

King County Noxious Weed Control Program 2017 ANNUAL REPORT



OUR MISSION

Provide benefits to the environment, recreation, public health and economic resources of King County by preventing and minimizing harmful impacts of noxious weeds.



King County

Department of
Natural Resources and Parks
Water and Land Resources Division

Noxious Weed Control Program
206-477-9333
kingcounty.gov/weeds

2017 King County Noxious Weed Control Board

The King County Noxious Weed Control Board sets county weed control priorities, annually adopts the county weed list, and oversees the Noxious Weed Control Program throughout the County according to the requirements of the State Noxious Weed Law, RCW 17.10. The Board was activated by the King County Council on August 7, 1992 in response to a citizen's petition. The Board produces this Annual Report on the performance and activities of the Noxious Weed Control Program.

The Board is comprised of five volunteer citizens representing one of five weed districts within the County. Board members are appointed by the King County Executive and confirmed by the King County Council. Also, one staff person from WSU Extension serves as a non-voting member.

The Program thanks the following Board Members for serving on the King County Noxious Weed Control Board in 2017:

Scott Moore, Chair, Board District 1

Becky Chaney, Board District 2

John Browne, Board District 3

Grace Stiller, Board District 4

Eldon Murray, Board District 5

Jennifer Andreas, WSU Extension

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2017 King County Noxious Weed Control Program Staff

Program Manager: Steven Burke

Communications: Sasha Shaw

Office Administration: Denise Liguori

Education Assistant: Nathan Dolton-Thornton

Noxious Weed Specialists

County: Roy Brunskill

State and Federal: Tricia MacLaren

Aquatics: Ben Peterson

Region Leads:

Matt Below

Mattia Boscolo

Mary Fee

Ashley Gould

Karen Peterson

Daniel Sorensen

Patrick Sowers

Maria Winkler

Riparian Team:

Justin Brooks

Sayward Glise

Erin Haley

Randy Ladowski

Field Assistants:

Matt Fineman

Kirk Masee

Marta Olson

Sara Price

Special thanks to:

Patrick Sowers for data analysis and content; Tricia MacLaren, Roy Brunskill, Ben Peterson, Maria Winkler, Karen Peterson, Randy Ladowski, Justin Brooks and Steve Burke for content and editing; Sasha Shaw for content, editing and production management; and Megann Devine for layout and design.

For more information:

206-477-9333 or kingcounty.gov/weeds

Letter from the Board

Thank you for your interest in our annual report. And a special thank you to everyone who has made this another important year for providing benefits to King County's environment, economy, recreation and public health through noxious weed control.

As you know, noxious weeds and other invasive plants cause a range of serious impacts to our valued assets. The King County Noxious Weed Control Board provides citizen oversight to the King County Executive and Council's efforts to minimize these impacts through the operations of the Noxious Weed Control Program, which resides within the Department of Natural Resources and Parks, Water and Land Resources Division. The Board is grateful for the strong commitment to noxious weed control services made by the Executive and the Council, as illustrated in the results of this report.

Effective noxious weed control is a long term endeavor and can only be successful with widespread active participation of landowners and communities in the stewardship of their lands. Your support is the key to the success of the program, enabling us to exceed our goals in weed control, public outreach and education. This 2017 Annual Report summarizes the outstanding achievements that you have made possible through your participation and support.

We hope you enjoy reading about our work, and we look forward to working with you again over the coming months as we accomplish even more together to steward King County's stunning landscapes.

Thanks again for your interest and support for this important work.

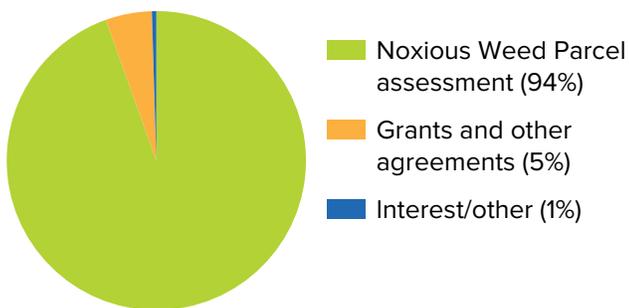
Grace Stiller, Chair

King County Noxious Weed Control Board

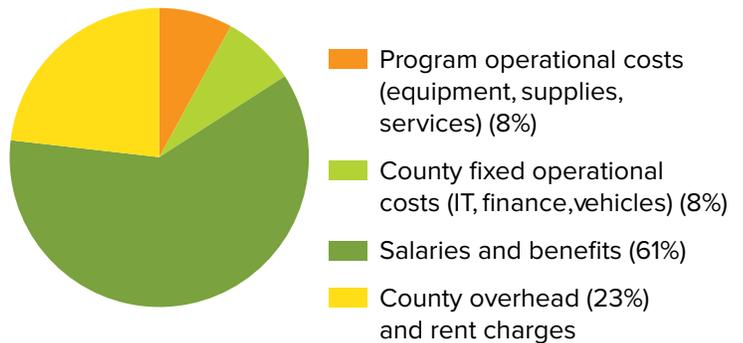


Photo: Erin Haley

Program Revenue: \$2,455,893



Program Expenditure: \$2,543,771*



*Difference between revenue and expenditure covered by fund balance.

Program Goals

- **Educate** the community about prevention and management of noxious weed infestations and increase participation in noxious weed control activities.
- **Eradicate** existing infestations of Class A noxious weeds.
- **Control** regulated Class B and Class C noxious weed infestations below levels of significant impact.
- **Implement** early detection and rapid response for infestations of new noxious weeds.
- **Support** the management of widespread noxious weeds and facilitation of more effective, coordinated landscape-scale control efforts.

