# Olympic Peninsula
# Cooperative Noxious Weed Control

## 2003 Project Report

**Title II Participating Agreement**
**between the**
**USDA NFS Olympic National Forest**
**and the**
**Clallam County Noxious Weed Control Board**

Report compiled by:

**Clallam County Noxious Weed Control Board**
Cathy Lucero, Coordinator
Carol Dargatz
David Freed
Jacob Haverfield
Darcy Stumbaugh

November 2003

223 E. Fourth Street, Suite 15
Port Angeles, WA 98362-3015
(360) 417-2442

# Table of Contents

Report Recipients ..... 1
Acknowledgements ..... 2
Executive Summary ..... 3
2003 Data Collection Protocols ..... 4
Invasive Plant Inventory Form ..... 7
Educational Component ..... 9
Control Recommendations ..... 10
Appendix A: Roads Surveyed ..... 11
Appendix B: Weed Species Reported ..... 16
Appendix C: WCC Work Summary ..... 17
Appendix D: WCC Potential projects for 2004 ..... 18
Appendix E: Clallam Co. Sheriff's/Road Dept. Chain Gang Work Summary ..... 21
Appendix F: Orange Hawkweed Control Test Plot ..... 23
Appendix G: Roads Surveyed Maps ..... 24
Appendix H: Botanical Area Survey Summary ..... 28

# Report Recipients

Olympic National Forest:
- Dick Carlson
- Dave Craig
- Pat Grover
- Dale Hom
- Patty Krueger
- Deb McConnell
- Eduardo Olmedo
- Laura Potash
- Joan Ziegltrum

Olympic Peninsula RAC members (12)

Olympic National Park:
- Steve Acker
- Dan Campbell

Clallam County Noxious Weed Control Board members (6)
- Nina Barnes-Thomas
- Curt Beus (advisor)
- Walt Forsberg
- Fred Grant
- Dean Hurn
- Mike Jeldness

Clallam County Commissioners
- Mike Chapman
- Mike Doherty
- Steve Tharinger

Jefferson County Noxious Weed Control Board:
- Katherine Baril (advisor)
- Mike Ewing
- Mary Hedberg
- Karen Sickel
- Judi Stewart
- Jim Storey

Jefferson County Commissioners:
- Glen Huntingford
- Pat Rodgers
- Dan Titterness

Grays Harbor Noxious Weed Control Board
- Nancy Ness

Mason County Noxious Weed Control Board
- Bob Simmons

# Acknowledgements

**Clallam County Noxious Weed Control Board**
Cathy Lucero, Coordinator
(360) 417-2442

**Clallam County Sheriff's/Road Department Chain Gang**
Program Sargeant: Matt Blore
Chain Gang Officer: Richard Pitt
(360) 417-2284

**Olympic National Forest**

Pat Grover, Hood Canal District
(360) 877-5254

Deb McConnell
Pacific District
(360) 288-2525

Scott Schreier
GIS Analyst
(360) 765-2234

# Executive Summary

**Project Goal:**
The goal of this project is to stop the spread of noxious weed species, reduce existing populations, and prevent the introduction of additional exotic plants throughout Clallam and Jefferson Counties. The objective is to coordinate and standardize weed control efforts across many jurisdictional boundaries to more effectively minimize the negative impacts of noxious weeds on watershed functions, wildlife habitat, human and animal health, and recreational activities. This is a continuation of a project begun in 2002.

**Project Description:**
This project is a comprehensive program for noxious weed control on the north Olympic Peninsula. The project includes activities to survey, identify, and control noxious weeds, to coordinate action and communication between local and Federal jurisdictions, and to raise public awareness of the impacts imposed by noxious weeds.

On Federal lands, the project involves monitoring sites previously identified in the 1998 Olympic National Forest Integrated Weed Management Program Environmental Assessment, surveying and marking additional areas for noxious weed control, and making a preliminary analysis and recommendation about the feasibility of various control measures. All sites are mapped into Arcview GIS projects and entered into the Forest Service NRIS database.

This project implements control measures using the most effective mix of treatments in accordance with the Forest Service EA and State/County guidelines on State land and County right-of-ways. The focus is on areas where uncontrolled noxious weed populations on Federal, State, County, and Private land are spreading and hindering control activities elsewhere. Clallam and Jefferson Weed Boards provide the vital link to private landowners whose weeds threaten federal lands. Additional emphasis goes to controlling weeds on roads, in campgrounds, trailheads, and in gravel pits. Due to heavy use or off-site movement of potentially infested materials, these areas serve as the primary vectors of new weed invasions into wilderness areas and between various land ownerships. In addition to the Weed Board survey/control teams, the Clallam County Sheriff's/Road Department Chain Gang and Washington Conservation Corps (WCC) perform control measures.

In 2003, the project was expanded to include 7 ONF Botanical Areas. Botanical area work was funded separately and has been documented in a separate report. However, a summary of the Botanical Area work can be found in Appendix H of this report.

The project includes follow-up activities and monitoring. Agency representatives meet regularly to communicate progress and to revise project direction as necessary.

**2003 Project Summary:**

- 2 survey teams (4 people)
- 497 sites reported
- 681 miles of roads surveyed (826 acres)
- 7 Botanical Areas surveyed (24 acres) – See Botanical Areas Report Summary in Appendix H
- 804 weeds removed by the survey teams
- 88,463 weeds removed by WCC crews
- 102,748 weeds removed by the Clallam Co. Sheriff's/Road Dept. Chain Gang

**Preliminary Project Conclusions:**

- The most often reported weed species was tansy ragwort with 168 sites, followed by Scotch broom.
- No areas of ONF land were worse than others, there were just different weed species found.
- Weed problems are concentrated on roadsides.
- Meadow knapweed was found more often in 2003 than 2002 - a cause for concern. Most sites are in the North Hood Canal district (upper Quilcene).
- There were only two orange hawkweed sites found. As this species spreads quickly, these sites should be a priority for control.
- Knotweed populations will continue to increase with disturbance and flood events. Control should be a high priority.
- Plant species with limited distribution should be a high priority for control. Those species include: yellow toadflax, meadow knapweed, spotted knapweed, orange hawkweed, and borage.
- Public education and staff development should continue to be a priority.

# 2003 Data Collection Protocols

**1. Teams/Project Dates**

There were two data collection teams:

a. David Freed and Carol Dargatz: survey work was done from May 7, 2003 through September 25, 2003.
b. Darcy Stumbaugh and Jacob Haverfield: survey work was done from August 6, 2003 through October 16, 2003.

**2. Species surveyed for**

a. Bull thistle *(Cirsium vulgare)*
b. Canada thistle *(Cirsium arvense)* Note: team two (Haverfield/Stumbaugh) reported Canada thistle wherever it was found, but team one (Dargatz/Freed) only reported this species when they encountered a particularly bad infestation, or where it appeared in an area where there was none encountered along the road to that point.
c. Common tansy *(Tanecetum vulgare)*
d. English ivy *(Hedera helix)*
e. Evergreen blackberry *(Rubus laciniatus )*
a. Everlasting pea vine *(Lathyrus latifolius)*
f. Giant knotweed *(Polygonum sachalinense)*
g. Herb Robert *(Geranium robertianum)*
h. Himalayan blackberry *(Rubus discolor)*
i. Himalayan knotweed *(Polygonum polystachyum)*
j. Japanese knotweed *(Polygonum cuspidatum)*
k. Meadow knapweed *(Centaurea jacea x nigra)*
l. Orange hawkweed *(Hieracium aurantiacum)*
m. Oxeye daisy *(Leucanthemum vulgare)* Note: this weed is found on most roads in the forest. Again, this was reported by team one only where notable.
n. Purple Loosestrife *(Lythrum salicaria)*
o. Scotch broom *(Cytisus scoparius)*
p. Spotted knapweed *(Centaurea biebersteinii)*
q. Tansy ragwort *(Senecio jacobaea)*
r. Any other "odd ball" non-native species that were found

Recorded only where a particularly bad infestation was found:

a. Reed canary grass *(Phalaris arundinacea)*
b. St. Johnswort *(Hypericum perforatum)*

**3. Data reporting**

We used the "Olympic NF Invasive Plant Inventory Form" (hereafter referred to as "survey form") which we modified slightly for ease of use and so the form could be used for collecting <u>county</u> noxious weed data as well as for FS data. A copy of the survey form follows this protocol list.

a. Team one could not consistently get good GPS readings, so location was recorded using the Legal Description of Township, Range, Section, Qtr. Section, and Qtr. Qtr. Section. Team two was able to record GPS points when surveying botanical areas.
b. We used a FS-supplied Suunto compass and clinometer to read aspect and slope. Elevation was read from a FS-supplied altimeter or off the "brown line" NFS maps.
c. Site comments include distance (in miles) from the specified beginning of the road (e.g. "north end") as well as any other notable characteristics (e.g. "at turnout").
d. Distance to water was estimated visually or by use of NFS map.
e. Daubenmire Cover Class codes were used to record weed canopy cover – this was a subjective measurement.
    i. T 0 - 1%
    ii. 1 1 - 5.0%
    iii. 2 5.1 – 25.0%
    iv. 3 25.1 – 50.0%
    v. 4 50.1 – 75.0%

vi. 5 75.1 – 95.0%
vii. 6 95.1 – 100%

f. Formula used for determining gross area:

$$\frac{\text{5280 (ft/mile) x 10 feet (width surveyed) x infestation length (in miles)}}{\text{43560 (sq. feet per acre)}}$$

Then you can multiple this number by the Daubenmire Cover Class % to determine number of infested acres.

g. Digital photographs were taken at notable or unique sites, or at site where we anticipated the WCC crews might be working in 2004. These digital images are stored on the Clallam Co. computer network and sorted by FS road number. At least one photo per site should have a white-board sign in it showing date, location, and weed found.

