



2013 Report of the Pacific Northwest Invasive Plant Council's (PNW-IPC) EDRR (Early Detection Rapid Response) Citizen Science Invasive Species Program

A biennial report summarizing key accomplishments from 2012 to 2013



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Mission Statement

To protect the Pacific Northwest's land and waters from ecologically-damaging invasive plants through scientific research, education, policy and an on-the-ground citizen science monitoring and eradication program

Objectives

Facilitate communication and to promote collection and exchange of information regarding all aspects of invasive plant status, control and management;

Educate the general public and legislators on the environmental and economic impacts of invasive plants;

Organize and/or support invasive plant management research efforts;

Serve in an advisory capacity for the continued needs for funding, research, management and control of invasive plants;

Provide a focus for the issues and concerns regarding invasive plants;

Review invasive plant management problems and activities and provide updated information to interested parties;

Provide forums where interested parties may participate in and share in the meetings and benefits from the information generated and promulgated by this Council

Executive Summary

In 2012, The PNW-IPC (Pacific Northwest Invasive Plant Council) developed and implemented an EDRR (Early Detection Rapid Response) Citizen Science Program working in partnership with the WA Department of Agriculture and other local, state and federal agencies with funding from the National Fish and Wildlife Foundation.

The primary goals of our EDRR program are to train citizen scientist to identify EDRR species and find new or undiscovered EDRR populations in order to:

- Support county, state and federal management agencies working to locate and eradicate invasive plant species
- Decrease newly established invaders
- Reduce cost and resources spent on management
- Decrease threats to biodiversity in PNW

To date our program has trained 140 EDRR citizen scientists to identify 30 target EDRR species and conduct surveys in urban, rural and natural areas on county, state and federal public lands. We conducted a total of seven trainings in both field and classroom setting in eastern and western Washington. Of the 140 trained, 81 citizens signed up to be volunteers for the PNW-IPC EDRR Citizen Science Invasive Species Program.

Volunteers have made significant impacts in effort to detect and eradicate invasive species in WA State over the last two years. We are very proud of our volunteers and the amazing work and contribution to our EDRR Citizen Science Invasive Species Program. In total, volunteers conducted **115 surveys covering over a thousand acres (1,416 total acres)** within **15 Washington counties**. A large portion of these surveys (**43% or 49 surveys**) **detected EDRR** invasive species and in many cases infestations were small enough that volunteers were able to manually remove them *in situ* before infestations had a chance to establish and spread. **Volunteers invested 1,279 hours** of survey time and **travelled 13,383 miles** to and from survey sites. Both positive (EDRR's found) and negative (no EDRR's found) survey reports that included GPS points of EDRR species found and area surveyed were sent to land managers responsible for eradication and monitoring. **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 has the potential to make a significant impact in the effort to search for and eradicate high priority invasive species across Washington State. For example, one volunteer documented the occurrence of a **Class A noxious weed, *Geranium lucidum*** (shiny geranium) in Cowlitz County **and within 24 hours this newly emerging infestation was eradicated. This site will be monitored for years to come to ensure any potential seed bank is depleted.**

Our goal is to expand our program and continue to build partnerships with the many individuals, agencies and organizations working to keep the growing list of invasive species at bay in Washington State and beyond.



From right to left: EDRR Citizen Science Program Director, Dr. Julie Combs and her daughter (Josephine); PNW – IPC board member and Department of Ecology Wetland Specialist, Dr. Lizbeth Seebacher and her two daughters (Abby and Tori); and Wendy DesCamp, Washington State Noxious Weed Control Board (WSNWCB) Education Specialist, played a key role in trainings and verification of EDRR species reported by volunteers.

Acknowledgments

First and foremost, the PNW IPC would like to thank the many volunteers who have made a significant impact in the effort to locate and eradicate newly emerging populations of EDRR invasive species in Washington State. **We are very proud of you!** We also thank the many individuals and partners who contributed to the development of our EDRR (Early Detection Rapid Response) invasive species list and contributed to training materials and outreach effort. **The Species List Committee:** W. Arnesen, W. Brown, J. Bush, C. Chandler, J. Combs, T. Davis, W. DesCamp, K. Hamel, G. Haubrich, D. Heimer, M. Hudson, D. Jacobson, R. Johnson, J. Leingang, S. Manning, N. Ness, S. Reichard, L. Seebacher, K. Strathmann, B. Wamsley, L. Whiteaker and State and Local Chapters of the WNPS. **Training Materials:** Selected plant identification information in this booklet was based off of EDRR postcards created and funded by WA State Noxious Weed Control Board, WSU Extension, WSDA and USDA Forest Service. S. Shaw contributed the template for survey forms. G. Haubrich provided CWMA maps. J. Combs, W. DesCamp, R. Mitchell, L. Seebacher and A. Sommargren developed this identification booklet. **Outreach Effort and partnerships:** WSDA, WSNWCB, USFS, WNPS, DNR, NPS, Otis Douglas Hyde Herbarium, WTU Herbarium, The Mountaineers, Nisqually Land Trust and many more!