Overview of Program Activities

King County works in partnership with communities to protect the environment, agriculture, economy and public health by reducing the establishment and spread of noxious weeds throughout the county.

The Noxious Weed Control Program manages the threat of noxious weeds by assessing the risk each species poses and then acting appropriately to manage those risks. We use four key actions: prevention, eradication, containment and protection of key assets. For new noxious weed infestations, the best investment of public funds is early detection and rapid eradication. For well-established noxious weed infestations, we work with land managers to reduce impacts on important resources.

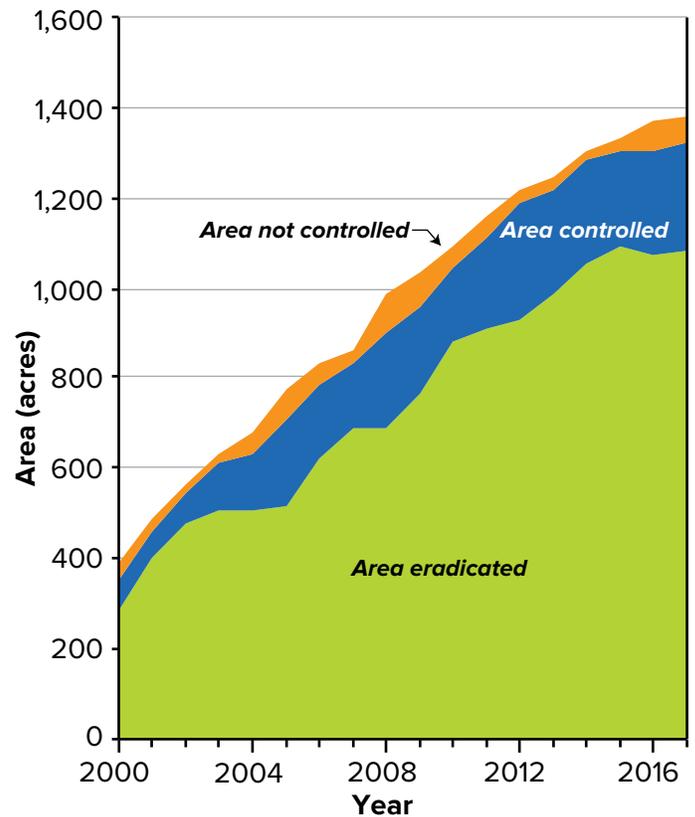
Effective management of noxious weeds relies on the combined effort of all levels of government, the community and industry. The Program is committed to supporting land managers who are actively managing their noxious weeds cooperatively with their neighbors and the greater community.

In 2017, the Program worked directly with over 4,400 landowners and agencies with noxious weeds on their properties and achieved voluntary control on 96 percent of the infestations of state regulated weeds. The Program surveyed 12,774 infestations on properties, rivers and rights-of-way, identifying 537 acres infested by noxious weeds. In total, property owners and program staff controlled 471 acres of regulated and priority riparian noxious weeds in King County.

Since 1996, the Program has eradicated 78 percent of the total area infested by regulated noxious weeds, resulting in approximately 1,080 acres free of noxious weeds. Overall, 44 percent of all the sites tracked by the Program are considered dormant or closed, meaning noxious weeds have not been present for three or more years. These 7,515 dormant sites represent a high level of achievement and sustained effort by the Program and the property owners of King County.

In 2017, Program staff also responded to over 1,000 public inquiries about noxious weeds and reports of noxious weed infestations, and provided information to the public through the Program's website, social media, brochures, newsletters, workshops, presentations and community events.

Control of Noxious Weeds in King County



2017 Major Program Accomplishments

Number of property owners contacted or assisted	4,421
Number of infestations surveyed	12,774
Number of infestations controlled	12,355
Number of new infestations found	447
Acres of weeds controlled by property owners	162
Acres of weeds controlled by program	309
Percent of the number of sites controlled by owner vs. program	65% vs. 35%

2017 Education and Outreach Accomplishments

Information booths, outreach events	55
Workshops, presentations, field trips	58
Responses to public inquiries about noxious weeds and weed reports	1,112
Participants in workshops and field trips	2,180
Newsletter subscribers	2,834
Contacts at outreach events	8,865
Brochures and bulletins distributed	16,331
Blog visitors	18,728
Website visitors	285,314