**4. NRIS data entry:**

a. Site ID field (30 characters) contains:

| | |
|---|---|
| Year | YYYY |
| Month | MM |
| Day | DD |
| Township | TT |
| Range | RR |
| Section | SS |
| Qtr. Section | QQ |
| Road ID | XXXXXXX |
| Weed Code | XXXXXXX |

Site ID Example: 20030917241001SE2170000CIVU

b. The Road ID for trails surveyed is a "T" and the trail number. Ex: T823.
c. The Road ID for botanical areas surveyed is the name of the BA abbreviated. Ex: SFCRBA = South Fork Calawah River Botanical Area.
d. Regardless of whether a good GPS reading was available, location was entered into NRIS using the legal description of township, range, section, Qtr. section, and Qtr. Qtr. section.
e. In most cases, estimating "Infested area" did not allow for an accurate representation of the weed site because we were consistently dealing with infested areas less than $1/10^{th}$ of an acre (the minimum required in the field). Consequently, the "Infested acres" amount is an inflation of the actual weed site.

**5. Road surveying:**

a. Roads surveyed are noted on the NFS Road Inventory spreadsheet, attached.
b. Roads were, for the most part, "windshield" surveyed.
c. Trailheads, campground parking areas, rock source pits, and any other non-vehicle-accessible areas that intuitively could have a weed problem were surveyed on foot.
d. In general, 5 feet on both sides of every road was surveyed.
e. On each road surveyed, all rock sources, ERFOs, and radio towers were also surveyed, if found.

**6. Botanical Areas surveyed (see the separate Botanical Areas Protocol for more details):**

a. South Calawah River
b. Cranberry Lake
c. Pat's Prairie
d. Pine Mountain
e. 3 O'clock Ridge
f. Tyler Peak
g. Wet Weather Creek Research Natural Area

**7. Arcview plotting:**

a. Each site was plotted as a point. The ID of the point matches the record in the NRIS database.
b. Where practical, multiple sites on a road of the same species were turned into a linear polygon.
c. There is a separate theme (shape file) for each weed species.
d. Polygons were drawn on a separate layer (theme) – one layer for each species.
e. Points and polygons are joined with the database (table) from the NRIS system.

**8. Estimating WCC work for 2004:**

a. Work crew size assumed to be 4 members, plus a crew supervisor.
b. Each “job” is estimated in crew hours.
c. A work day is 10 hours.
d. A work week is 4 days.
e. Estimated time required for a job does not include travel time.

**Olympic NF/Clallam and Jefferson County Noxious Weed Control Boards**

# Invasive Plant Inventory Form

Fill out one form for each weed, and attach a map to each form. Site ID must be unique for each form.

Site ID: Region 06, Forest 09, District: (circle) 01 Hoodsport 03 Quinault 02 Quilcene 05 Soleduck

Twnshp (2): _____ Range (2): _____ Section (2): _____ Qtr. Section (2): _____ Qtr Qtr: _____ (NE, NW, SE, SW)

Initials (2): _____ Road ID (6): _____ Ownership: _____

Weed PLANTS Code (6): _____ *Common Name:*_____

Weed Class: A B+ Bs Date (MM/DD/YYYY):_____

Primary Examiner (Last, First, Middle Initial): _____

WA State County (Circle) 009 Clallam 031 Jefferson

Location at site:_____

Site Address: _____

Owner and Owner Address: _____

_____

Parcel #: _____ Site ID: _____ Database rcd#: _____

Previous Contact? _____ Contact? _____ Name:_____

Aspect (deg) _____ OR ALL Average Slope (%) ____

Elevation (ft) _____ min _____ max OR _____ average

Circle *Dominant Life Form

AL Algae, FB Forb, GR Graminoid, LC Lichen, NP Nonvascular plant, SH Woody shrub, SS Subshrub, TR Tree

| 3 Dominants | PLANTS Code | Scientific Name. |
|---|---|---|
| | _____ | _____ |
| | _____ | _____ |
| | _____ | _____ |

Site Comments (Directions, description, aerial photo # and aerial photo date, etc)_____

_____

_____

_____

_____

Circle one each for phenology, life form, and distribution of the weed.

| | | | | | |
|---|---|---|---|---|---|
| Phenology | | Grasses | | Forbs and Shrubs | |
| | G1 | Leaves Partially Developed, no heads | F1 | Vegetative, rosette, pre-flowering | |
| | G2 | Inflorescence inside the sheath | F2 | Flowering | |
| | G3 | Inflorescence partially or fully extended | F3 | Fruiting | |
| | G4 | Seeds maturing or mature | F4 | Senescent or dormant | |
| | G5 | Senescent or dormant | | | |
| | RG | Regrowth | | | |
| Life Form | AL | Algae | LC | Lichen | SS Sub-shrub |
| | FB | Forb | LI | Woody liana | TR Tree |
| | FU | Fungus | NP | Nonvascular plant | UN Unknown |
| | GR | Graminoid | SH | Woody Shrub | VI Herbaceous Vine |
| Distribution | CL | Clumpy | SE | Scattered even | |
| | SP | Scattered patchy | LI | Linear | |

*Infested Area (acres) _____ Gross area (ac) _____

(Infested area is REQUIRED. Minimum size is 0.1 acre. Use Gross Area ONLY when portions of polygon are uninfested. Minimum Gross Area ≥ 1 acre. Gross Area x % of land occupied by weeds = Infested Area. )

*Weed Canopy Cover of Infested Area

| Daubenmire Cover Class | | | | OR | Estimated percent cover _____ | | |
|---|---|---|---|---|---|---|---|
| T | 0 – 1% | 2 | 5.1 – 25% | 4 | 50.1 – 75.0% | 6 | 95.1 – 100% |
| 1 | 1 – 5.0 % | 3 | 25.1 – 50.0% | 5 | 75.1 – 95.0% | | |

Horizontal Distance to Water (ft) _____ Vertical Distance to Water (ft) _____

as crow flies, not slope distance

| Associated Species | PLANTS Code | Scientific Name |
|---|---|---|
| | _____ | _____ |
| | _____ | _____ |
| | _____ | _____ |

Comments: _____

_____

_____ _____

_____

Map: **North**

## Educational Component

Laminated "Weed Watch" posters have been created to educate the public regarding noxious weeds. These are being placed in campgrounds, at trailheads, and at ranger stations.

# Noxious Weed WATCH!

Help keep our forests clean of invasive, non-native weeds!

### TANSY RAGWORT

*(Senecio jacobaea)*

- Grows one to four feet tall
- Has bright yellow flowers with 13 petals (usually)

- During the first year of growth, it is a rosette on the ground

- The second year it produces a tall stalk, flowers and seeds, then dies
- Seen along roads, at trailheads, and in parking areas

**Why is Tansy Ragwort a problem?**

- Tansy Ragwort is invasive and will establish itself easily in disturbed areas
- It is toxic to livestock
- A single plant can produce up to 200,000 seeds!

**What can you do?**

- You can pull out Tansy Ragwort plants. If they have not bloomed, just throw them back on the ground. If they are blooming, carry them out.
- For larger patches make a note of where they are, and pass that information on to a Forest Ranger or your County Noxious Weed Control Office.

Prepared in cooperation with the USDA Forest Service

Revised 4/2003

For more information, call (360) 417-2442

# Control Recommendations

## By Weed Species

| Common Name | Botanical Name | Preliminary control recommendation |
|---|---|---|
| Bindweed | *Convulvulus arvensis* | |
| Borage | *Borago* | Treat cut stump with glyphosate in late spring |
| Bull thistle | *Cirsium vulgare* | Manual removal |
| Canada thistle | *Cirsium arvense* | Glyphosate on new growth rosettes |
| Common burdock | *Arctium minus* | Manual removal |
| Common tansy | *Tanacetum vulgare* | Manual removal |
| English holly | *Ilex aquifolium* | Manual removal |
| English ivy | *Hedera helix* | Manual removal |
| Evergreen blackberry | *Rubus laciniatus* | Treat cut stump with glyphosate in late summer after fruit has formed |
| Everlasting peavine | *Lathrus latifolius* | |
| Giant knotweed | *Polygonum sachalinense* | Injection with glyphosate |
| Herb Robert | *Geranium robertianum* | Manual removal |
| Himalayan blackberry | *Rubus discolor* | Treat cut stump with glyphosate in late summer after fruit has formed |
| Japanese knotweed | *Polygonum cuspidatum* | Injection with glyphosate |
| Meadow knapweed | *Centaurea jacea x nigra* | Herbicide foliar spray |
| Orange hawkweed | *Hieracium aurantiacum* | |
| Oxeye daisy | *Leucanthemum vulgare* | Not feasible to attempt control |
| Purple loosestrife | *Lythrum salicaria* | |
| Reed canarygrass | *Phalaris arundinacea* | |
| Rockspray cotoneaster | *Cotoneaster horizontalis* | Manual removal |
| Scotch broom | *Cytisus scoparius* | Manual removal with weed wrenches |
| Spotted knapweed | *Centaurea biebersteinii* | Manual removal before plants go to seed |
| St. Johnswort | *Hypericum perforatum* | Not feasible to attempt control |
| Tansy ragwort | *Senecio jacobaea* | Manual removal before in full bloom (after tansy is in full bloom, flower heads need to be removed and bagged up) |
| Wild Carrot | *Daucus carota* | Manual removal |
| Yellow toadflax | *Linaria vulgaris* | Manual removal |