Section 1: Project Activities, Outcomes & Accomplishments 2012-2013

There were numerous short and long-term benefits to the community and the environment. Immediate benefits to the community were (but not limited to) 1) an increase in public awareness of vital issues related to invasive species impacts, 2) opportunities for meaningful hands-on experiences for community members to be involved in conservation practice, 3) increased communication and collaboration among private landowners, NGO's, and state and federal agencies and 4) monitoring for invasive species on over a thousand acres of public that lead to the decrease in numbers of newly establishing invaders within 15 WA State counties. **Key long-term benefits and outcomes included:** 1) cultivation of lasting stewardship values related to local and national conservation issues and 2) improved wildlife habitat and 3) protected ecosystem and watershed health within target survey areas. Because our program is volunteer based, it is a cost effective means to maintain biodiversity, promote ecosystem health and ensure safe and memorable recreational opportunities for visitors on public lands.

Our program offered an important stewardship opportunity for local citizens to participate in the protection our national resources and to help maintain healthy ecosystems. The PNW-IPC EDRR volunteer citizen science program coordinated and partnered with over 35 individuals from eight agencies (e.g., WSNWCB, DNR, USDA Forest Service, NPS, County Parks, etc.) within 15 WA counties (San Juan, Whatcom, Clallam, Jefferson, Mason, Snohomish, Grays Harbor, Thurston, Pierce, Lewis, Cowlitz, Skamania, Kittitas, Yakima and Klickitat) in an effort to reduce invasive species in WA state. We conducted seven trainings in 2012-2013 in eastern and western Washington. We trained 93 Citizen Scientists to identify 30 EDRR priority species in 2012 and an additional 47 individuals were trained in 2013 bringing our total to 140 trained citizen scientists to date. Each volunteer has been trained to identify 30 EDRR species, conduct survey reports and learn how to eradicate the species if found.



Trainings were conducted in the field and in the classroom in eastern and western Washington. Every participant received a booklet (image to far left) with color images to help identify priority species during surveys.

We developed training materials which included identification booklets with color images and distribution information for the 30 target EDRR species and trained them how to use survey datasheets forms. When possible we provided volunteers with maps of priority search areas identified by partners (e.g., DNR, USDA Forest Service). Additional priority species lists were provided to volunteers with good botany skills. For example, our Gifford Pinchot and Olympic National Forest partners provided us with an additional list of site-specific priority species that volunteers could search for.

In 2012-2013, volunteers conducted 115 surveys covering 1,416 acres within 15 WA counties. The number of acres surveyed from our pilot year in 2012 to 2013 increased by 469% indicating a sharp increase in participation in our program in year two (2012 – 247 acres surveyed; 2013 - 1,159 acres). A large portion of the total surveys (43%) detected EDRR invasive species and in many cases infestations were small enough that volunteers were able to manually remove them *in situ* before they had a chance to establish and spread. **Volunteers invested 1,279 hours of survey time and travelled 13,383 miles to and from survey sites!** Both positive (EDRR's found) and negative (no EDRR's found) survey reports that included GPS points of EDRR species found and area surveyed were sent to land managers responsible for eradication. **Negative reports were considered just as valuable as positive reports because managers want to know where invasive species do not occur as well as where invasive species occur in order to guide volunteer survey efforts.**

Volunteers were extremely effective at finding and helping (directly and indirectly) to eradicate Class A and Class B EDRR species in WA State and helping to identify new priority species. For example, one volunteer documented the occurrence of a Class A noxious weed, *Geranium lucidum* (shiny geranium) in Cowlitz County. The volunteer reported the occurrence **and within 24 hours the Cowlitz County Noxious Weed Board coordinator was able to treat and eradicate this newly emerging infestation.** Many volunteers were able to immediately eradicate the infestation by hand-pulling. For example, several volunteers removed small infestations of the Class B noxious weed *Senecio jacobaea* (tansy ragwort) from trails in Wilderness Areas in National Forests and other areas on public land. **In all of these cases it is important to understand that when above ground biomass is removed it is imperative that sites are monitored for years to come to ensure that below ground biomass and potential seed banks are depleted.**



