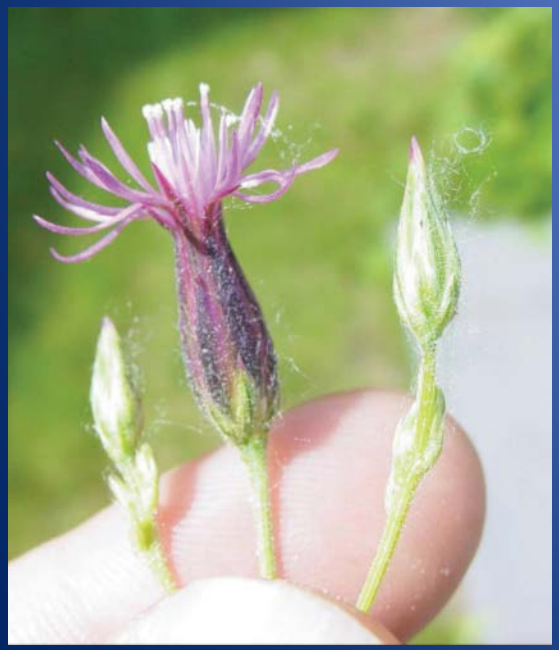
PNW-IPC Citizen Science EDRR (Early Detection Rapid Response) Program 2012-2013

November 5, 2013

Julie K. Combs, Ph.D. , EDRR Program Director
Pacific Northwest Invasive Plant Council (PNW – IPC)



Common crupina - Image: Rich Old, www.xidservices.com

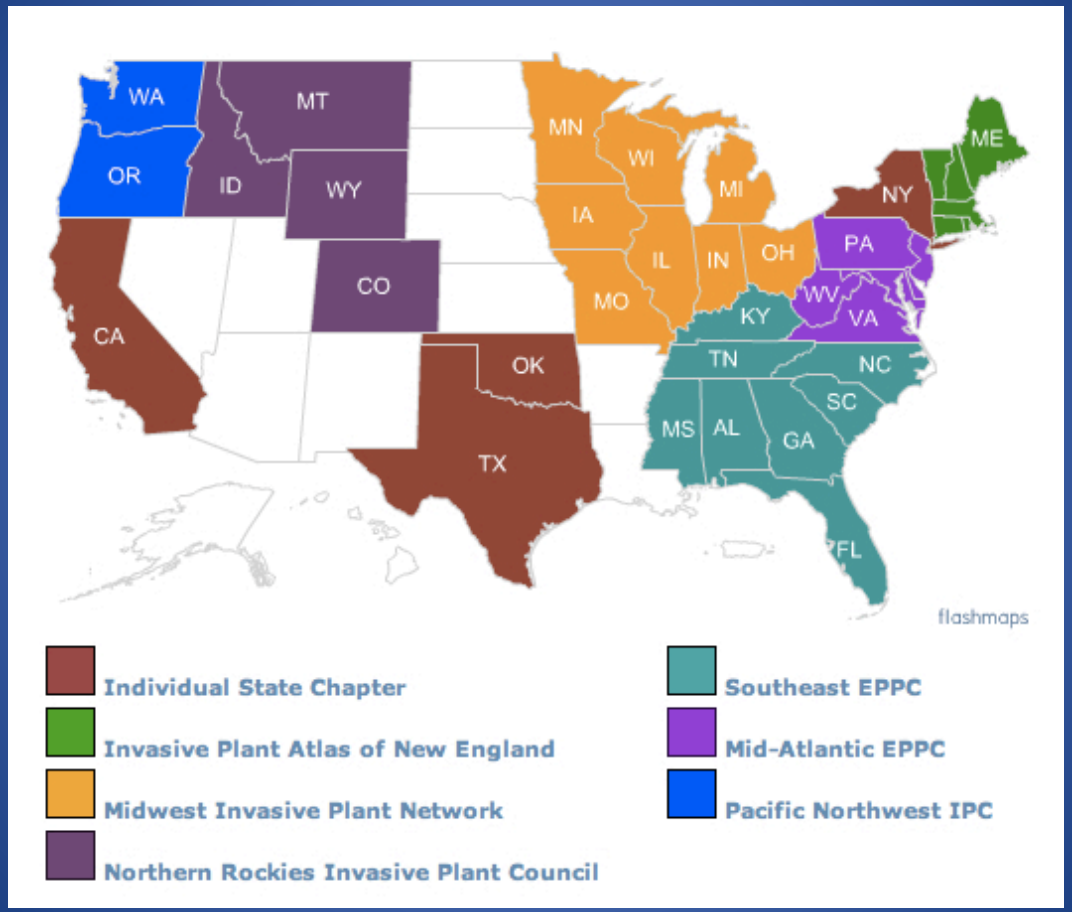
Partners:
Greg Haubrich (WSDA)
Lizbeth Seebacher (WA Department of Ecology)
Wendy DesCamp (WA State Noxious Weed Board)

Granting Agency: National Fish and Wildlife Foundation

Yellow floating heart - Image by: Jen Parsons

PACIFIC NORTHWEST invasive PLANT COUNCIL

National Association of EPPCs



http://www.naeppc.org/

http://www.pnw-ipc.org/

PNW Invasive Plant Council Programs

- Early Detection Rapid Response (EDRR) Program
  train citizen scientists to survey public lands for new invasive plants and/or newly emerging populations

- Nursery Certification Program
  certify nurseries that agree not to sell invasive plants