# Appendix A: Roads Surveyed

| Road | Road Clean? | Total miles surveyed | Total acres surveyed | Total miles treated* | Total acres treated* | District | County |
|---|---|---|---|---|---|---|---|
| 2100000 | | 8.24 | 9.99 | | | Quinault | Jefferson |
| 2120000 | | 1.2 | 1.45 | | | Quinault | Mason |
| 2140000 | | 12 | 14.55 | | | Quinault | Jefferson |
| 2160000 | | 5.8 | 7.03 | | | Quinault | Jefferson |
| 2170000 | | 8.24 | 9.99 | | | Quinault | Jefferson |
| 2170020 | | 4.28 | 5.19 | | | Quinault | Jefferson |
| 2180000 | | 10.1 | 12.24 | | | Quinault | Jefferson |
| 2190000 | | 9.82 | 11.90 | | | Quinault | Jefferson |
| 2190170 | | 1.59 | 1.93 | | | Quinault | Jefferson |
| 2190240 | | 0.3 | 0.36 | | | Quinault | Jefferson |
| 2300000 | | 12 | 14.55 | | | Hoodsport | Mason |
| 2340000 | | 2.3 | 2.79 | | | Hoodsport | Mason |
| 2340080 | | 0.7 | 0.85 | | | Hoodsport | Mason |
| 2340088 | | 0.96 | 1.16 | | | Hoodsport | Mason |
| 2353100 | | 0.6 | 0.73 | | | Hoodsport | Mason |
| 2353140 | | 1.5 | 1.82 | | | Hoodsport | Mason |
| 2361000 | | 5.9 | 7.15 | | | Hoodsport | Mason |
| 2361200 | | 0.67 | 0.81 | | | Hoodsport | Mason |
| 2361210 | | 2.76 | 3.35 | | | Hoodsport | Mason |
| 2361700 | | 0.69 | 0.84 | | | Hoodsport | Mason |
| 2401000 | | 12.1 | 14.67 | | | Hoodsport | Mason |
| 2401012 | | 0.15 | 0.18 | | | Hoodsport | Mason |
| 2401033 | | 1.08 | 1.31 | | | Hoodsport | Mason |
| 2401100 | | 0.12 | 0.15 | | | Hoodsport | Mason |
| 2419000 | | 10.18 | 12.34 | | | Hoodsport | Mason |
| 2419014 | | 1 | 1.21 | | | Hoodsport | Mason |
| 2421000 | | 4.54 | 5.50 | | | Hoodsport | Mason |
| 2441000 | | 3.93 | 4.76 | | | Hoodsport | Mason |
| 2441200 | | 0.9 | 1.09 | | | Hoodsport | Mason |
| 2451000 | | 6.65 | 8.06 | | | Hoodsport | Mason |
| 2451017 | | 0.3 | 0.36 | | | Hoodsport | Mason |
| 2451020 | | 0.4 | 0.48 | | | Hoodsport | Mason |
| 2451100 | | 6.2 | 7.52 | | | Hoodsport | Mason |
| 2451115 | | 0.32 | 0.39 | | | Hoodsport | Mason |
| 2464000 | | 6.7 | 8.12 | | | Hoodsport | Mason |
| 2469000 | | 6.16 | 7.47 | | | Hoodsport | Mason |
| 2469022 | | 1.22 | 1.48 | | | Hoodsport | Mason |
| 2471000 | | 3.81 | 4.62 | | | Hoodsport | Mason |
| 2471013 | | 2.6 | 3.15 | | | Hoodsport | Mason |
| 2471020 | | 0.88 | 1.07 | | | Hoodsport | Mason |
| 2471022 | | 0.42 | 0.51 | | | Hoodsport | Mason |
| 2480000 | | 7.72 | 9.36 | | | Hoodsport | Mason |
| 2500000 | | 13.86 | 16.80 | 2.50 | 3.03 | Hoodsport | Mason |
| 2510000 | | 6.6 | 8.00 | 0.10 | 0.12 | Hoodsport | Mason |
| 2527000 | | 1.2 | 1.45 | | | Quinault | Jefferson |
| 2610200 | | 1.6 | 1.94 | 0.10 | 0.12 | Quilcene | Jefferson |
| 2620000 | | 11.62 | 14.08 | 4.00 | 4.85 | Quilcene | Jefferson |

| Road | Road Clean? | Total miles surveyed | Total acres surveyed | Total miles treated* | Total acres treated* | District | County |
|---|---|---|---|---|---|---|---|
| 2620030 | | 9.7 | 11.76 | | | Quilcene | Jefferson |
| 2620043 | | 0.7 | 0.85 | | | Quilcene | Jefferson |
| 2650000 | | 7.5 | 9.09 | 0.10 | 0.12 | Quilcene | Jefferson |
| 2650090 | | 1.68 | 2.04 | | | Quilcene | Jefferson |
| 2700000 | | 9.6 | 11.64 | | | Quilcene | Jefferson |
| 2700090 | | 1.99 | 2.41 | | | Quilcene | Jefferson |
| 2700100 | | 4.6 | 5.58 | | | Quilcene | Jefferson |
| 2700140 | | 1.2 | 1.45 | | | Quilcene | Jefferson |
| 2730000 | | 3.8 | 4.61 | 4.40 | 5.33 | Quilcene | Jefferson |
| 2730011 | | 0.9 | 1.09 | 0.10 | 0.12 | Quilcene | Jefferson |
| 2740000 | | 6.85 | 8.30 | | | Quilcene | Jefferson |
| 2740060 | | 5.8 | 7.03 | | | Quilcene | Jefferson |
| 2740070 | | 3.05 | 3.70 | | | Quilcene | Jefferson |
| 2740072 | | 0.4 | 0.48 | | | Quilcene | Jefferson |
| 2740075 | | 0.47 | 0.57 | | | Quilcene | Jefferson |
| 2750000 | | 4.9 | 5.94 | | | Quilcene | Jefferson |
| 2750020 | | 1.5 | 1.82 | | | Quilcene | Jefferson |
| 2800000 | | 14.5 | 17.58 | 14.50 | 17.58 | Quilcene | Jefferson |
| 2800010 | | 1.1 | 1.33 | | | Quilcene | Clallam |
| 2800060 | | 1.1 | 1.33 | | | Quilcene | Clallam |
| 2800145 | | 0.3 | 0.36 | | | Quilcene | Clallam |
| 2800210 | | 0.4 | 0.48 | | | Quilcene | Clallam |
| 2800220 | | 1.2 | 1.45 | | | Quilcene | Clallam |
| 2800240 | | 0.8 | 0.97 | | | Quilcene | Clallam |
| 2800250 | | 0.3 | 0.36 | | | Quilcene | Clallam |
| 2800260 | | 1.2 | 1.45 | | | Quilcene | Clallam |
| 2800262 | | 0.6 | 0.73 | | | Quilcene | Clallam |
| 2810000 | | 4.01 | 4.86 | 4.01 | 4.86 | Quilcene | Clallam |
| 2810070 | | 0.61 | 0.74 | | | Quilcene | Clallam |
| 2820000 | | 4 | 4.85 | | | Quilcene | Clallam |
| 2830000 | | 4.95 | 6.00 | | | Quilcene | Clallam |
| 2830030 | | 1.8 | 2.18 | | | Quilcene | Clallam |
| 2830032 | | 1 | 1.21 | | | Quilcene | Clallam |
| 2830034 | | 0.33 | 0.40 | | | Quilcene | Clallam |
| 2840000 | | 5.4 | 6.55 | 5.40 | 6.55 | Quilcene | Clallam |
| 2840030 | | 3.04 | 3.68 | | | Quilcene | Clallam |
| 2840034 | | 1.44 | 1.75 | | | Quilcene | Clallam |
| 2840070 | | 1.77 | 2.15 | 0.10 | 0.12 | Quilcene | Clallam |
| 2840071 | | 2.04 | 2.47 | 0.10 | 0.12 | Quilcene | Clallam |
| 2840080 | | 1.62 | 1.96 | 0.10 | 0.12 | Quilcene | Clallam |
| 2840084 | | 0.25 | 0.30 | | | Quilcene | Clallam |
| 2840120 | | 2 | 2.42 | | | Quilcene | Clallam |
| 2840130 | | 1.1 | 1.33 | | | Quilcene | Clallam |
| 2840150 | | 0.64 | 0.78 | 0.10 | 0.12 | Quilcene | Clallam |
| 2845000 | | 4.6 | 5.58 | 4.60 | 5.58 | Quilcene | Clallam |
| 2845040 | | 0.3 | 0.36 | 0.10 | 0.12 | Quilcene | Clallam |
| 2845070 | | 1.6 | 1.94 | 1.60 | 1.94 | Quilcene | Clallam |
| 2845073 | | 0.9 | 1.09 | 0.90 | 1.09 | Quilcene | Clallam |
| 2845090 | | 0.5 | 0.61 | | | Quilcene | Clallam |

