.3 cc/gal	1 tsp/gal	2 tsp/gal	4 1/4 tsp/gal
100	1.5 cc/gal	2.1 cc/gal	1 tsp/gal	2 tsp/gal	3 3/4 tsp/gal

Liquid conversions: tsp = teaspoons; TBS = tablespoons; fl oz = fluid ounces; 1 cc = 1 ml; 3 teaspoons = 1 tablespoon;8 fluid ounces = 1 cup; 2 tablespoon = 1 fluid ounce;1 cup = 16 tablespoons

Example for Backpack Sprayers: You have completed the calibration procedure and applied 30 fluid ounces in the measured area. Therefore, your spray volume is 30 GPA. Look at Table 1 above for the amount to mix in 1 gallon of water. Assume you want to apply 5 fluid ounces of Milestone® per acre; the amount listed for your volume (GPA) and this application rate is 5 cc in each gallon of water. If you are filling a 3-gallon backpack sprayer take this amount times 3 and you would need to measure 15 cc (with a syringe) or 3 tsp of Milestone® for your 3 gallon mix. It doesn't take much.

Table 2: Larger Hand-gun Sprayers

The amount of herbicide you need to mix in 100 gallons of water based on the recommended rate for the weed you are treating.

Gallons/Ac (from step 5)	Recommended Herbicide Rate/Acre				
	5 fl oz/ac	7 fl oz/ac	1 pint/ac	1 quart/ac	2 quarts/ac
20	25.0 fl oz	35.0 fl oz	5 pints	5 quarts	10 quarts
30	16.7 fl oz	23.3 fl oz	3.3 pints	3.3 quarts	6.6 quarts
40	12.5 fl oz	17.5 fl oz	2.5 pints	2.5 quarts	5 quarts
50	10.0 fl oz	14.0 fl oz	2 pints	2 quarts	4 quarts
60	8.3 fl oz	11.7 fl oz	1.6 pints	1.6 quarts	3.2 quarts
70	7.1 fl oz	10.0 fl oz	1.4 pints	1.4 quarts	2.8 quarts
80	6.3 fl oz	8.8 fl oz	1.25 pints	1.25 quarts	2.5 quarts
90	5.6 fl oz	7.8 fl oz	1.1 pints	1.1 quarts	2.2 quarts
100	5.0 fl oz	7.0 fl oz	1 pints	1 quarts	2 quarts

Conversions: 16 fluid ounces = 1 pint; 32 fluid ounces = 1 quart; 64 fluid ounces = 2 quarts

Example for Larger Sprayers: You calibrate your sprayer and the output is 50 GPA, and your sprayer holds 100 gallons. The amount of area you can treat is 2 acres with your full spray tank. The label requires an herbicide application rate of 5 fl oz/acre for the target weed. You would add 10 fl oz of herbicide to your tank since you are treating 2 acres with each full tank mix.

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