Major Noxious Weeds in King County: 2017 Snapshot

Top Class A Weeds in King County

Garlic Mustard
534 active sites ²



8% eradicated ¹
100% controlled ¹

Giant Hogweed
306 active sites ²



85% eradicated ¹
100% controlled ¹

Milk Thistle
57 active sites ²



37% eradicated ⁵
98% controlled ⁵

Goatsrue
24 active sites ¹



44% eradicated ¹
80% controlled ⁵

¹ No change from 2016

² More sites than 2016

³ Fewer sites than 2016

⁴ Percent up from 2016

⁵ Percent down from 2016

Top Regulated Class B Weeds in King County

Tansy Ragwort
5,020 active sites ²



37% eradicated ⁴
95% controlled ⁵

Purple Loosestrife
1,071 active sites ²



28% eradicated ¹
96% controlled ¹

Orange Hawkweed
482 active sites ³



24% eradicated ⁴
99% controlled ¹

Spotted Knapweed
473 active sites ²



56% eradicated ⁵
96% controlled ⁴

Yellow Hawkweed
272 active sites ³



34% eradicated ⁴
97% controlled ⁵

Sulfur Cinquefoil
256 active sites ²



45% eradicated ¹
97% controlled ¹

Dalmatian Toadflax
228 active sites ²



51% eradicated ⁵
96% controlled ⁵

Policeman's Helmet
186 active sites ²



61% eradicated ¹
94% controlled ⁵

Garden Loosestrife
178 active sites ³



10% eradicated ⁴
91% controlled ⁵

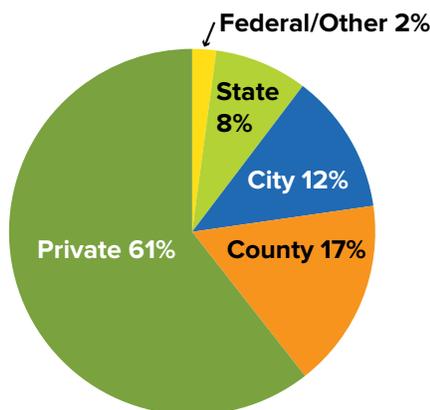
Diffuse Knapweed
125 active sites ²



63% eradicated ⁵
99% controlled ¹

Infestations by Property Type

Percent of sites in each category



Definitions (RCW 17.10, WAC 16-750)

Eradicate:

Completely eliminate a noxious weed within an area of infestation.

Control:

In a given year, prevent seed production and dispersal of parts capable of forming new plants.

Class A:

Eradication required by State Law due to limited distribution in the state and potential significant impact to the state's economy and environment.

Regulated Class B:

Control required by State Law. Class B weeds are regulated in areas of the state where they are limited in distribution to prevent further spread.

County Lands Weed Control

King County agencies are responsible for managing noxious weeds on approximately 4,400 properties and over 1,400 linear miles of road right-of-way. In 2017, County agencies had an outstanding level of noxious weed control. Only two complaints were made regarding noxious weeds on County owned properties and the responsible agency controlled the infestations before seed dispersal in both cases.

In 2017, 25 species of regulated noxious weeds were found on county owned properties. The top five were tansy ragwort, yellow hawkweed, purple loosestrife, orange hawkweed and garlic mustard (listed in order from high to low number of sites).

Program staff surveyed 2,237 sites on county managed lands. Control was achieved on 98.6% of sites. Since 2003, the county agencies' high level of noxious weed control has resulted in over 800 noxious weed sites that have achieved dormant status (no weeds observed for three or more years).

In addition to controlling regulated weeds, the King County Parks and Recreation Division controlled 365 acres of other noxious weeds and invasive plants that negatively impact parks and open space. This was a 40 percent increase in area controlled compared to 2016.

Early Detection and Rapid Response Success Story

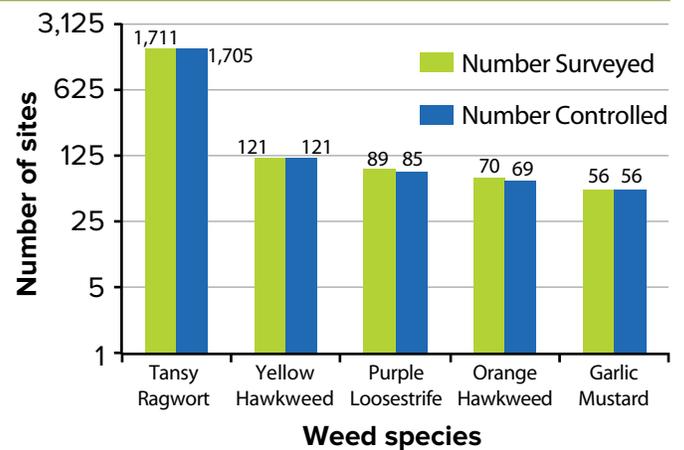
In 2017, a new Class A noxious weed, ricefield bulrush, was identified growing in a county mitigation site by an observant county employee. There is only one other known location of this species in Washington and it has the potential to adversely impact wetland and aquatic lands in King County. Immediately upon positive identification, Program noxious weed specialists applied the recommended aquatic herbicide to the infestation, with a follow up treatment later in the summer. After monitoring the effectiveness of these control efforts, future management plans will be developed in 2018.



Photo: Roy Brunskill

Ricefield bulrush, a new Class A noxious weed identified on a county property in 2017.

Top Five Regulated Noxious Weeds on County Lands



Non-Regulated Noxious Weeds Controlled by King County Parks and Recreation Division in 2017		
Weed Species	Number of Park Sites	Acres Controlled
Blackberry	54	100
Butterfly Bush	13	4
Common Teasel	12	6
English Holly	15	30
English Ivy	9	10
Knotweed	23	17
Poison Hemlock	9	10
Scotch Broom	18	18
Thistle	44	51
Other Species	44	28

Control of Regulated Noxious Weeds on County-Managed Lands 2017		
Agency	Number of Sites Surveyed	Percent Sites Controlled
Road Services	1,892	99.8%
Parks and Open Space	66	96%
Stormwater Services	120	98%
River and Floodplain Management	35	94%
Facilities Management	13	92%
Solid Waste	5	100%
Metro Transit	3	100%
Wastewater	3	100%

State and Federal Lands

State and federal agencies own more than 3,700 parcels within King County, comprising 38 percent of its area. In 2017, there were 370 active regulated noxious weed sites on state and federal properties, including 19 new sites. Staff surveyed 94 percent of the active sites and verified that control was achieved on 97 percent of the surveyed sites and 89 percent of the area infested.

In addition, the Washington State Department of Transportation (WSDOT) maintains 18 state highways that traverse King County, covering 368 linear miles. In 2017, program staff surveyed 751 regulated noxious weed sites on state highways, including 10 new sites. Through cooperation between WSDOT and Program staff, noxious weeds were controlled on 99 percent of the sites surveyed on state highways.