| Road | Road Clean? | Total miles surveyed | Total acres surveyed | Total miles treated* | Total acres treated* | District | County |
|---|---|---|---|---|---|---|---|
| 2845120 | | 1.7 | 2.06 | 1.70 | 2.06 | Quilcene | Clallam |
| 2845150 | | 0.2 | 0.24 | | | Quilcene | Clallam |
| 2845200 | | 0.28 | 0.34 | | | Quilcene | Clallam |
| 2850000 | | 7.4 | 8.97 | 7.40 | 8.97 | Quilcene | Jefferson |
| 2850010 | | 1.6 | 1.94 | 1.60 | 1.94 | Quilcene | Jefferson |
| 2850090 | Y | 1.02 | 1.24 | 0.10 | 0.12 | Quilcene | Clallam |
| 2850093 | Y | 0.1 | 0.12 | | | Quilcene | Clallam |
| 2850120 | | 2.8 | 3.39 | 0.10 | 0.12 | Quilcene | Clallam |
| 2850124 | | 0.2 | 0.24 | | | Quilcene | Clallam |
| 2851000 | | 4.1 | 4.97 | | | Quilcene | Clallam |
| 2851080 | | 1.6 | 1.94 | | | Quilcene | Clallam |
| 2851090 | | 0.6 | 0.73 | | | Quilcene | Clallam |
| 2855000 | | 2.7 | 3.27 | 2.70 | 3.27 | Quilcene | Clallam |
| 2855030 | | 2.7 | 3.27 | | | Quilcene | Clallam |
| 2855032 | | 0.8 | 0.97 | | | Quilcene | Clallam |
| 2855070 | | 1.6 | 1.94 | 0.10 | 0.12 | Quilcene | Clallam |
| 2855100 | | 1.2 | 1.45 | | | Quilcene | Clallam |
| 2860000 | | 16.15 | 19.58 | | | Quilcene | Clallam |
| 2860120 | | 1.6 | 1.94 | | | Quilcene | Clallam |
| 2870030 | | 1.7 | 2.06 | 0.10 | 0.12 | Quilcene | Clallam |
| 2870050 | | 2.8 | 3.39 | 0.10 | 0.12 | Quilcene | Clallam |
| 2870056 | | 0.7 | 0.85 | 0.10 | 0.12 | Quilcene | Clallam |
| 2870058 | | 0.5 | 0.61 | | | Quilcene | Clallam |
| 2870059 | | 0.48 | 0.58 | | | Quilcene | Clallam |
| 2875000 | | 5.9 | 7.15 | 0.10 | 0.12 | Quilcene | Clallam |
| 2875020 | | 0.5 | 0.61 | 0.10 | 0.12 | Quilcene | Clallam |
| 2875070 | | 2 | 2.42 | | | Quilcene | Clallam |
| 2875090 | Y | 0.1 | 0.12 | | | Quilcene | Clallam |
| 2877000 | | 4.6 | 5.58 | | | Quilcene | Clallam |
| 2877040 | | 1.29 | 1.56 | | | Quilcene | Clallam |
| 2877050 | | 2.65 | 3.21 | | | Quilcene | Clallam |
| 2877052 | | 0.29 | 0.35 | | | Quilcene | Clallam |
| 2877100 | | 0.3 | 0.36 | | | Quilcene | Clallam |
| 2878000 | | 4.06 | 4.92 | 4.06 | 4.92 | Quilcene | Clallam |
| 2878050 | | 0.6 | 0.73 | | | Quilcene | Clallam |
| 2878060 | | 0.4 | 0.48 | 0.40 | 0.48 | Quilcene | Clallam |
| 2878080 | | 1.4 | 1.70 | | | Quilcene | Clallam |
| 2878085 | | 0.9 | 1.09 | | | Quilcene | Clallam |
| 2878100 | | 1.59 | 1.93 | | | Quilcene | Clallam |
| 2878102 | | 0.4 | 0.48 | | | Quilcene | Clallam |
| 2878108 | | 0.13 | 0.16 | | | Quilcene | Clallam |
| 2878109 | | 0.27 | 0.33 | | | Quilcene | Clallam |
| 2878110 | | 0.9 | 1.09 | | | Quilcene | Clallam |
| 2878120 | | 1.05 | 1.27 | 1.05 | 1.27 | Quilcene | Clallam |
| 2878123 | | 0.2 | 0.24 | | | Quilcene | Clallam |
| 2880000 | | 1.81 | 2.19 | | | Quilcene | Clallam |
| 2900000 | | 38.3 | 46.42 | 12.00 | 14.55 | Soleduc | Clallam |
| 2900015 | | 0.1 | 0.12 | | | Soleduc | Clallam |
| 2900070 | | 2.7 | 3.27 | | | Soleduc | Clallam |

| Road | Road Clean? | Total miles surveyed | Total acres surveyed | Total miles treated* | Total acres treated* | District | County |
|---|---|---|---|---|---|---|---|
| 2900540 | | 2 | 2.42 | | | Soleduc | Clallam |
| 2900650 | Y | 1.2 | 1.45 | | | Soleduc | Clallam |
| 2900950 | | 0.1 | 0.12 | | | Soleduc | Clallam |
| 2902000 | | 4.3 | 5.21 | 0.10 | 0.12 | Soleduc | Clallam |
| 2902300 | | 0.6 | 0.73 | | | Soleduc | Clallam |
| 2902375 | Y | 0.8 | 0.97 | | | Soleduc | Clallam |
| 2903000 | | 6.8 | 8.24 | 6.80 | 8.24 | Soleduc | Clallam |
| 2918000 | | 14.5 | 17.58 | 4.00 | 4.85 | Soleduc | Clallam |
| 2918100 | | 3.3 | 4.00 | | | Soleduc | Clallam |
| 2918110 | | 0.8 | 0.97 | | | Soleduc | Clallam |
| 2920000 | | 8.9 | 10.79 | | | Soleduc | Clallam |
| 2920020 | | 1.4 | 1.70 | | | Soleduc | Clallam |
| 2920210 | | 0.2 | 0.24 | | | Soleduc | Clallam |
| 2922000 | | 12.6 | 15.27 | | | Soleduc | Clallam |
| 2923000 | | 13.7 | 16.61 | 0.10 | 0.12 | Soleduc | Clallam |
| 2923070 | | 5.2 | 6.30 | | | Soleduc | Clallam |
| 2931000 | | 11.9 | 14.42 | 0.10 | 0.12 | Soleduc | Clallam |
| 2931190 | | 1.7 | 2.06 | | | Soleduc | Clallam |
| 2931200 | | 2.5 | 3.03 | | | Soleduc | Clallam |
| 2932000 | | 3.8 | 4.61 | 0.10 | 0.12 | Soleduc | Clallam |
| 2932030 | | 1.3 | 1.58 | | | Soleduc | Clallam |
| 2932031 | | 0.5 | 0.61 | | | Soleduc | Clallam |
| 2932035 | | 0.2 | 0.24 | | | Soleduc | Clallam |
| 2932040 | | 0.4 | 0.48 | | | Soleduc | Clallam |
| 2932050 | | 0.3 | 0.36 | | | Soleduc | Clallam |
| 3000000 | | 18.8 | 22.79 | | | Soleduc | Clallam |
| 3000011 | Y | 0.7 | 0.85 | | | Soleduc | Clallam |
| 3000200 | | 8 | 9.70 | | | Soleduc | Clallam |
| 3000215 | | 0.6 | 0.73 | | | Soleduc | Clallam |
| 3000220 | Y | 0.3 | 0.36 | | | Soleduc | Clallam |
| 3000250 | | 3.9 | 4.73 | | | Soleduc | Clallam |
| 3000260 | Y | 0.7 | 0.85 | | | Soleduc | Clallam |
| 3000300 | | 3.5 | 4.24 | | | Soleduc | Clallam |
| 3000395 | Y | 0.2 | 0.24 | | | Soleduc | Clallam |
| 3000400 | | 4.5 | 5.45 | | | Soleduc | Clallam |
| 3000401 | Y | 0.4 | 0.48 | | | Soleduc | Clallam |
| 3006000 | | 7.8 | 9.45 | | | Soleduc | Clallam |
| 3006011 | | 1.2 | 1.45 | | | Soleduc | Clallam |
| 3006300 | | 4.1 | 4.97 | | | Soleduc | Clallam |
| 3040000 | | 21.2 | 25.70 | 5.00 | 6.06 | Soleduc | Clallam |
| 3040011 | | 0.7 | 0.85 | | | Soleduc | Clallam |
| 3040025 | Y | 0.2 | 0.24 | | | Soleduc | Clallam |
| 3040100 | | 2.3 | 2.79 | | | Soleduc | Clallam |
| 3040115 | Y | 0.7 | 0.85 | | | Soleduc | Clallam |
| 3040595 | | 2 | 2.42 | 2.00 | 2.42 | Soleduc | Clallam |
| 3040800 | | 0.1 | 0.12 | | | Soleduc | Clallam |
| 3040900 | | 0.5 | 0.61 | | | Soleduc | Clallam |
| 3050000 | | 3.8 | 4.61 | 0.10 | 0.12 | Soleduc | Clallam |
| 3050011 | | 1.5 | 1.82 | | | Soleduc | Clallam |

| Road | Road Clean? | Total miles surveyed | Total acres surveyed | Total miles treated* | Total acres treated* | District | County |
|---|---|---|---|---|---|---|---|
| 3067000 | | 3.53 | 4.28 | 3.53 | 4.28 | Soleduc | Clallam |
| 3068000 | | 9.7 | 11.76 | 0.10 | 0.12 | Soleduc | Clallam |
| 3068000 | | 0.8 | 0.97 | | | Soleduc | Clallam |
| 3068190 | Y | 0.4 | 0.48 | | | Soleduc | Clallam |
| 3068200 | | 2.4 | 2.91 | | | Soleduc | Clallam |
| 3071000 | | 2.3 | 2.79 | | | Soleduc | Clallam |
| 3071015 | | 0.6 | 0.73 | | | Soleduc | Clallam |
| 3100010 | | 0.1 | 0.12 | | | Soleduc | Clallam |
| 3100100 | | 3.7 | 4.48 | | | Soleduc | Clallam |
| 3100300 | | 3.4 | 4.12 | | | Soleduc | Clallam |
| 3100400 | | 2.9 | 3.52 | | | Soleduc | Clallam |
| 3100420 | | 0.6 | 0.73 | | | Soleduc | Clallam |
| 3116000 | | 5 | 6.06 | | | Soleduc | Clallam |
| **TOTALS** | | **681.05** | **825.52** | **96.45** | **116.91** | | |

* = miles and acres treated may include non-Forest Service roads where they lead to Forest Service roads