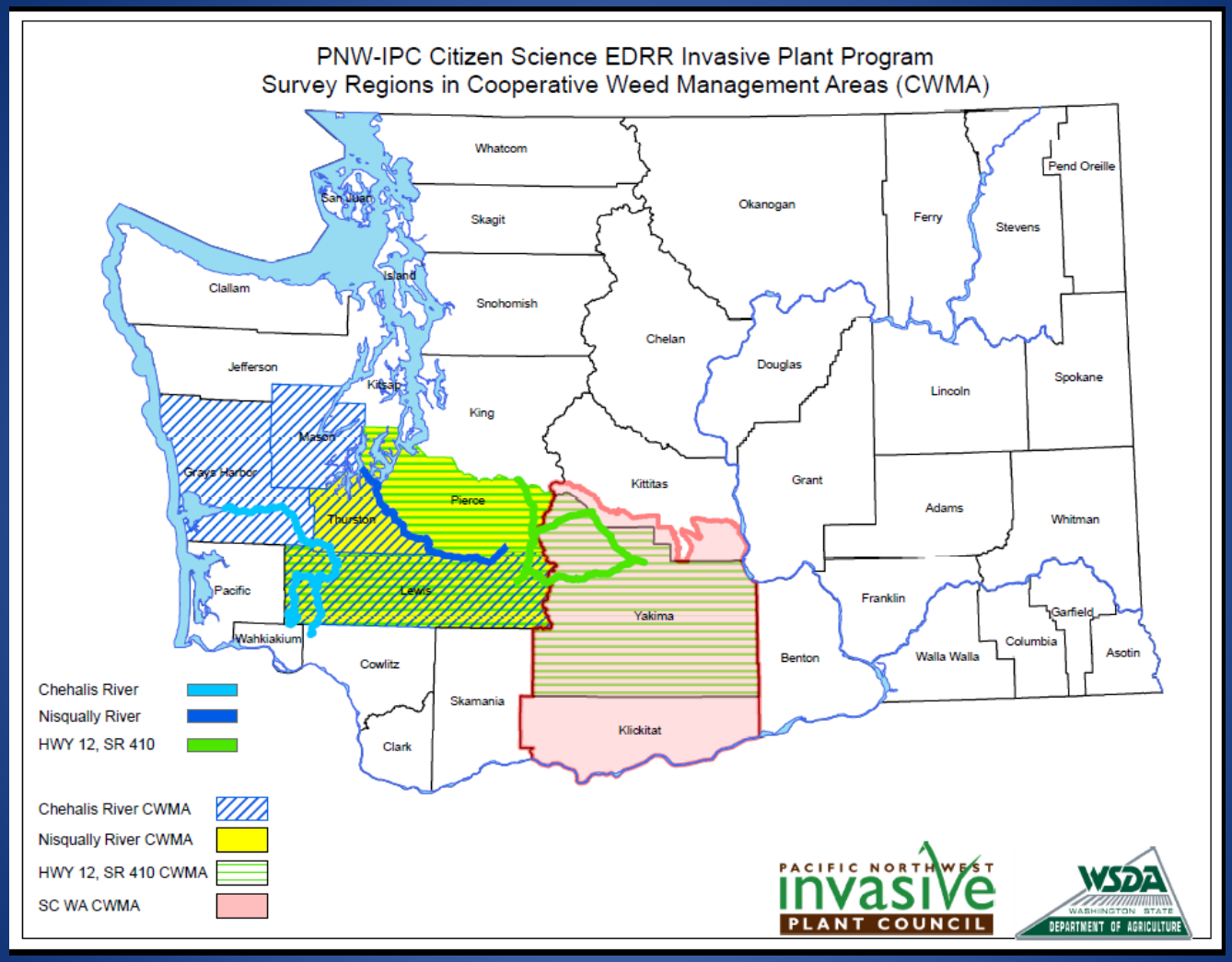
- Education / Information exchange
  conferences – workshops - listserve

PNW-IPC EDRR Citizen Science Program Goals

Train citizen scientists to identify EDRR invasive species and conduct surveys to document new populations

- Support local, state and federal management agencies to detect and eradicate invasive species
- Reduce cost and resources spent on management
- Increase public awareness of invasive species issues
- Provide meaningful hands-on experiences for community members to be involved in conservation and stewardship opportunities
- Decrease threats to biodiversity in PNW

Survey Area for EDRR Program 2012-2013



- 8 WA Counties in 2012
- 15 WA Counties in 2013 (San Juan, Clallam, Jefferson, Snohomish, Cowlitz and Skamania)

PNW-IPC Early Detection Rapid Response (EDRR) Species List 2012-2013

PNW-IPC Early Detection Rapid Response (EDRR) Species List 2013

Plant Family	Species	Common Name	South Central WA CWMA	HWY 12 - SR 410 CWMA	Chehalis River Watershed CWMA	Nisqually River Watershed CWMA	Class in WA
Aquatic Plants							
Hydrocharitaceae	*Egeria densa*	Brazilian elodea	X	X		X	B
Hydrocharitaceae	*Hydrilla verticillata*	hydrilla	X	X	X	X	A
Haloragaceae	*Myriophyllum aquaticum*	parrotfeather	X		X	X	B
Menyanthaceae	*Nymphoides peltata*	yellow floating heart	X	X			B
Wetland Emergent Plants							
Butomaceae	*Butomus umbellatus*	flowering rush	X	X	X	X	A
Lythraceae	*Lythrum salicaria*	purple loosestrife		X	X	X	B
Poaceae	*Phragmites australis*	phragmites	X	X	X	X	B
Poaceae	*Arundo donax*	arundo, giant reed	X	X	X	X	Monitor List
Terresetrial Plants							
Apiaceae	*Heracleum mantegazzianum*	giant hogweed		X	X	X	A
Aquifoliaceae	*Ilex aquifolium*	English holly		X	X	X	Monitor List
Asteraceae	*Silybum marianum*	milk thistle			X	X	A
Asteraceae	*Centaurea solstitialis*	yellow starthistle	X	X	X	X	B
Asteraceae	*Crupina vulgaris*	common crupina	X	X			A
Asteraceae	*Senecio jacobaea*	tansy ragwort	X	X		X	B
Boraginaceae	*Cynoglossum officinale*	houndstongue	X				B
Brassicaceae	*Isatis tinctoria*	dyer's woad	X	X	X	X	A
Brassicaceae	*Alliaria petiolata*	garlic mustard	X	X	X	X	A
Euphorbiaceae	*Euphorbia esula*	leafy spurge	X	X			B
Fabaceae	*Ulex europaeus*	gorse			X	X	B
Fabaceae	*Pueraria montana var. lobata*	kudzu	X	X	X	X	A
Fabaceae	*Genista monspessulana*	french broom			X	X	A
Geraniaceae	*Geranium lucidum*	shiny geranium			X	X	A
Lamiaceae	*Lamiastrum galeobdolon*	yellow archangel		X		X	B
Malvaceae	*Abutilon theophrasti*	velvetleaf	X	X			A
Nyctaginaceae	*Mirabilis nyctaginea*	wild four o'clock	X	X			A
Onagraceae	*Epilobium hirsutum*	hairy willowherb	X	X	X	X	B
Poaceae	*Cortaderia spp.*	pampas/jubata grass			X	X	Monitor List
Polygonaceae	*Polygonum cuspidatum, P. sachalinensis, P.polystachum P. bohemicum*	knotweed (Japanese, giant, Himalayan, Bohemian)	X	X			B
Ranunculaceae	*Clematis orientalis*	oriental clematis	X	X			A
Rosaceae	*Potentilla recta*	sulphur cinquefoil	X	X			B