Highlights of the Program's successful working relationships with state and federal land managers in 2017 include:

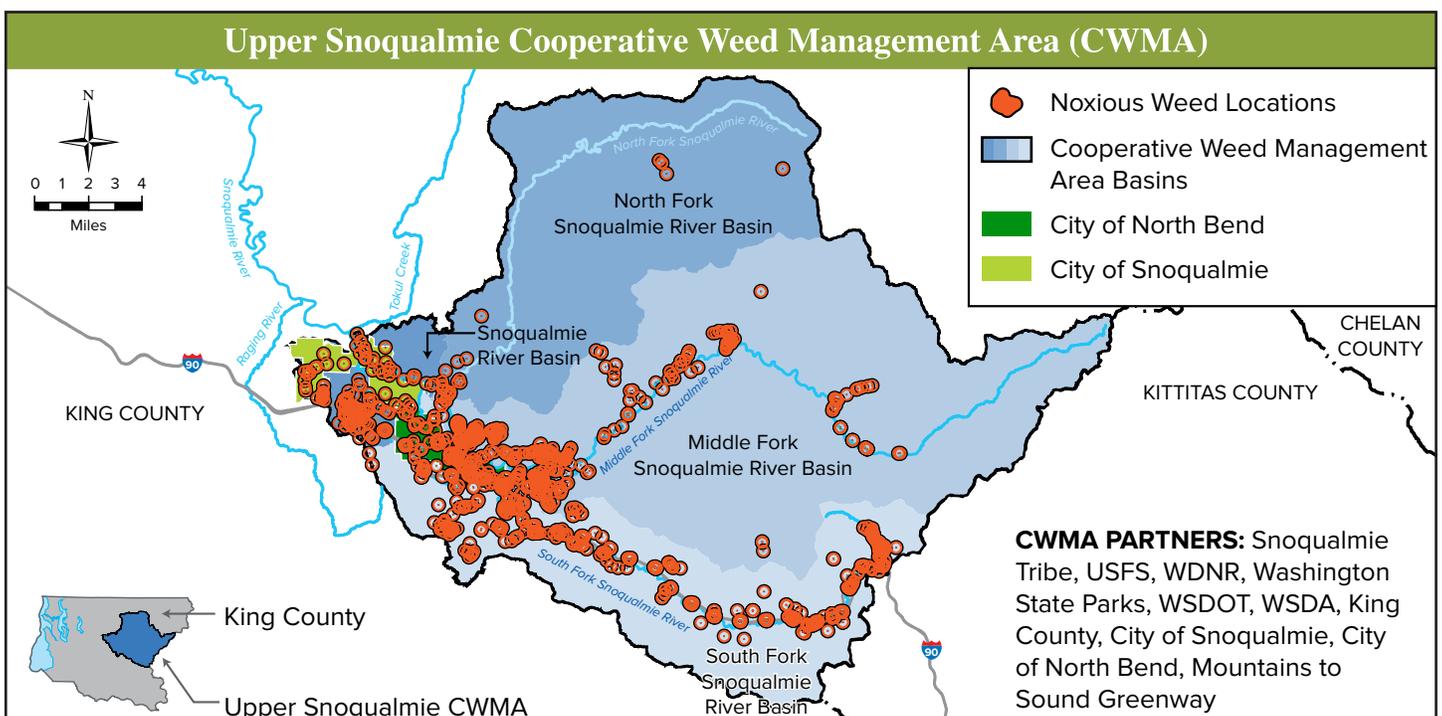
- Facilitated the Upper Snoqualmie Cooperative Weed Management Area (CWMA) to foster collaboration among tribal, federal, state, county, cities and NGOs in order to more effectively manage noxious and invasive weeds in the project area (see Upper Snoqualmie CWMA map).
- Controlled significant areas of noxious weeds in state-owned riparian areas through the Washington Department of Natural Resources (WDNR) provision of Puget Sound Corps crew time (see Puget Sound Corps Highlights Section).



Photo: Tricia MacLaren

Purple loosestrife at Lake Sammamish State Park.

- Collaborated with the Washington State Patrol and Washington State Department of Transportation for successful control of a new priority shiny geranium site.
- Partnered with the U.S. Forest Service in surveying and controlling noxious weeds in the Mt. Baker-Snoqualmie National Forest, including the first known infestation of houndstongue.
- Collaborated with the Federal Department of Commerce for control of loosestrife on Portage Bay and Lake Washington.
- Achieved successful control on state highways of priority species including European hawkweed, rush skeletonweed, and yellow starthistle.
- Collaborated with the Washington State Parks and Recreation Commission for successful control of noxious weeds within state parks including several new shiny geranium sites.