# Appendix B: Weed Species Reported

| **Common Name** | ***Botanical Name*** |
|---|---|
| Bindweed | *Convulvulus arvensis* |
| Borage | *Borago* |
| Bull thistle | *Cirsium vulgare* |
| Canada thistle | *Cirsium arvense* |
| Common burdock | *Arctium minus* |
| Common tansy | *Tanacetum vulgare* |
| Dalmation toadflax | *Linaria dalmatica ssp dalmatica* |
| English holly | *Ilex aquifolium* |
| English ivy | *Hedera helix* |
| Evergreen blackberry | *Rubus laciniatus* |
| Everlasting peavine | *Lathrus latifolius* |
| Giant knotweed | *Polygonum sachalinense* |
| Herb Robert | *Geranium robertianum* |
| Himalayan blackberry | *Rubus discolor* |
| Japanese knotweed | *Polygonum cuspidatum* |
| Meadow knapweed | *Centaurea jacea x nigra* |
| Orange hawkweed | *Hieracium aurantiacum* |
| Oxeye daisy | *Leucanthemum chrysanthemum* |
| Purple loosestrife | *Lythrum salicaria* |
| Reed canarygrass | *Phalaris arundinacea* |
| Rockspray cotoneaster | *Cotoneaster* |
| Scotch broom | *Cytisus scoparius* |
| Spotted knapweed | *Centaurea biebersteinii* |
| St. Johnswort | *Hypericum perforatum* |
| Tansy ragwort | *Senecia jacobaea* |
| Wild Carrot | *Daucus carota* |

# Appendix C: WCC Work Summary

| Location | Weed | Date Work Done | # of Hours | # of Crew | Total Hours | # of Plants Removed |
|---|---|---|---|---|---|---|
| Dosewallips Rd. at Hwy 101 | Herb Robert | 6/30/03 | 10 | 5 | 50 | 5,520 |
| Dosewallips Rd. at Hwy 101 | Scotch Broom | 7/1/03 | 10 | 5 | 50 | 10,000 |
| Dosewallips Rd. at Hwy 101 | Scotch Broom | 7/2/03 | 10 | 5 | 50 | 8,000 |
| Rocky Brook Rd. | Tansy | 7/7/03 | 4 | 5 | 20 | 835 |
| Rocky Brook Rd. | Canada Thistle | 7/8/03 | 10 | 4 | 40 | 505 |
| Rocky Brook Rd. | Scotch Broom | 7/8/03 | | | 0 | 4,034 |
| Rocky Brook Rd. | Tansy | 7/8/03 | | | 0 | 5,939 |
| Dosewallips Rd. at Hwy 101 | Scotch Broom | 7/10/03 | 10 | 5 | 50 | 11,554 |
| Rocky Brook Rd. | Canada Thistle | 7/10/03 | | | 0 | 107 |
| Rocky Brook Rd. | Herb Robert | 7/10/03 | | | 0 | 526 |
| Rocky Brook Rd. | Scotch Broom | 7/10/03 | | | 0 | 3,247 |
| Rocky Brook Rd. | Tansy | 7/10/03 | | | 0 | 94 |
| **TOTALS - Crew 1401 Darryl Borden, Supr.** | | | **54** | | **260** | **50,361** |
| | | | | | | |
| Woods Rd. (Blyn Pit) | Scotch Broom | 6/3/03 | 12 | 5 | 60 | 1,200 |
| Woods Rd. (Blyn Pit) | Tansy | 6/2/03 | 3 | 5 | 15 | 1,767 |
| Mt. Walker Rd. | Tansy | 6/5/03 | 10 | 5 | 50 | 3,675 |
| Lord's Lake Loop (FS3423, 3529, 2850) | Herb Robert | 6/4/03 | 10 | 5 | 50 | 19,251 |
| Lord's Lake Loop (FS3423, 3529, 2850) | Scotch Broom | 6/4/03 | | | 0 | 10 |
| Lord's Lake Loop (FS3423, 3529, 2850) | Tansy | 6/4/03 | | | 0 | 2,668 |
| Hwy 101 at Klahowya | Scotch Broom | 6/9/03 | 9 | 4 | 36 | 3,400 |
| FS29, west end | Tansy | 6/10/03 | 8 | 4 | 32 | 2,019 |
| FS29, west end | Scotch Broom | 6/11/03 | 8 | 4 | 32 | 3,272 |
| **TOTALS - Crew xxxx Suzanne, Supr.** | | | **60** | | **275** | **37,262** |
| **TOTAL WCC 2003** | | | **114** | | **535** | **87,623** |

# Appendix D: WCC Potential projects for 2004

| FS Road | Weed(s) | # of Crew Hours Needed | County | Comments |
|---|---|---|---|---|
| 2100000 | Evergreen blackberry, Himalayan blackberry, Scotch broom | 10 | Grays Harbor | First 8.5 miles |
| 2140000 | Tansy ragwort, Scotch broom, Canada thistle, Evergreen blackberry, Himalayan blackberry, Common tansy | 12 | Grays Harbor | |
| 2160000 | Tansy ragwort | 2 | Jefferson | Scattered along entire road |
| 2160000 | Bull thistle, Scotch broom, Tansy ragwort | 4 | Jefferson | Entire road |
| 2170000 | Tansy ragwort, Evergreen blackberry, Bull thistle, Scotch broom, Himalayan blackberry | 15 | Jeff/Grays | Entire road and spurs |
| 2180000 | Himalayan blackberry, Evergreen blackberry, Tansy ragwort, Scotch broom | 2 | Grays Harbor | Entire road |
| 2190000 | Tansy ragwort, Evergreen blackberry, Bull thistle, Scotch broom, Himalayan blackberry, Japanese knotweed | 50 | Jeff/Grays | Entire road and spurs |
| 2300000 | Canada thistle, Bull thistle, Scotch broom, Tansy ragwort, Common tansy | 10 | Mason | First 12 miles |
| 2340000 | Common tansy and Scotch broom | 5 | Mason | Scattered along road and around lake |
| 2340000 | Canada thistle, Tansy ragwort, Scotch broom, Common tansy, Japanese knotweed, Purple loosestrife, English Holly | 10 | Mason | First 3.5 miles and spurs 080 and 088 |
| 2353000 | Common tansy, Tansy ragwort, Scotch broom, Himalayan blackberry, | 2 | Mason | |
| 2361000 | Tansy ragwort,Scotch broom | 10 | Mason | 2361, and spurs 210 and 700 |
| 2400000 | Herb Robert, Common tansy, Bull thistle, Tansy ragwort, Canada thistle, Scotch broom | 10 | Mason | Day use area - to be done with road 2451000 and spurs |
| 2401000 | Tansy ragwort, Scotch broom, Canada thistle, Reed canary grass, Himalayan blackberry | 15 | Mason | With spurs 012, 013, 033, and 100 |

| FS Road | Weed(s) | # of Crew Hours Needed | County | Comments |
|---|---|---|---|---|
| 2419000 | Scotch broom, Tansy ragwort, Common tansy, Canada thistle | 10 | Mason | Entire road and spurs |
| 2421000 | Tansy ragwort, Scotch broom, Common tansy, Himalayan blackberry, Canada thistle | 15 | Mason | With road 2480000 |
| 2441000 | Tansy ragwort, Scotch broom | 10 | Mason | with spur 200 |
| 2464000 | Bull thistle, Tansy ragwort | 2 | Mason | From 2419000 |
| 2469000 | Tansy ragwort, Scotch broom, Spotted knapweed, Bull thistle, | 4 | Mason | Entire road and spurs |
| 2500000 | Bull thistle, Scotch broom, Common tansy, Tansy ragwort, Wild carrot | 15 | Mason | Entire road |
| 2620000 | Tansy ragwort, Scotch broom, | 30 | Jefferson | Entire road and spurs |
| 2700000 | Tansy ragwort, Common tansy, Scotch broom, and Bull thistle | 30 | Jefferson | Scattered along entire road, and spurs 090, 100, and 140 |
| 2740000 | Scotch broom, Meadow knapweed, Tansy ragwort, Common tansy, Spotted knapweed | 30 | Jefferson | Entire road and spurs |
| 2800000 | Tansy ragwort and Herb robert | 40 | Jefferson | Entire road and spurs |
| 2810000 | Tansy ragwort, Meadow knapweed, Spotted knapweed | 10 | Clallam | Entire road |
| 2840000 | Tansy ragwort, Scotch broom, Borage, Meadow knapweed(?) | 40 | Clallam | Entire road and spurs |
| 2845000 | Tansy ragwort, Scotch broom, Bull thistle, | 40 | Clallam | Entire road and spurs |
| 2850000 | Scotch broom, Tansy ragwort, Herb robert, Meadow knapweed(?) | 40 | Clallam | Entire road and spurs |
| 2851000 | Tansy ragwort | 30 | Jefferson | Entire road and spurs |
| 2855000 | Tansy ragwort, Meadow knapweed(?), Scotch broom, Spotted knapweed | 40 | Clallam | Entire road and spurs (watch for Herb robert at .1 mile on spur 070) |
| 2870059 | Scotch broom, Tansy ragwort | 15 | Clallam | at the end of the spur |
| 2870059 | Herb robert | 10 | Clallam | Southern edge of Cranberry Bog - reachable by WCC? |
| 2875000 | Meadow knapweed | 20 | Clallam | At 1.1 miles from 2875.020, just before 070 |
| 2875020 | Scotch broom | 10 | Clallam | Entire spur - 1/2 mile |
| 2878000 | Scotch broom, Meadow knapweed, Tansy ragwort | 10 | Clallam | Entire road and spurs |
| 2900000 | Scotch broom | 25 | Clallam | From mile post 27 to end of road at M.P. 38.5 |