PNW-IPC EDRR LIST DEVELOPMENT

- PNW IPC Board Members (e.g., S. Manning (IPC), S. Reichard (UW), W. DesCamp (WA State Noxious Weed Control Board) , L. Seebacher (Dept. of Ecology), T. Harrington (USDA Forest Service), S. Bautista (USDA Forest Service)
- WSDA (Washington State Dept. of Agriculture (G. Haubrich)
- County Weed Coordinators and CWMA Board Members (e.g., M. Hudson, R. Johnson, M. Baden, D. Jacobson, B. Wamsley, T. Davis, and N. Ness, K. Strathmann)
- WISC (Washington Invasive Plant Council, W. Brown), WSNWCB (WA State Noxious Weed Board, W. DesCamp)
- State and National Parks/Forests (L. Whiteaker and W. Arnesen, Mt. Rainier NP; C. Chandler, J. Leingang, L. Swartz, C. Bartlett, USFS)

Flowering rush, *Butomus umbellatus*
Class A Images by: Ben Legler

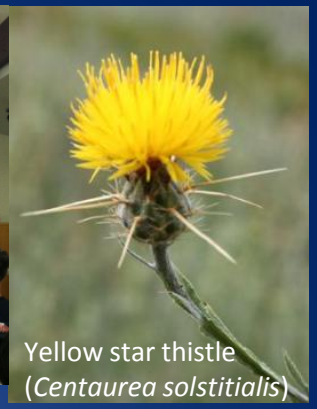
French broom, *Genista monspessulana*
Class A Image by: WSNWBC

Tansy ragwort, *Senecio jacobaea*
Class B Image by: Ben Legler

English holly, *Ilex aquifolium*
Monitor List Image by: Ben Legler

PNW-IPC EDRR VOLUNTEER TRAINING

Image: L. Seebacher


Yellow star thistle (*Centaurea solstitialis*)
Image: WSNWCB

- Species Identification: Workshop trainings (classroom and field) use herbarium specimens, images and live plant material

- Species Verification: 1) Photo of diagnostic characters, 2) Take specimen or, 3) Collect voucher specimen (sent to Hyde Herbarium, UW Burke)

- Reporting: Survey forms

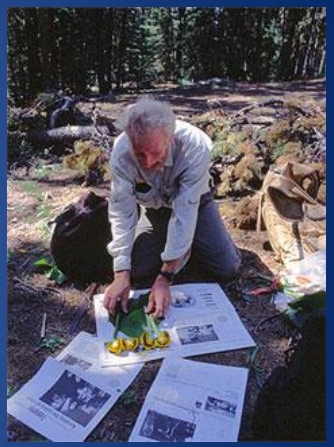


Image: R.G. Olmstead


Images: J.K. Combs

Giant hogweed, *Heracleum mantegazzianum*

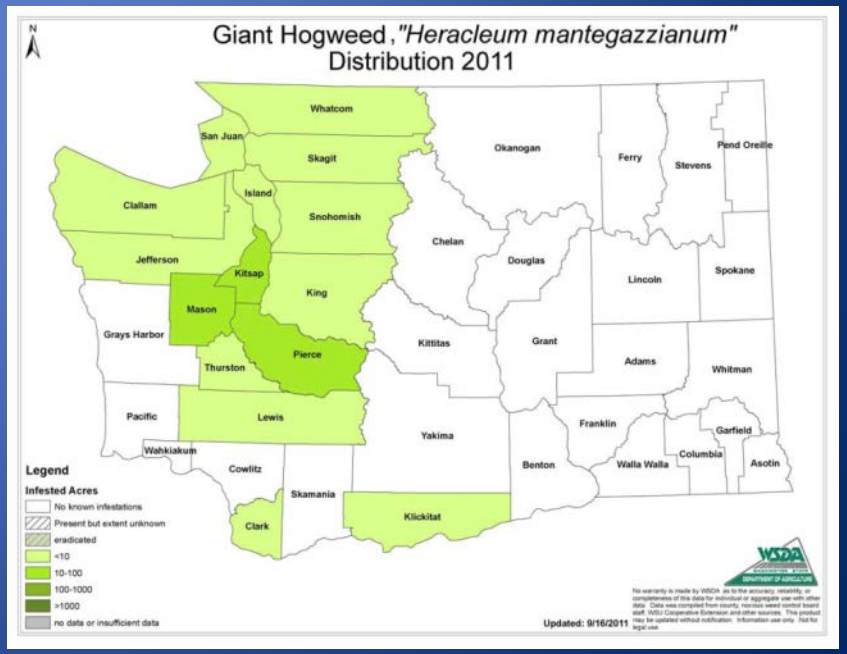
- Class A noxious weed
- Huge, perennial plant growing up to 20 ft. tall
- Stems are hollow, 2-4 inch diameter
- Purplish-red, **bumpy blotches** with **stiff hairs**
- Leaves compound, deeply divided with jagged edges, up to 5 ft. diameter
- Small white flowers in umbrella-like flat-top inflorescence