Puget Sound Corps in King County

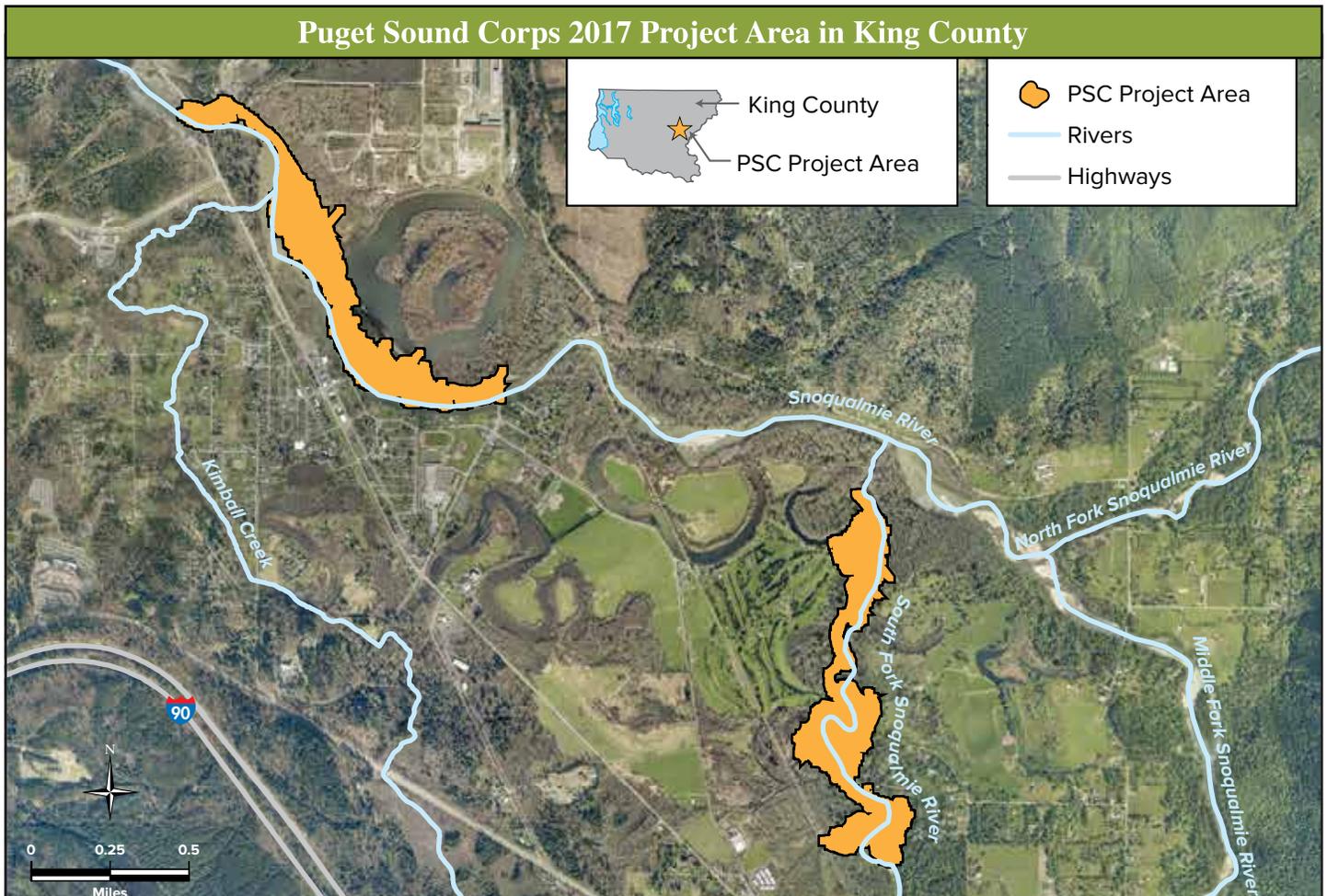
In 2017, King County was given an opportunity by the Washington Department of Natural Resources (WDNR) to utilize 14 crew days for the survey and control of noxious weeds along riparian corridors. These work crews were part of the Puget Sound Corps (PSC) Jobs Initiative funded by the State Legislature to protect Puget Sound and to provide training and work experience for young people in Washington.

WDNR designated EarthCorps to provide field crews for the Program's projects. Noxious Weed Program staff directed the six person crews in surveying and controlling knotweed on the Snoqualmie River near the cities of Snoqualmie and North Bend (see Puget Sound Corps map). The PSC crews controlled knotweed on 111 acres of riparian habitat over 3.3 riverbank miles. These noxious weed infestations were actively degrading the environmental and recreational values of public lands in King County. This contribution from WDNR and the partnership with EarthCorps provided a significant benefit to the County. Partners in PSC projects in 2017 included WDNR, the Snoqualmie Tribe, the City of Snoqualmie and EarthCorps.



Photo: Tricia MacLaren

PSC crew member treating knotweed 2017.



Port of Seattle and Cities

The Port of Seattle and the 39 cities and towns within King County all had generally excellent results controlling noxious weeds within their jurisdictions. Program staff surveyed 1,675 noxious weed sites and documented control of 96 percent of the sites.

Of the 31 regulated noxious weed species known to be on areas managed by the Port of Seattle and cities, the top four most abundant species are tansy ragwort, purple loosestrife, spotted knapweed and garlic mustard.



Photo: Jennifer Andreas

Larinus obtusus mating and laying eggs on spotted knapweed at the Muckleshoot Casino site.

Most Abundant Noxious Weeds on Port of Seattle and City Properties in King County in 2017

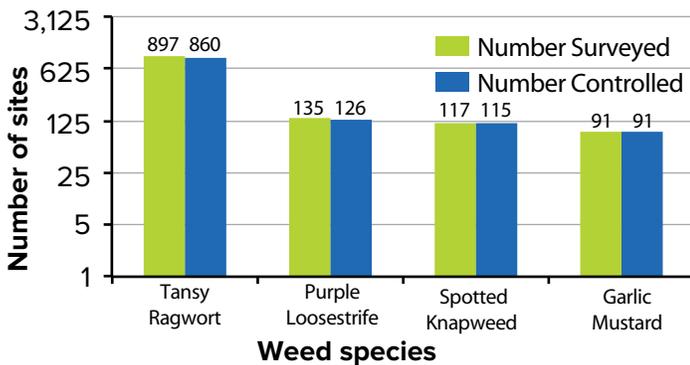


Photo: Jennifer Andreas

Noxious weed specialist looking for evidence of biocontrol agents on spotted knapweed.

Biological Control Activity Report

The Program partners with Washington State University Extension's Integrated Weed Control Project (IWCP) to identify weed species and infestations that can be effectively addressed through biological control. For noxious weed species that have approved biological control agents available, this method can be a cost-effective way to reduce impacts over the long term, especially when infestations are large and/or remote and where there are insufficient resources available for more expensive methods.