| FS Road | Weed(s) | # of Crew Hours Needed | County | Comments |
|---|---|---|---|---|
| 2902000 | Scotch broom | 20 | Clallam | In pit at .9 mile |
| 3000000 | Scotch broom | 10 | Clallam | At beginning of road and along Hwy 101 |
| 3000000 | Herb robert | 10 | Clallam | 2.2 miles from Hwy 101 and again at 2.3 miles (other side of bridge) and at 2.7 and 5.6 miles |
| 3000200 | Scotch broom and Herb robert | 40 | Clallam | 4 days for this spur. Cut/stump Scotch broom where on steep slope. Look for young Herb robert plants growing up slopes. |
| 3000300 | Scotch broom | 30 | Clallam | 3 days for entire length of this spur |
| 3006000 | Scotch broom | 6 | Clallam | Beginning at .7 mile and scattered to 7.7 |
| 3006000 | Herb robert and Evergreen blackberry | 3 | Clallam | From Hwy 113 at .1 mile and again at .6 mile/Evergreen blackberry at .6 |
| 3050000 | Herb robert | 30 | Clallam | At beginning of road for 1/2 mile, thick in many spots, then scattered up the road (bad at .9 mile) |
| 3050011 | Herb robert, some Evergreen blackberry | 5 | Clallam | At beginning of spur, and extends about 150' - 200' |
| 3068000 | Tansy | 1 | Clallam | At 9.5 miles on north side of road and at turnout |
| 3116000 | Tansy ragwort, Scotch broom, Bull thistle, Herb robert, Common tansy | 30 | Clallam | Entire road |
| SFCRBA | Canada thistle, Scotch broom, Herb robert | 40 | Clallam | |
| WSNYDER | Scotch broom | 10 | Clallam | |
| 2860000 | Canada thistle, Common tansy, Meadow knapweed, Tansy ragwort, Scotch broom | 10 | Clallam | Road and spur 120 |
| T882 | Scotch broom, Herb robert, Everlasting peavine, Evergreen blackberry | 15 | Clallam | Mt. Muller Trail |
| 3116000 | Tansy ragwort, Scotch broom, Bull thistle, Herb robert, Common tansy | 25 | Clallam | Entire road |
| 3100300 | Herb robert, Tansy ragwort, Scotch broom, Bull thistle | 40 | Clallam | Entire spur |
| ELKLAKE | Tansy ragwort, Canada thistle, Bull thistle | 10 | Mason | |
| 3390000 | Scotch broom, Evergreen blackberry | 20 | Jefferson | |
| SEALRCG | Scotch broom, English Ivy | 10 | Jefferson | |
| | Total Hours | 868 | | |
| | Total Days | 87 | | |
| | Total weeks | 22 | | |

# Appendix E: Clallam Co. Sheriff's/Road Dept. Chain Gang Work Summary

| Road | Weed | Date Work Done W/E | # of Plants Removed | Notes |
|---|---|---|---|---|
| 2850000 | Tansy ragwort | 10/24 | 2,830 | |
| 2855000 and 2850000 | Tansy ragwort | 9/26 | 5,425 | |
| 2855000 and 2850000 | Thistle | 9/26 | 700 | |
| 3040000 | Tansy ragwort | 9/19 | 1,250 | |
| 3067000 | Scotch Broom | 9/19 | 1,400 | |
| 2900000 | Scotch Broom | 9/19 | 3,340 | |
| 2900000 | Scotch Broom | 9/12 | 4,940 | |
| 2840000 | Thistle | 8/22 | 3,300 | |
| 2840000 | Tansy ragwort | 8/22 | 1,750 | |
| 2840000 | Scotch Broom | 8/22 | 55 | |
| 2845000 | Tansy ragwort | 8/22 | 3,000 | |
| 2845000 | Thistle | 8/22 | 2,200 | |
| 2800000 | Tansy ragwort | 8/8 | 6,750 | |
| 2800000 | Thistle | 8/8 | 2,300 | |
| 2800000 | Scotch Broom | 8/8 | 45 | |
| 2810000 | Tansy ragwort | 8/8 | 7,850 | |
| 2810000 | Thistle | 8/8 | 2,300 | |
| 2810000 | Scotch Broom | 8/8 | 40 | |
| 2840000 | Tansy ragwort | 8/8 | 2,730 | |
| 2840000 | Thistle | 8/8 | 1,250 | |
| 2855070 | Tansy ragwort | 8/8 | 450 | |
| 2855070 | Thistle | 8/8 | 675 | |
| 2800000 | Thistle | 8/1 | 3,450 | |
| 2800000 | Tansy ragwort | 8/1 | 750 | |
| 2850000 | Tansy ragwort | 8/1 | 4,750 | |
| 2850000 | Scotch Broom | 8/1 | 30 | |
| 2850000 | Thistle | 8/1 | 450 | |
| 2852000 | Tansy ragwort | 8/1 | 4,500 | |
| 2852000 | Thistle | 8/1 | 1,050 | |
| 2852090 | Tansy ragwort | 8/1 | 1,200 | |
| 2852090 | Thistle | 8/1 | 350 | |
| 2850000 | Tansy ragwort | 7/25 | 4,200 | |
| 2850000 | Thistle | 7/25 | 1,700 | |
| Snider Work Center | Japanese Knotweed | 7/25 | | Weedeated |
| **Road** | **Weed** | **Date Work** | **# of Plants** | **Notes** |

| | | Done W/E | Removed | |
|---|---|---|---|---|
| No. Fork Calawah Bridge | Giant Knotweed | 7/25 | | Weedeated |
| 2900000 | Tansy ragwort | 7/18 | 1,330 | |
| 2900000 | Scotch Broom | 7/18 | 875 | |
| 2900000 | Thistle | 7/18 | 400 | |
| 3040000 and 3040595 | Thistle | 7/18 | 340 | |
| 2900000 | Scotch Broom | 7/11 | 3,450 | |
| 2900000 | Thistle | 7/11 | 180 | |
| 2900000 (M.P. 36) | Orange hawkweed | 7/11 | 170 | |
| 3040000 | Herb robert | 7/11 | | Unknown qty |
| 3040000 | Tansy ragwort | 7/11 | 1,400 | |
| 3040000 | Thistle | 7/11 | 1,200 | |
| 2918000 | Scotch Broom | 7/2 | 640 | |
| 2918000 | Tansy ragwort | 7/2 | 125 | |
| Snider Work Center | Herb robert | 6/27 | | Unknown qty |
| 2900000 | Tansy ragwort | 6/27 | 3,500 | |
| 2900000 | Thistle | 6/27 | 650 | |
| 2900000 | Scotch Broom | 6/20 | 3,450 | |
| Snider Work Center | Herb robert | 6/12 | | Unknown qty |
| Snider Work Center | Japanese Knotweed | 6/6 | | Weedeated |
| Snider Work Center | Herb robert | 5/22 | | Unknown qty |
| 2870110 | Scotch Broom | 4/4 | 729 | |
| 2878120 | Scotch Broom | 3/28 | 610 | |
| 2878120 | Scotch Broom | 3/21 | 1,560 | |
| 2845070, 073 | Scotch Broom | 3/7 | 1,860 | |
| 2845120 | Scotch Broom | 3/7 | 83 | |
| 2903000 | Scotch Broom | 2/13 | 69 | |
| 2878000 | Scotch Broom | 1/24 | 1,340 | |
| 2878060 | Scotch Broom | 1/24 | 127 | |
| Klahowya | Scotch Broom | 1/10 | 1,650 | |
| **TOTAL Chain Gang 2003** | | | **102,748** | |

# Appendix F: Orange Hawkweed Control Test Plot

Date: September 25th, 2003
Location: F.S. 2900 at milepost 36, east side of the road beneath the milepost marker.
Conditions: Clear skies, sunny, 60-65 degrees Fahrenheit.

Procedure: Experimental area was divided into 6 plots of roughly equal size using wooden pegs and surveyor's tape. These plots were numbered 1-6 (see figure 1). Plots 1 & 4 were left as controls, with no treatment. Plots 2 & 5 were raked aggressively to remove about 50 percent of the Orange hawkweed and other plants from the plots and expose bare soil. Plot 2 was raked with a 3 tined cultivator, which dug more deeply than the garden rake used for plot 5. Plots 5 & 6 were fertilized by hand-broadcasting a granular plant food fertilizer. The fertilizer was Cenex Plant Food 21-7-14-9 (N, P, K, and S, respectively). Plots 2, 3, 5, & 6 were then top-seeded with a mixture of certified weed free annual rye seed and locally gathered pearly everlasting and fireweed seeds/flowers, (95 % annual rye, maybe 5% pearly everlasting and fireweed).