Images by: WSNWCB

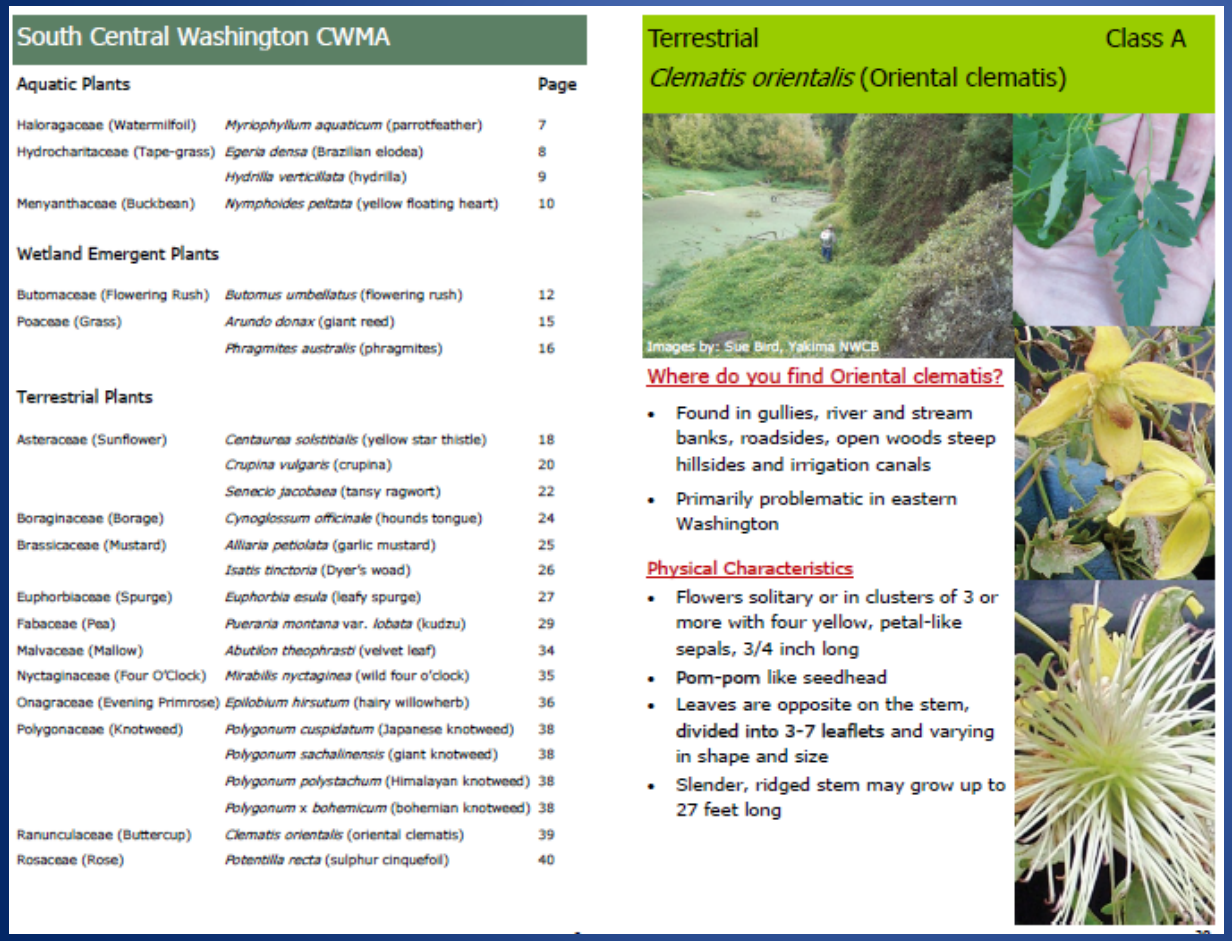
Giant hogweed, *Heracleum mantegazzianum*

- Warning: it contains a clear watery sap that can result in severe burns when exposed to the sun, causing blistering and painful dermatitis—do not touch it without protective clothing
- Grows in a wide variety of habitats, most common along roadsides, vacant lots, streams, rivers and open woodlands.