Definitions

Biological Control (or biocontrol):

the control of a pest by the introduction of a natural enemy or predator.

Approved Biocontrol Agent:

an insect or other organism that has been approved for use in the United States by the United States Department of Agriculture - Animal and Plant Health Inspection Service for the control of a particular pest species.

Noxious Weed	Biocontrol Agent(s)	2017 Locations
Scotch broom	<i>Bruchidius villosus</i> (seed-feeding beetle)	Discovery Park, Maury Island, Green River/Tacoma Watershed
	<i>Exapion fuscirostre</i> (seed-feeding weevil)	Discovery Park, Maury Island, Green River/Tacoma Watershed
Spotted and meadow knapweed	<i>Bangasternus fausti</i> (seed-feeding weevil)	White River, Muckleshoot Casino, Stevens Pass
	<i>Cyphocleonus achates</i> (root-feeding weevil)	Muckleshoot Casino
	<i>Larinus minutus</i> and <i>L. obtusus</i> (seed-feeding weevils)	White River, Muckleshoot Casino, Stevens Pass, Green River/Tacoma Watershed, Federation Forest
Purple loosestrife	<i>Galerucella spp.</i> (foliage-feeding beetle)	UW Bothell, Kelsey Creek West Tributary
	<i>Hylobius transversovittatus</i> (root-feeding weevil)	Mercer Slough, UW Bothell, UW Seattle, Snoqualmie River
Dalmatian toadflax	<i>Mecinus janthiniformis</i> (stem-boring weevil)	Green River – Tacoma Watershed
Yellow toadflax	<i>Mecinus janthinus</i> (stem-boring weevil)	Green River – Tacoma Watershed

Special Program Initiatives for 2017-18 Biennium

In addition to funding for the continuation of the base program, the Noxious Weed Control Program successfully implemented several 2017-18 budget initiatives to address noxious weeds of significant concern and increased demand.

	Initiative	Goal	2017-18 Target	2017 Status
	Base program	Achieve control of regulated noxious weeds and engage county residents as active participants.	Maintain past performance levels including 12,000 sites surveyed, 97 percent sites controlled, 4,000 property owners contacted, 95 outreach events/classes.	On target: 12,774 sites surveyed, 96 percent sites controlled, 4,400 property owners contacted or assisted, 113 outreach events/classes.
1	Increased control for regulated weeds	Survey and control all known regulated noxious weed sites.	Survey all known sites with regulated weeds. Reach 850 additional sites.	On target: Surveyed 95% of known sites. Surveyed 58 infested acres more than in 2014, discovered 1,126 new sites from 2015-17.
2	Garlic mustard infestation control	Increase survey and control for garlic mustard to meet increased spread.	Survey and control minimum of 17 acres on 379 sites and any new sites.	Exceeded target: Controlled a total of 19 acres with 527 infestations (including 31 new sites).
3	Aquatic weed control	Assist landowners in meeting their aquatic noxious weed control responsibilities.	Develop 1-2 Integrated Aquatic Vegetation Management Plans (IAVMs); survey 3-6 additional lakes; assist landowners with priority aquatic weed control; coordinate volunteers.	On target: Worked on 3 IAVMs; surveyed 3 additional lakes; assisted landowners by controlling 459 aquatic weed sites; coordinated volunteers.
4	Cooperative Weed Management in riparian areas	Continue and expand grant-funded cooperative riparian weed control projects on major rivers and key watersheds.	Survey 39 river miles, 625 acres. Control 675 sites. Contact 500 property owners. Two-three homeowner classes and one professional workshop.	Exceeded target: Surveyed 93 river miles, 1,961 acres. Controlled 2,137 sites. Assisted 1,606 property owners. Held 5 homeowner and 3 professional workshops.
5	Equity and Social Justice with outreach to non-English speakers and underserved populations	Begin to address the County's Equity and Social Justice Goals, including the Executive's Translation Order, and helping underserved communities.	Develop 1-2 non-English outreach materials. Translate 2-3 program brochures. Hold 1-2 community outreach events with limited English or underserved groups. Assist 40-60 low-income residents.	Exceeded target: Created 5 new non-English materials, translated web page. Held Spanish language workshop and hosted booths at 7 events serving non-English speaking populations. Assisted 56 low-income or elderly residents.
6	IT enhancements for greater work efficiency	Increase efficiency of core work processes through improvements in database design and mobile data capabilities.	Integrate data into single database; develop mobile data collection; manage program databases, create maps, analyze data; increase time staff are in the field.	On target: Successful second year of implementing mobile data collection system and continued integration of data into single internet-based system. Time for data entry reduced by 90%. Overall efficiency increase of 9%.
7	Weed Watchers Community Participation Program	Further develop the Weed Watcher volunteer program.	Train 15-25 volunteers to survey for weeds on 20-25 trails or recreation areas; improve data reporting and management processes.	Exceeded target: 31 new volunteers trained, 36 trails surveyed. Continued to improve and simplify data reporting process.

■ Exceeded target

■ On target

Initiative 1:

Increased control of regulated noxious weeds

The Program increased levels of control of regulated Class A, B and C noxious weeds in 2017. The Program surveyed 95 percent of all known infestations of noxious weeds in the county, including 447 new sites located during the year, and achieved control of 96 percent of sites surveyed. In addition, the Program surveyed 58 more infested acres in 2017 than in 2014.

The increased level of resources has resulted in increased long-term weed control. Program staff located 1,126 new noxious weed sites from 2015 to 2017 and marked 2,036 sites dormant in the same time period. Dormant sites have had no noxious weeds present for at least three years and are considered eradicated.