FIG. 1

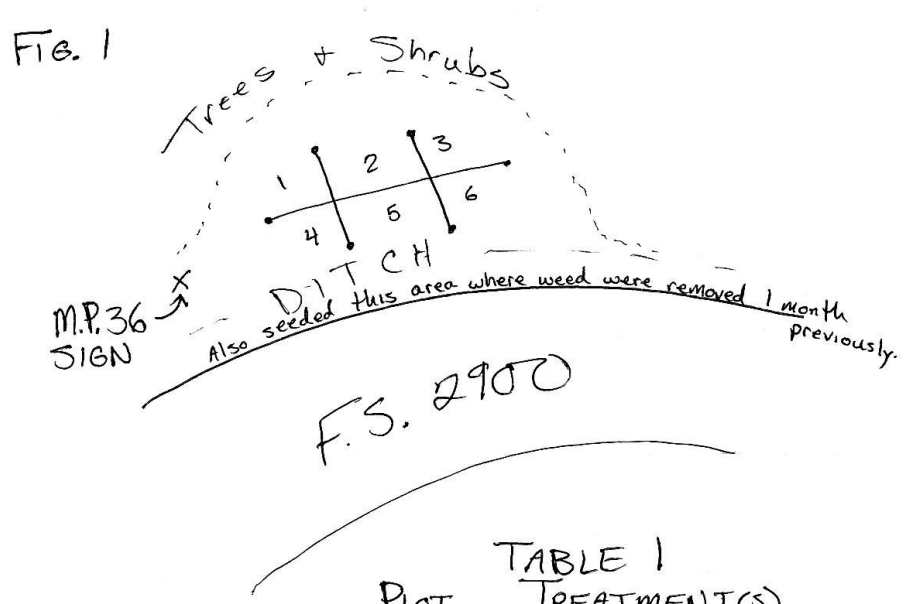
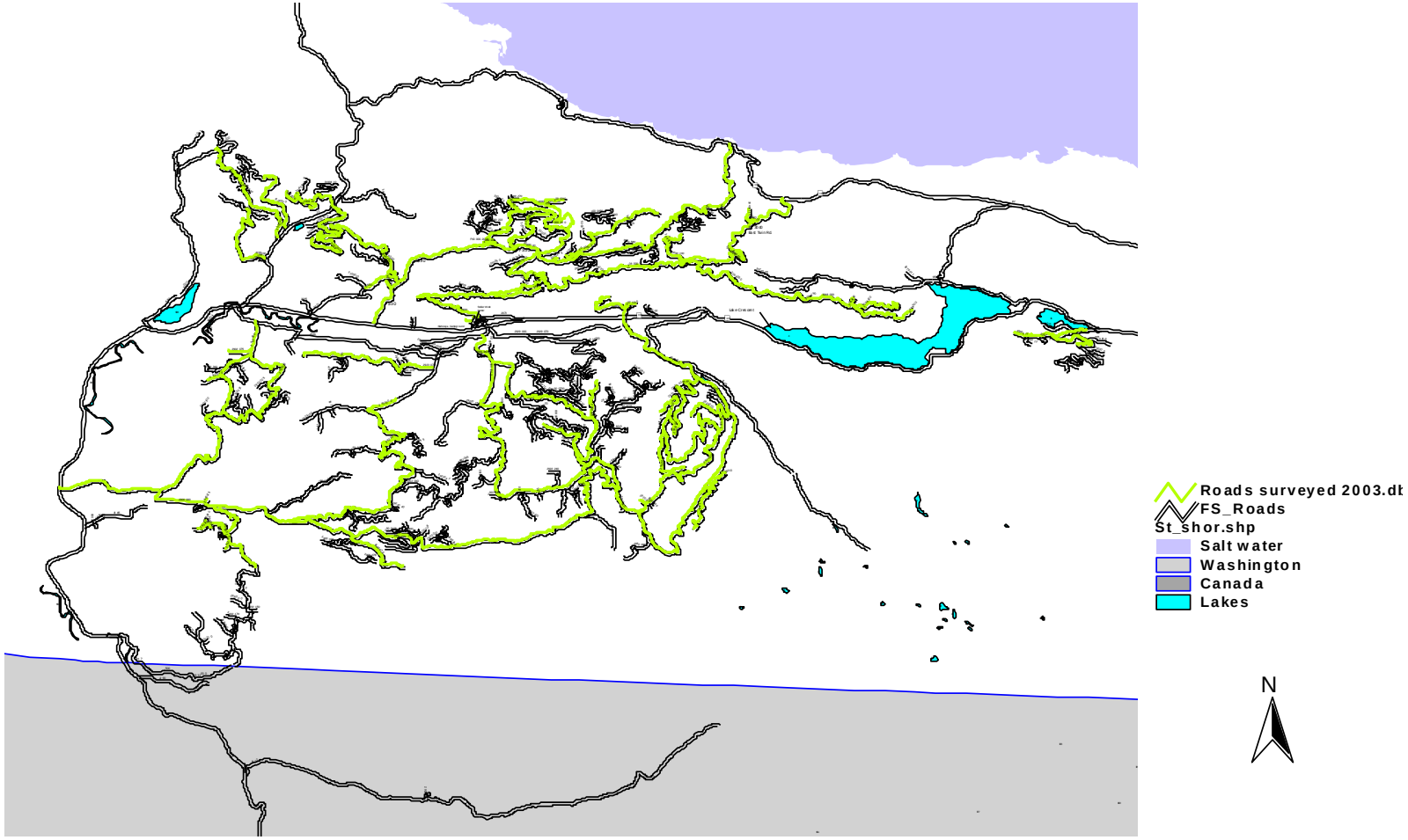


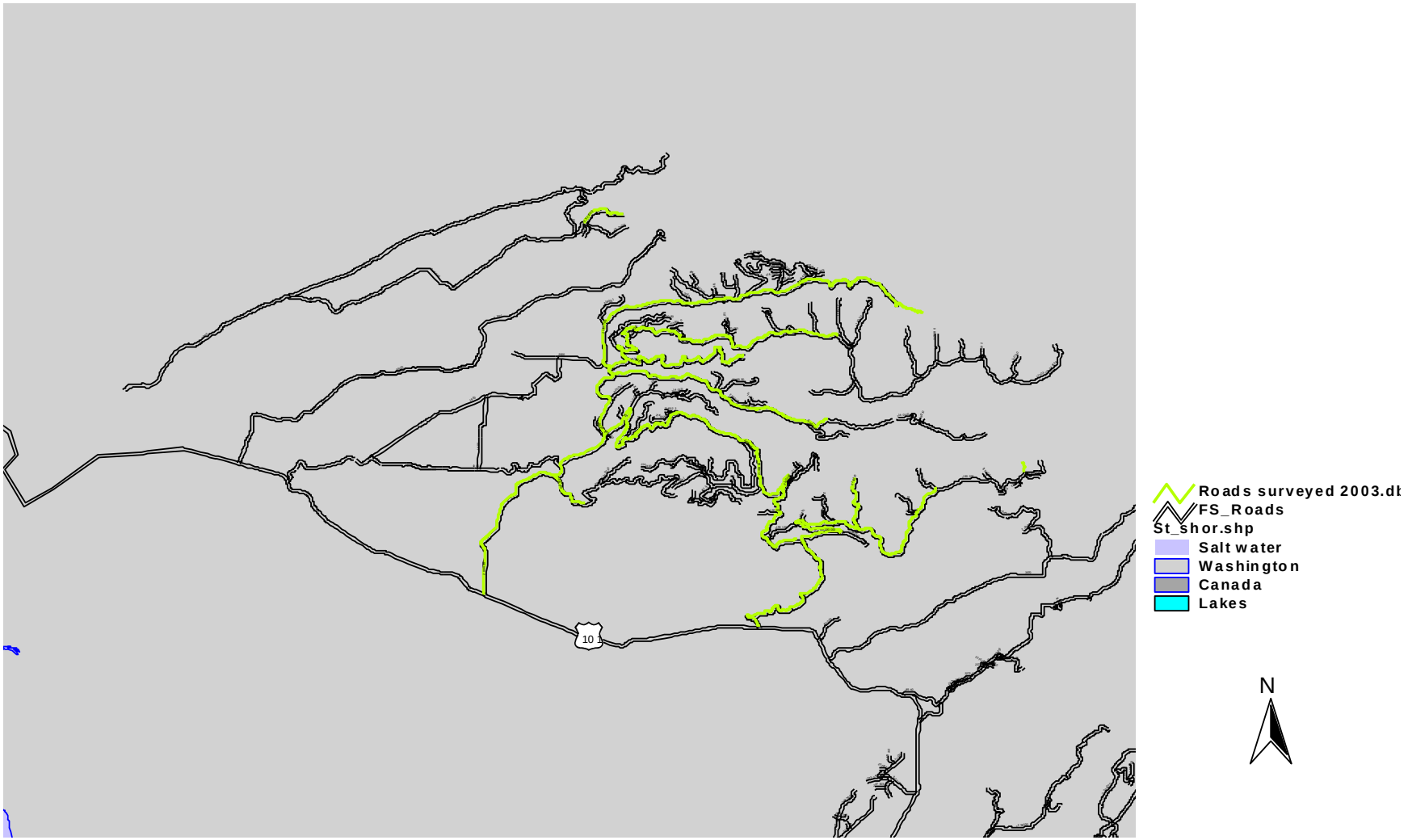

TABLE 1

| PLOT | TREATMENT(S) |
|---|---|
| 1 | None (Control) |
| 2 | Seed, Rake |
| 3 | Seed |
| 4 | None (Control) |
| 5 | Seed, Rake, Fertilize |
| 6 | Seed, Fertilize |