Jan Samanek, State Phytosanitary Administration, Bugwood.org



PNW- IPC EDRR VOLUNTEER TRAINING



South Central Washington CWMA

Aquatic Plants		Page
Haloragaceae (Watermilfoil)	*Myriophyllum aquaticum* (parrotfeather)	7
Hydrocharitaceae (Tape-grass)	*Egeria densa* (Brazilian elodea)	8
	Hydrilla verticillata (hydrilla)	9
Menyanthaceae (Buckbean)	*Nymphoides peltata* (yellow floating heart)	10
Wetland Emergent Plants		
Butomaceae (Flowering Rush)	*Butomus umbellatus* (flowering rush)	12
Poaceae (Grass)	*Arundo donax* (giant reed)	15
	Phragmites australis (phragmites)	16
Terrestrial Plants		
Asteraceae (Sunflower)	*Centaurea solstitialis* (yellow star thistle)	18
	Crupina vulgaris (crupina)	20
	Senecio jacobaea (tansy ragwort)	22
Boraginaceae (Borage)	*Cynoglossum officinale* (hounds tongue)	24
Brassicaceae (Mustard)	*Alliaria petiolata* (garlic mustard)	25
	Isatis tinctoria (Dyer's woad)	26
Euphorbiaceae (Spurge)	*Euphorbia esula* (leafy spurge)	27
Fabaceae (Pea)	*Pueraria montana* var. *lobata* (kudzu)	29
Malvaceae (Mallow)	*Abutilon theophrasti* (velvet leaf)	34
Nyctaginaceae (Four O'Clock)	*Mirabilis nyctaginea* (wild four o'clock)	35
Onagraceae (Evening Primrose)	*Epilobium hirsutum* (hairy willowherb)	36
Polygonaceae (Knotweed)	*Polygonum cuspidatum* (Japanese knotweed)	38
	Polygonum sachalinensis (giant knotweed)	38
	Polygonum polystachum (Himalayan knotweed)	38
	Polygonum x bohemicum (bohemian knotweed)	38
Ranunculaceae (Buttercup)	*Clematis orientalis* (oriental clematis)	39
Rosaceae (Rose)	*Potentilla recta* (sulphur cinquefoil)	40

Terrestrial Class A

Clematis orientalis (Oriental clematis)

Images by: Sue Bird, Yakima NWCB

Where do you find Oriental clematis?

- Found in gullies, river and stream banks, roadsides, open woods steep hillsides and irrigation canals
- Primarily problematic in eastern Washington

Physical Characteristics

- Flowers solitary or in clusters of 3 or more with four yellow, petal-like sepals, 3/4 inch long
- Pom-pom like seedhead
- Leaves are opposite on the stem, divided into 3-7 leaflets and varying in shape and size
- Slender, ridged stem may grow up to 27 feet long

- EDRR species ID booklet created for volunteers

Survey Form

PNW Invasive Species Council EDRR (Early Detection Rapid Response) Survey Form

Please return completed form to PNW IPC, University of Washington, Box 354115, Seattle WA 98195 OR e-mail to pnw.ipc.org@gmail.com

*** CWMA** (e.g., Nisqually River, Chehalis River, HWY 12 SR 410, South Central)

***Land Ownership If Known** (e.g., Gifford Pinchot National Forest, Nisqually Wildlife Refuge)

***Surveyed by:**

***Trail or Site Name:**

***Survey Date and County:**

Start Point (Lat/Long):

Stop Pt (Lat/Long):

***Describe Area Surveyed (e.g., 2 miles of trail, 10 feet into forest on both sides of trail or 1 mile of river bank, bank approx. 20 feet wide)**

Total Area Surveyed:

***Expenses (non-gas):**

***Travel Miles:**

(amount paid for any trail passes, maps, other survey supplies)

(total driving distance to calculate mileage expenses)

***Expense Description:**

***Volunteer Hours:**

(survey time - multiply hours by number of surveyors, travel time, data entry)

Survey Notes:

(anything else of note)

*** Required fields**

*EDRR Plant Name	*EDRR Plant Location Latitude	*EDRR Plant Location Longitude	*EDRR Plant Location Description	*Size of Infestation	*Percent Cover	*Growth Stage	*Habitat	Method If Controlled	Area If Controlled	*Notes
From Checklist (e.g., Phragmites australis)	dec. deg. (e.g. 47.579827)	dec. deg. (e.g. -121.502207)	distance from water, distance from trailhead or other landmarks, distance off-trail, etc	square feet	% cover over the area infested	V (veg), B (bud), F (flower), S (seed), D (dormant)	e.g. forest, meadow, riverbank, wetland, roadside	pulled, dug	square feet	photo taken, sample taken, voucher specimen collected, PNEDN App

Survey Form adapted from King County Noxious Weed Watcher Program, Sasha Shaw

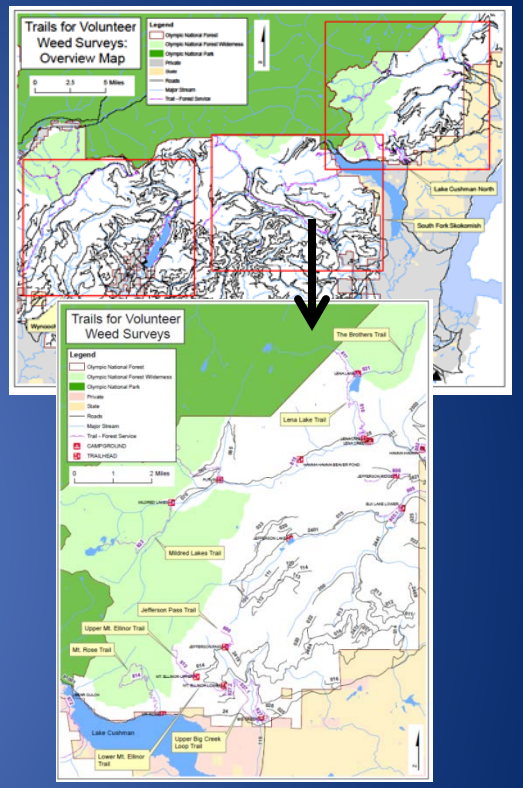
Survey Assignments

General Assignments:

- Any public land located within four CWMA's (National Forest, National Park, County and State Parks, Wildlife Rec. Areas, etc.)