Additionally, increasing the length of season for noxious weed specialists has allowed more time for building collaborative relationships with property owners, which is essential for achieving long-term stewardship and sustained weed control results. Also, as more sites are successfully eradicated, Program staff have had more time to tackle larger, more complex infestations, reducing the impact of regulated noxious weeds in the County.



Photo: Marta Olson

Controlling purple loosestrife, a regulated noxious weed.

Initiative 2:

Increased control of garlic mustard

Due to its ease of spread, seed longevity and the challenges of detection, garlic mustard has increased dramatically in King County. There were only a few known locations when it was first found in 1999. By 2017 there were 578 known sites in King County, distributed over a wide area including many parks and private properties in Seattle, Bellevue and other cities, and extensive areas along the Cedar River.

To meet the growing challenge of garlic mustard, the Program increased resources for survey, control and outreach as well as participating in a regional working group seeking improved control methods.

With additional resources, the Program was able to search for garlic mustard over more area, allowing for the protection of additional forest and riparian habitat. In 2017, the Program searched approximately 1,000

acres for garlic mustard, including 400 acres on the Cedar River, an increase of 110 percent from 2014.

In addition to protecting more area from infestation, the Program reduced the overall footprint of garlic mustard by 15 percent since 2014. In 2017, the Program located 19.5 acres of infestation, down from almost 23 acres in 2014. All garlic mustard found was controlled, 86 percent of the area by program staff and crews and 14 percent by the property owners.

Even with annual treatments, garlic mustard is very difficult to eradicate once established. Despite this challenge, 23 percent of the 578 known sites had no garlic mustard present in 2017 and an additional 8 percent of the sites have had no garlic mustard for three or more years.

The Program's increased outreach effort on garlic mustard showed results in 2017. People reporting weeds were more accurate in identifying garlic mustard, and more new sites were identified by people outside of the Program.

New garlic mustard sites are often found in parks where seeds are likely dispersed by pets or on the footwear of park visitors, workers and volunteers. To address this, the Program used social media and workshops to emphasize the importance of brushing boots and equipment to prevent spread. The Program hosted boot brushing stations during Green Seattle Day, a city-wide volunteer event held in multiple parks involving hundreds of volunteers.



Photo: Sasha Shaw

Volunteers brushing boots at Cheasty Greenspace

Initiative 3: Aquatic weed control

During 2017, 95 percent of all Class A and regulated Class B aquatic noxious weed sites that were surveyed were controlled. Overall, 1,343 sites were controlled. Most of these infestations are purple and garden loosestrife. Control methods included aquatic herbicide, hand pulling, biocontrol, and a combination of these methods. About two thirds of the sites were controlled by the property owner and about one third were controlled by the Program.

Intensive surveying is an important program activity that aids early detection of new infestations followed by rapid, effective control response. In 2017, Program staff surveyed 31 small lakes and large rivers, 32 miles of the Snoqualmie River, four miles of the Sammamish River and many streams and wetlands.

In 2017, 13 lake residents participated in the Lake Weed Watcher volunteer training and learned to survey for high priority aquatic weeds in their lakes. Over the summer, eight volunteers contributed an estimated 56 hours conducting eight surveys on six different lakes.

The following achievements were made possible due to additional funding for aquatic weed control in 2017:

- Increased amount of aquatic weed survey and control work.
- Developed the Cottage Lake Integrated Aquatic Vegetation Management Plan (IAVMP) in collaboration with Cottage Lake residents.
- Began implementing the Shadow Lake IAVMP, including a community-led effort to control fragrant water lily and a Program effort to control yellow-flag iris.
- Assisted with the City of Kenmore’s IAVMP for Lake Washington.
- Began a study on effective control methods for garden loosestrife in conjunction with the City of Sammamish.
- Controlled purple loosestrife for approximately 200 landowners on Lakes Kathleen and Desire.
- Conducted a mailing campaign to 1,000 Lake Sammamish property owners to efficiently reduce the impact of purple and garden loosestrife on the lake. There was more than a 60 percent increase in the number of sites controlled of both weeds based on follow-up field inspection.



Photo: Nathaniel Dolton-Thorton

Demonstrating aquatic weed collection technique.



Photo: Nathaniel Dolton-Thorton

Lake Weed Watchers training.

Percent of Aquatic Weed Sites Controlled in 2017

Aquatic Weed Species	Percent of Sites Controlled
Common Reed	96%
Floating Primrose-willow*	100%
Garden Loosestrife	91%
Parrotfeather	100%
Purple Loosestrife	96%
Reed Sweetgrass*	100%
Ricefield bulrush*	100%
Spartina (Cordgrass)*	100%
Yellow Floating-heart	100%

*Class A Noxious Weed

Initiative 4:

Cooperative weed management in riparian areas

To reduce the impacts of knotweed on habitat, improve water quality and aid salmon recovery efforts, the Program has been implementing a series of cooperative, multi-jurisdictional, public-private projects since 2004 that aim to improve infested areas and protect areas that are not infested.

The riparian projects have been funded primarily through competitive grants, which are increasingly challenging to secure. To provide a more stable funding base and to better leverage external funds, the Program received additional internal funding beginning in 2015. Grant assistance for 2017 was provided by the Washington Department of Ecology, Washington Recreation and Conservation Office, Washington Department of Natural Resources, the Washington State Department of Agriculture and the King County Flood Control District.