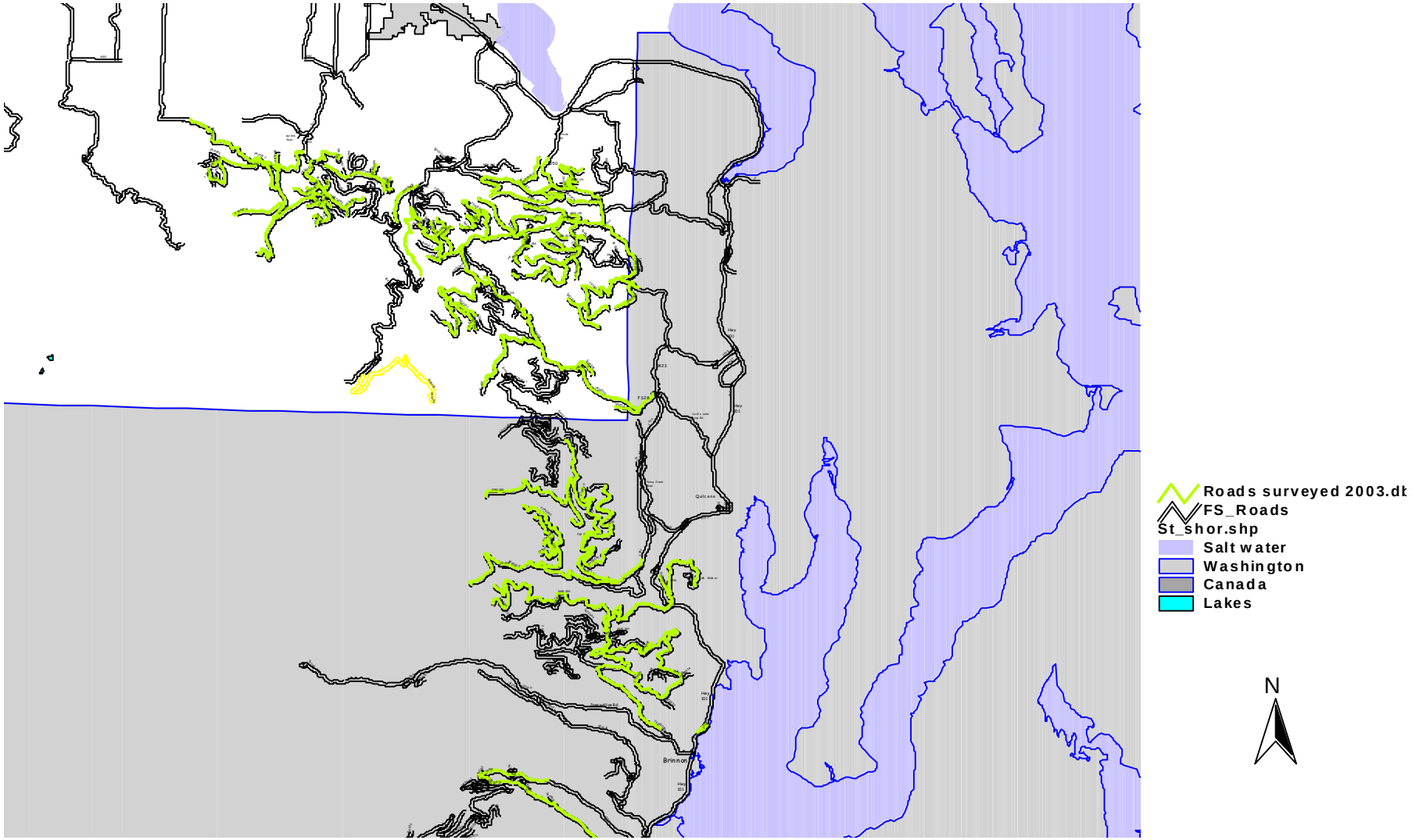
# Appendix G: Roads Surveyed Maps



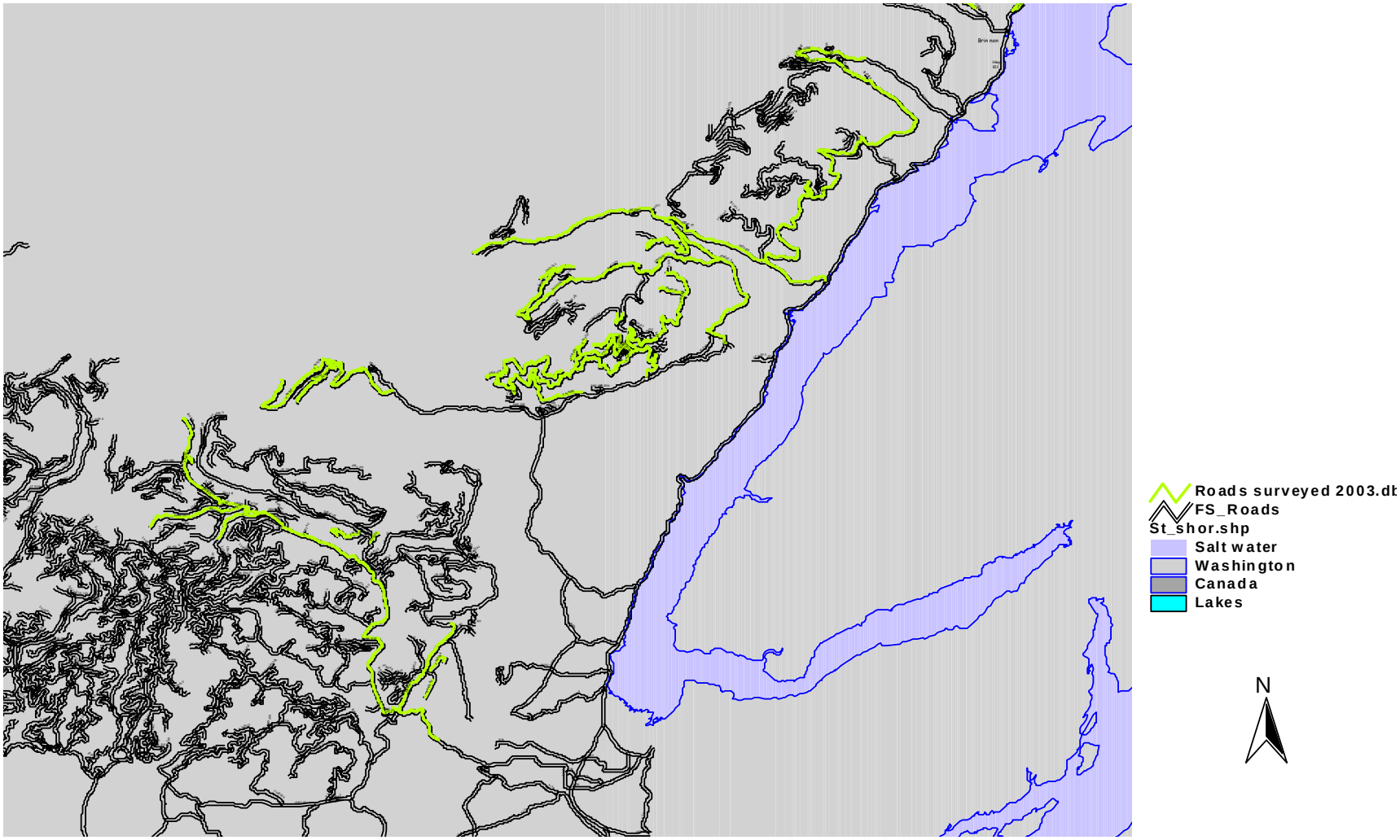

**Olympic Peninsula Cooperative Noxious Weed Control Project**
**Roads Surveyed 2003 - North Pacific District**




**Olympic Peninsula Cooperative Noxious Weed Control Project**
**Roads Surveyed 2003 - South Pacific District**




**Olympic Peninsula Cooperative Noxious Weed Control Project**
**Roads Surveyed 2003 - North Hood Canal District**




**Olympic Peninsula Cooperative Noxious Weed Control Project**
**Roads Surveyed 2003 - South Hood Canal District**

# Appendix H: Botanical Area Survey Summary

This report contains a summary of findings and recommendations for weed control on seven botanical areas in the Olympic National Forest.

**Distribution and control of weeds in and around the botanical areas:**
The botanical areas were designated to protect sites with unusual plant communities or associations. Invasive non-native species threaten the diversity within these areas. The variety of weed species must be met with different control methods suited to their characteristics and location.

- Bull thistle pulls out easily and is biennial. It does not usually form dense infestations and is highly controllable.
- Tansy ragwort and Scotch broom are common on most roads in this area, and travel readily along rivers. Their control is only difficult because of the extent of the infestations and the potential for re-infestation. Mechanical control is appropriate for almost all situations. Tansy is of concern because of its toxicity to animals, and Scotch broom forms dense populations, impeding succession in clearcuts.
- Himalayan blackberry is controllable, most efficiently by cut-stump herbicide, but forms impenetrable thickets if left uncontrolled. Because of seed dispersal by animals, especially birds, it can travel great distances to fairly remote sites, but requires an open area to become established. Evergreen blackberry, however, can tolerate shade and could become a much more severe problem.
- Herb Robert forms mats of vegetation in shaded understories, rapidly excluding native plants. Hand-pulling is easy but must be intensive and remove all young plants. Herb Robert distributes quickly on riverbanks and can infest a broad area.
- Meadow knapweed occurs along roads but can spread quickly into a monoculture in fields and meadows. Mechanical control is extremely difficult because of rhizomatous root systems that can re-sprout, making herbicide the only truly effective control method, particularly for large infestations. Canada thistle likewise spreads by roots and requires herbicide for complete control, although it usually does not form quite as dense an infestation.
- Oxeye daisy and St. Johnswort are serious weeds, but are so widespread that control is unlikely with the current technology and, except for special circumstances, is not recommended in this document.

**Botanical area findings and control recommendations:**
Most of the botanical areas surveyed did not have severe weed infestations, as weeds are less likely to invade healthy, intact forest ecosystems. All sites that had weeds also had evidence of human disturbance at the same location, and most stemmed from roads.

- Wet Weather Creek and Pine Mountain had no weeds within the botanical area. Tyler Peak had Canada thistle only on the road, and Three O'clock Ridge had weeds on the road and bull thistle with oxeye daisy on the heavily-used trail. Management for these areas should focus on the roads and trails within and near to the botanical areas, and should be done annually to prevent any further spread. Crews could hand-pull the weeds with a minimum of time and effort, or herbicide could be used where appropriate to eradicate weeds entirely.
- Pat's Prairie has small populations of oxeye daisy and Canada thistle within the prairie, and appears quite healthy and intact otherwise. Eradication of these weeds may be possible with a few years of dedicated effort, and should be a priority because of the vulnerability of this open grassy area. Herbicide would be most efficient on the Canada thistle, and annual treatment by a crew of workers could effectively control the weed problem in this area.
- South Fork Calawah River has a number of weed problems, all in the highly disturbed areas where they would be expected. As the spruce forest plant community is the reason for the botanical area, the forested area should be of the greatest concern, and the herb Robert and tansy ragwort inside the forest have a very good chance of being controlled. The weeds along the river will continue to be a problem because of natural disturbance and re-invasion by weed sources that are outside of the botanical area, and long-term control is unlikely with the current technology.
- The Cranberry Lake botanical area will require the most effort and resources. This plant community is extremely vulnerable and action will need to be taken quickly to prevent further damage to the native

population. Herbicide for the reed canarygrass and Canada thistle, and hand-pulling crews for the herb Robert and bull thistle will be needed, possibly with multiple visits over the year to knock down the weed infestations to a manageable size. If control is achieved, re-infestation is unlikely due to the buffer of forest between the bog and the road. Weeds in the road bed, including meadow knapweed, tansy ragwort, and Scotch broom, will also require a significant effort and may spread back in from vehicle traffic, but have a good chance of control due to the shade that the returning forest will provide over the road.

A cooperative project between:

Clallam County
Noxious Weed Control Board

Jefferson County
Noxious Weed Control Board

Olympic National Forest