Left image: PNW-IPC volunteer Cyndy Dillon holding a bouquet of *Senecio jacobaea* (tansy ragwort) removed from trails and roadsides in the Olympic National Forest (2013). Photo by PNW-IPC volunteer John Dillon

One volunteer (Carol Miltimore) who is an expert botanist identified a new priority species in the Gifford Pinchot National Forest (*Arctium lappa*) and as a result this species is now added to the Gifford Pinchot priority weed list. Carol commented that...*Finding "new" plant species, researching and learning to recognize them -- that's the fun part and payoff of this project for me.* **Carol also expressed what many volunteers have expressed—they are excited about this program because it gives a deeper mission and experience to their outdoor hiking adventures.**

Right Image: PNW-IPC citizen science volunteer (Jim Miltimore) records GPS coordinates to document occurrence of a new priority invasive species (*Arctium lappa*) in the Gifford Pinchot National Forest (2013). Photo by PNW-IPC volunteer Carol Miltimore



There were several unexpected outcomes which resulted when we expanded our program to work directly with other volunteer organizations. For example, the PNW-IPC EDRR volunteers participated in surveys organized by Department of Natural Resources volunteer (DNR) volunteer groups. Three of our volunteers joined the annual Chehalis River Surge Plain (NRCA) canoe survey trip to search for priority invasive species.



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

On this trip, they surveyed 37 acres of Chehalis River Surge Plain (NRCA). In addition, two of our volunteers worked closely with DNR land managers to survey and carefully map priority EDRR species in targeted areas. These volunteers surveyed over 200 acres of land located within the Woodard Bay Natural Resource Conservation Area (NRCA). Another PNW-IPC volunteer is also a site steward for Nisqually Land Trust lands and conducted EDRR surveys in target areas.



PNW-IPC citizen science volunteer (Crow Vecchio) conducts an EDRR survey mapping invasive species on land owned and managed by the Nisqually Land Trust (2013). Photo by PNW-IPC volunteer Crow Vecchio

Lastly, one of our volunteers signed up to be a DNR site steward for two Nature Area Preserves (Badger Gulch and Cleveland Shrub Steppe Nature Area Preserves). These examples illustrate the importance of partnering with other volunteer groups working to create diverse opportunities for volunteer working to reduce the spread

and establishment of invasive species in Washington State.

Summary List of accomplishments:

- Developed preliminary list of potential invasive plants of concern sent to key federal and state regulatory, land management, research and other plant experts. Includes species of concern for each CWMA (Cooperative Weed Management Area).
- Reviewed preliminary list with committee of plant experts and County Noxious Weed Coordinators to review the preliminary list and identify those of highest concern for their invasive potential and impact for each CWMA. Additional species were included for certain National Forest or state lands for volunteers to add to their survey list per the land managers.
- Used Weed Risk Assessment tool (WRA) to verify and validate the list. We used the Seebacher Plant Risk Evaluation (PRE) tool to analyze the species for verification.
- Identified sites of concern for monitoring. Determined significant sites for surveying within the CWMA's and coordinators and local Noxious Weed Coordinator.
- Created identification tools (color photo ID booklet) and training materials for 30 invasive plants of highest concern.
- Conducted seven volunteer training workshops throughout the regions surrounding the CWMA's and several personalized trainings for citizen scientist that were unable to make the official trainings.
- Managed data collection and assisted volunteers and partners. Locations of the invasive species denoted by GPS units and/or other accurate mapping techniques with the approximate location and dimensions of the population marked on the map with directions to the site for follow up by land managers or regulatory officials.
- Positive occurrences were uploaded into the EDDMaps Database, a national and regional mapping system that tracks the distribution and abundance of invasive species.