Specific Assignments:

- Select trails and Wilderness Areas on US Forest Service Land (Olympic NF, Gifford Pinchot NF and Okanogan-Wenatchee NF—Naches Ranger District)
- Department of Natural Resources NAP (Natural Area Preserve) and NRCA (Natural Resource Conservation Area)

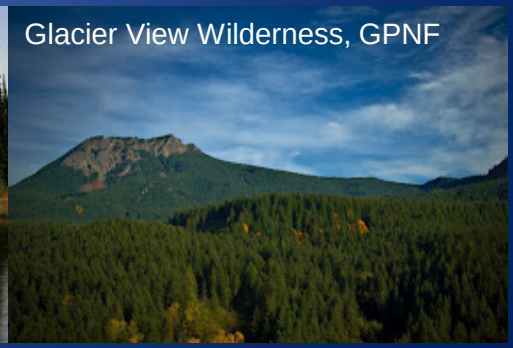


South Fork Skokomish Area, ONF


Columbia Hills NAP


Chehalis River Surge Plain NAP

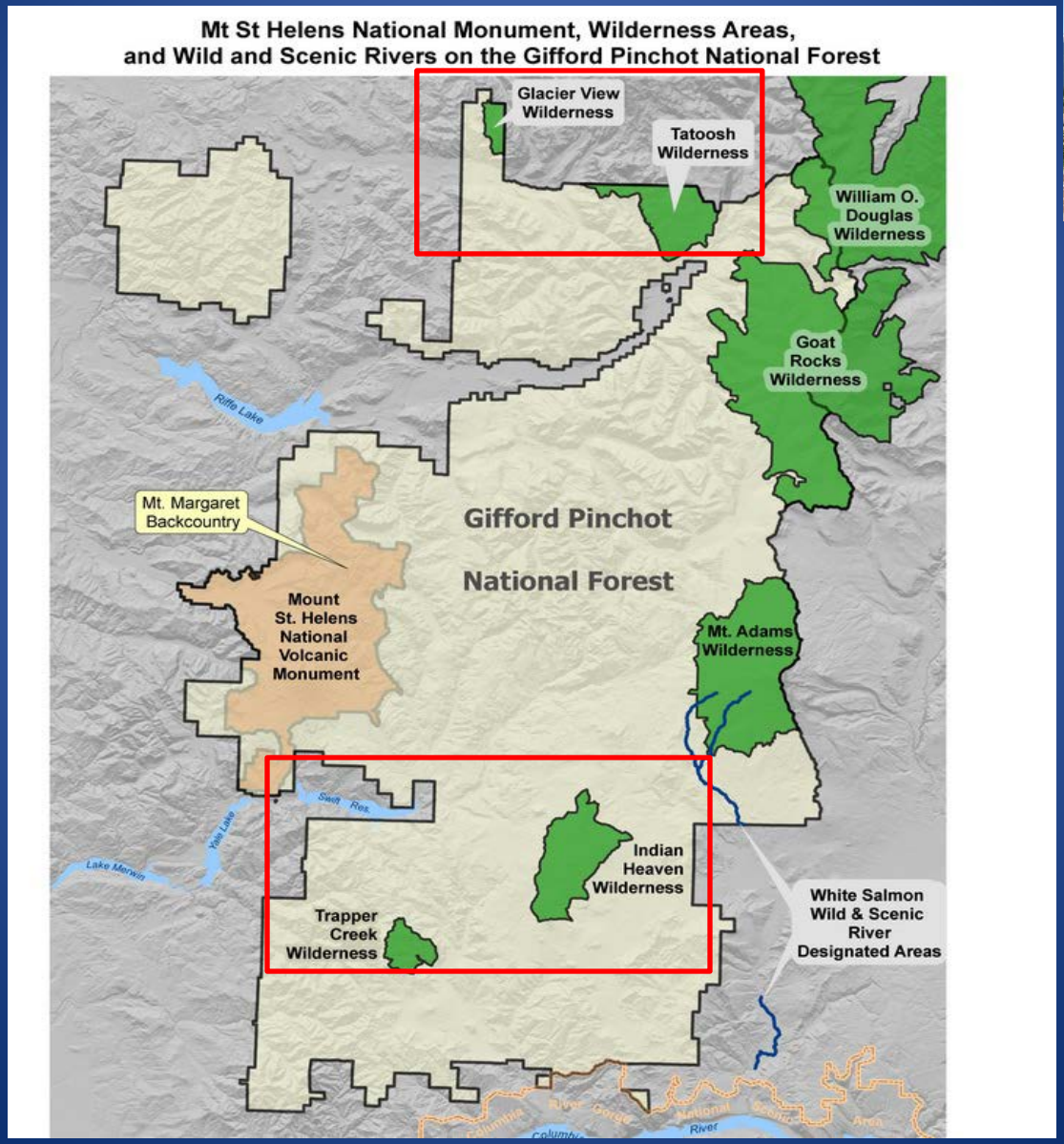

Indian Heaven Wilderness, GPNF


Glacier View Wilderness, GPNF

Gifford Pinchot National Forest Wilderness Areas

Targeting four Wilderness Areas 2013

- Glacier View
- Tatoosh
- Indian Heaven
- Trapper Creek



How are volunteer survey data used?

Images: R. Baetz

<u>Citizen Scientist Surveys reported to PNW-IPC:</u>

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Identification (Verification)

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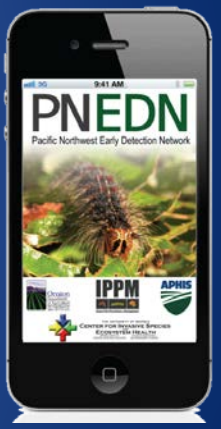
- Public land agency where species is found
- County Noxious Weed Boards
- EDDMaps
- Washington State Department of Agriculture (WSDA)
- Washington Invasive Species Council (WISC)
- State Noxious Weed Board
- If voucher specimen collected send to Otis-Douglas Hyde and WTU Herbaria

↓

Outcome Reporting

- EDDMaps App (Free Android and iPhone App)



Successes 2012-2013

- Coordinated with over 30 land managers, from 8 agencies covering 15 WA counties
- Conducted 7 trainings in eastern and western WA
- Trained 140 individuals to identify 30 target EDRR species and conduct surveys (81 signed up to participate)

# Surveys conducted	# Surveys that documented EDRR populations	Acres Surveyed	Miles Travelled	Volunteer Hours
115	49 (43%)	1,416	13,383	1,279

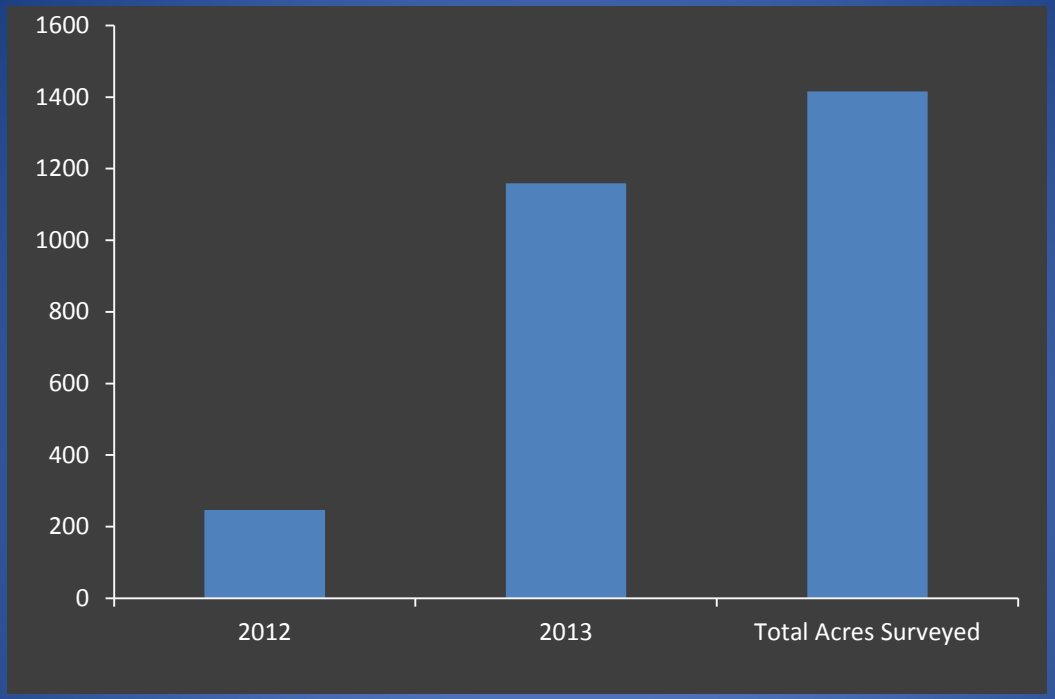
English holly , *Ilex aquifolium* (Monitor list) Image by: Ben Legler

shiny geranium, *Geranium lucidum* (Class A) Image by: Ben Legler

Tansy ragwort, *Senecio jacobaea* (Class B) Image by: Ben Legler

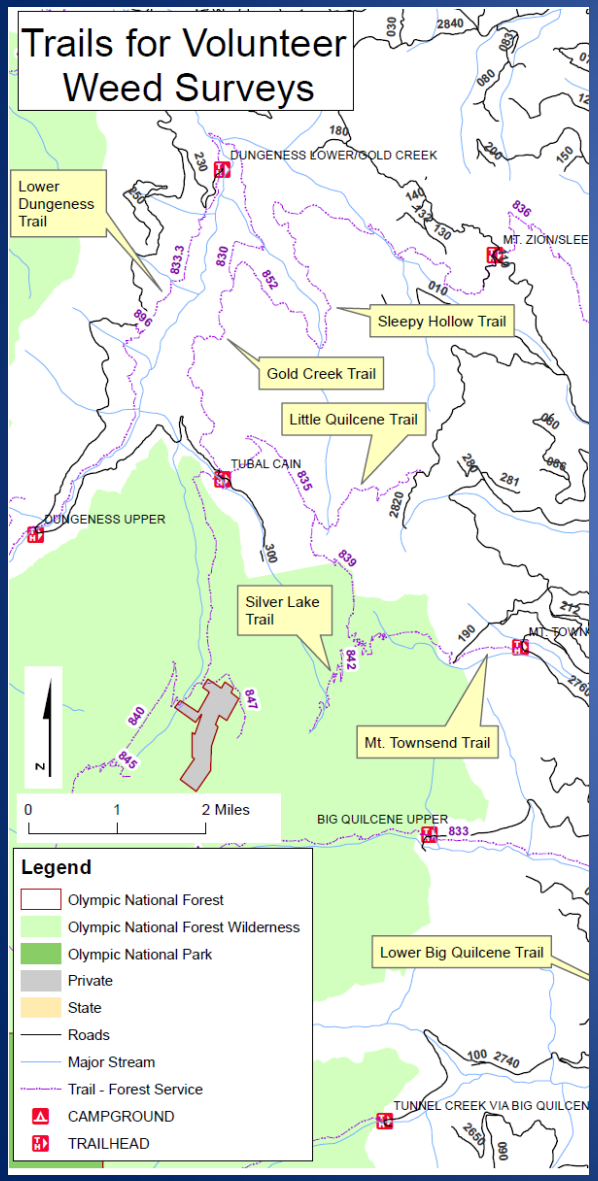
yellow archangel, *Lamiastrum galeobdoloon* (Class B) Image by: WSNWBC and W. DesCamp

Acres Surveyed by volunteers 2012-2013



The number of acres surveyed by volunteers increased 469% from 2012 (247 acres) to 2013 (1,159 acres) **indicating that our program is successfully growing** and volunteers have the potential to make a significant impact in the effort to search for and eradicate high priority invasive species across Washington State.