Section 2: Lessons Learned and Next Steps

In 2012, we found that volunteers were motivated to participate in the program by giving them specific trail assignments for volunteers. As a result, in 2013 we made a concerted effort to work closely with DNR and the USDA FS botanists and managers (e.g., Cheryl Bartlett and Linda Swartz from the forest service and David Wilderman and Roberta Davenport from DNR) to identify specific survey areas. They provided us maps to direct volunteers to priority weed survey areas (trails, roads, natural areas, wilderness areas etc.). Volunteers who received specific assignments commented that they felt a deeper connection to the task and were enthusiastic about continuing to conduct surveys and participate in the program.

In 2013, we learned the importance of merging our volunteer efforts with other volunteer programs. We found that this created unique opportunities for our volunteers (e.g., conducting canoe surveys) by introducing them to new sites and also by exposing them to other volunteer organizations. This exposure also helped solidify and validate their passion as stewards of the environment. In the future, we will nurture these connections and branch out to collaborate with other volunteer organizations.

In the future we would also like to develop a web-based reporting platform. We found that processing surveys and dissemination information is time consuming and could be streamlined by an on-line reporting system. In addition, we would also like to offer more intensive trainings, especially for novice botanist who are just beginning to learn how to identify plants. More intensive field trainings would give volunteers further practice on their plant identification skills in order to build their confidence when conducting surveys.

Section 3: Outlets for Programmatic Findings

There were numerous outlets for programmatic findings (e.g., noxious weed boards, webinars, conferences) and occurrences were documented on the national database EDDMapS (Early Detection & Distribution Mapping System). Findings were also disseminated to the Washington State Invasive Species Council (WISC), The Washington State Noxious Weed Control Board (WSNWCB) and the WA State Department of Agriculture. The PNW-IPC EDRR volunteer citizen science program coordinated and partnered with over 35 individuals in effort to reduce invasive species in WA state (e.g., noxious weed coordinators, land managers, partner NGO's) from eight agencies (e.g., DNR, USDA Forest Service, NPS, County Parks, etc.). The following is list of specific outlets to external audiences:

2012

- November 28, 2012 - Presented results, framework and lessons learned from our EDRR Citizen Science Program at the Western Weed Coordinating Committee (WWCC) annual meeting in Las Vegas
- Sent 2012 Final Progress Report to all partners (e.g., DNR, NPS, USFS, USDA, state and county noxious weed coordinators etc.)
- Posted accomplishments on PNW-IPC website
- Sent end year results to all volunteers

2013

- June 3, 2013 - Presented results, framework and lessons learned from our EDRR Citizen Science Program at a nationally attended Webinar.
- Sent 2012 Final Progress Report to all partners (e.g., DNR, NPS, USFS, USDA, state and county noxious weed coordinators etc.)
- Posted accomplishments on PNW-IPC website
- Sent summary of accomplishments to the Washington State Noxious Weed Control Board (Alison Halpern, Wendy DesCamp) to include in their FY11-13 biennial report which is focusing on success of volunteer EDRR efforts
- Presented lessons learned and final results at WISC (Washington Invasive Species Council) committee meeting (September 18, 2013).
- Upcoming: present results at non-profit conservation organization. For example, the WA Native Plant Society has invited us to speak about the program this winter at chapter meetings.
- Upcoming: Invasive Species Workshop at the Tacoma Nature Center on November 5, 2013. We will discuss programmatic framework, lessons learned and future directions.

Section 4: Pacific Northwest Invasive Plant Council Steering Committee, Board Members and Special Program Director 2013 Steering Committee and Board Members

President - Steven Manning - Invasive Plant Control Inc.
Vice President – Sarah Reichard - University of Washington
Treasurer – Lizbeth Seebacher - Washington Department of Ecology
Secretary - Mandy Tu - Independent Consultant
Shawna Bautista – USDA Forest Service
Tim Harrington – USDA Forest Service
Bill Brookreson – Washington Native Plant Society
Simon Shamoun – Canadian Forest Service
Jennifer Zarnoch – Columbia Land Trust
Wendy DesCamp –Washington State Noxious Weed Control Board

Special Program Officer - Julie K. Combs, Program Director, WA State Early Detection Rapid Response (EDRR) Citizen Science Program

Question or Comments pertaining to the PNW-IPC EDRR Citizen Science biennial report can be sent via e-mail to pnw.ipc.org@gmail.com and further information about our program, the EDRR list, and general information about our organization can be found on our website: www.pnw-ipc.org



A stunning view of Mt. Rainier from the Goat Rocks Wilderness Area in Yakima County. Photo taken during an EDRR invasive species survey by Carol and Jim Militimore, two of our many dedicated PNW-IPC volunteers.