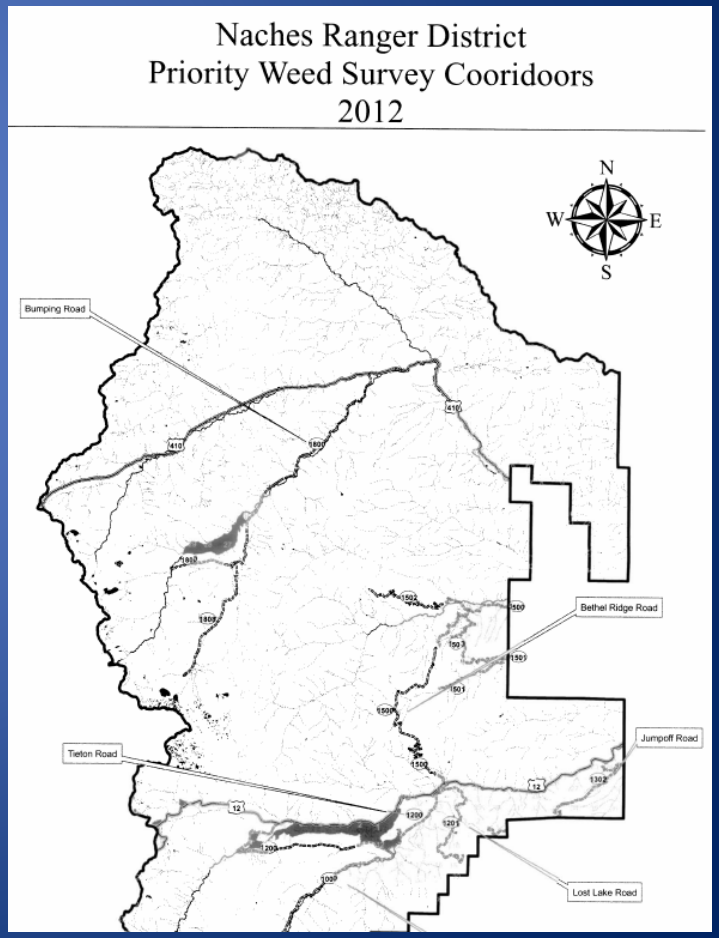
Successes 2012-2013



- Specific trail assignments motivate volunteers

Maps from Cheryl Bartlett (Olympic National Forest)

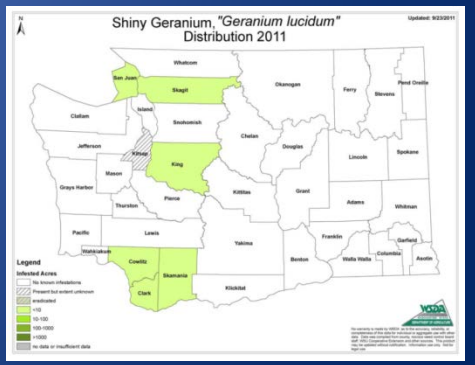
Maps from Jodi Leingang (USFS)



Volunteers make a difference

- Volunteer (Marianna Bissonnette) found a small population of a class A noxious weed, shiny geranium (*Geranium lucidum*) in Cowlitz County

Image by: Marianna Bissonnette at Hofstadt Bluffs Visator Center, Mt. St. Helens



- Within 24 hours of detection this population was eradicated. Angelica Velazquez, Cowlitz county noxious weed coordinator, continues to monitor the site

- Populations are currently limited in WA but extensive in NW Oregon

Volunteers make a difference

- Volunteer (Cyndy Dillon) removing populations of a class B noxious weed, tansy ragwort (*Senecio jacobea*) in the Olympic National Forest


Image by: Ben Legler


Cyndy holds a bouquet of tansy ragwort removed from trails and roads, Image by John Dillon


Tansy rossettes removed by volunteer
Image by: Carol Miltimore

- Many surveys documented this species and volunteers removed patches on roadsides but also in wilderness areas

Volunteers make a difference

- Volunteers bring new information regarding species distributions
- Volunteers (Carol and Jim Miltimore) found and documented *Arctium lappa*, a new priority species in the Gifford Pinchot National Park
- Gifford Pinchot botanists where aware that *Arctium minus* (lesser burdock) existed in the forest but Carol found and identified *Arctium lappa (greater burdock)*
- This species is not listed or monitored by the WA State but is on the priority invasive species list for the Gifford Pinchot National Forest

Jim Miltimore records GPS coordinates of *Arctium lappa* in the Gifford Pinchot National Forest . Photo by PNW-IPC volunteer Carol Miltimore

Volunteers make a difference

- PNW-IPC Volunteers teamed up with DNR volunteers to participated in surveys on Chehalis River Surge Plain (NRCA)

PNW-IPC citizen science volunteer (Richard Rice in foreground) conducting a survey with DNR volunteers in Preacher Slough, a small parallel tidal slough of the Chehalis River Surge Plain NAP (2013). Image by PNW-IPC volunteer Bud Hardwick

- They surveyed over 37 acres of the Chehalis River Surge Plain
- Partnership with DNR offered a unique opportunity for volunteers

Challenges/Lessons Learned

- Acquiring Funding
- Large scope of CWMA and the EDRR list (e.g., yellow star thistle EDRR in Kittitas but not in Klickitat Co.)
- Only 26 out of 81 volunteers conducted field surveys
- How to engage and motivate volunteers to participate? (e.g., more intensive trainings to build ID skills, provide specific trail assignments)
- Need to increase efficiency of data management and dissemination (e.g., develop on line reporting)

Future Directions and Goals

- Further cultivate partnerships with agencies in need of volunteer efforts (Forest Service, DNR etc.) and work to refine and adjust EDRR list
- Develop web-based survey reporting
- Partner and share information with other volunteer groups to document and eradicate EDRR species in WA State (e.g., Nisqually Land Trust, DNR, Mountaineers, King County Weed Watchers)

Questions and Comments

Julie K. Combs e-mail: pnw.ipc.org@gmail.com
phone: (615) 812-5295

http://www. pnw-ipc.org

Yellow floating heart (*Nymphoides peltata*)
Image by: Jen Parsons