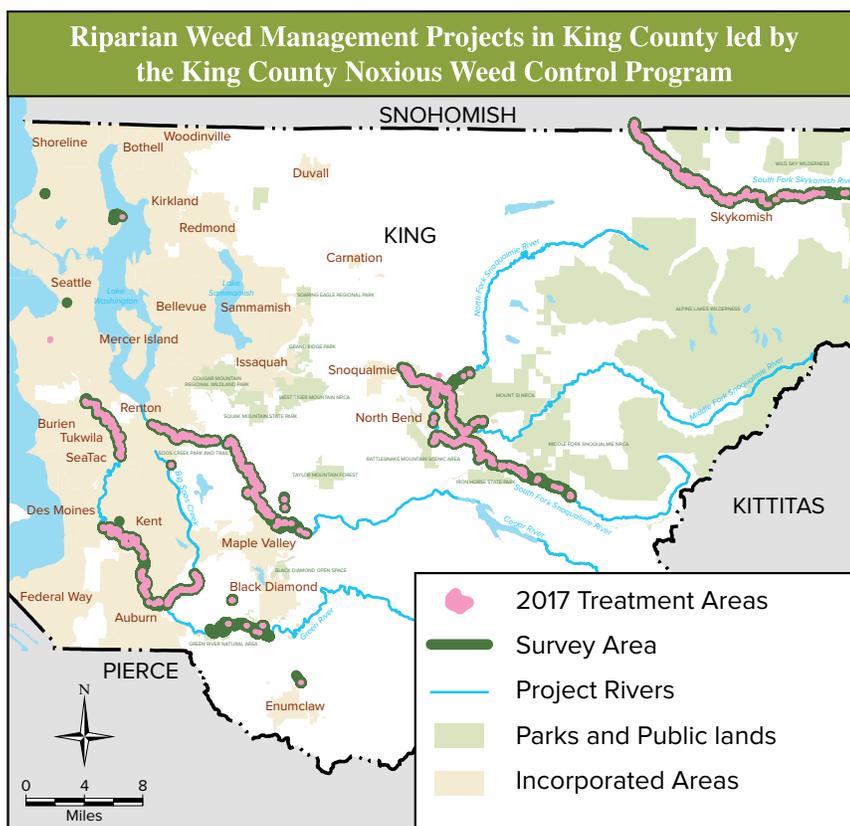
To ensure sustainable results and long term stewardship of restored lands, the Program maintains public and private partnerships and strives for the voluntary participation of landowners and restoration of previously infested areas. In 2017, the Program's internal King County partners included the Rivers and Floodplain Management Section, the Road Services Division and the Parks and Recreation Division. Externally, the Program partnered with the Snoqualmie Tribe, U.S. Forest Service, Washington Department of Natural Resources, Washington State Department of Agriculture, Seattle Public Utilities, Forterra, Washington Conservation Corps (WCC), Puget Sound Corps (PSC), EarthCorps, Sound Salmon Solutions and the cities of Snoqualmie, North Bend, Auburn, Kent, Covington, Renton, Maple Valley, Tukwila, Seattle, Mercer Island and Skykomish.

Private property owners also contributed to the achievements of these riparian projects. Over 1,600 property owners voluntarily gave permission for access and knotweed control on their properties. Additionally, 25 county residents attended Program knotweed workshops in Tukwila, Mercer Island, Carnation, North Bend and Maple Valley. These workshops educate and empower landowners to control knotweed on areas beyond our grant-funded projects.



Photo: Justin Brooks

Working in a maze of knotweed stems.



2015 to 2017 Riparian Accomplishments	Target	2015	2016	2017
River Miles Treated/Surveyed	39	143	128	93
Acres Surveyed	625	2,166	1,884	1,961
Acres Weeds Controlled	n/a	191	175	221
Program Staff Days	n/a	354	206	218
WCC/PSC Days	n/a	47	70	59
Property Owners Receiving Assistance	500	1,091	1,700	1,606
Sites Controlled	n/a	2,237	2,200	2,137
Homeowner Technical Workshops	2 to 3	5	6	5
Workshop Participants	n/a	62	119	70

Initiative 5: Equity and Social Justice for limited English and low-income residents

The Program seeks to ensure that noxious weed services and information are distributed equitably to all county residents. We are focusing on increasing access to information for residents with limited English or from historically underserved communities and providing direct assistance to low-income and senior residents. Program activities to achieve these goals include education and outreach in key languages, translating resources, partnering with community organizations and providing noxious weed control assistance to elderly, disabled and low-income landowners, including all landowners participating in the King County Property Tax Exemption and Deferral Program.

2017 Highlights

- Developed and distributed a poison-hemlock alert poster for community gardens with text in nine languages, produced in three-language combinations tailored for different locations.
- Produced online and printed materials in Spanish, Vietnamese, Chinese, Somali, and Russian.
- Provided Spanish-language education for landscapers and county residents.
- Hosted booths at six events serving multilingual and underserved communities.
- Controlled noxious weeds for 56 people who are receiving tax assistance or who are elderly, disabled or experiencing an economic hardship; controlled 10 acres of noxious weeds on these properties.



Photo: Latino Outdoors

Latino Outdoors at Rattlesnake Ledge.

Initiative 6: LEAN Improvements: Database overhaul and mobile data collection



Photo: Sasha Shaw

The Program is working to increase the efficiency of core work processes through improvements in database design and mobile data capabilities. Following the launch in 2016 of the new streamlined database and mobile data collection system, the Program has continued to adjust and improve the system to

increase efficiency and usability. Since implementing our new data collection system we've identified several major benefits.

Time savings – Recording data in the field without the need for transcription in the office has reduced office data entry time by about 90 percent. Built-in data validation reduces errors and increases data quality assurance at the end of the season. The new

system saves time in planning field routes and finding property information. A conservative estimate is that we saved more than 100 staff days each field season due to the new system.

More data with less work – Our data collection system has enabled specialists to record detailed GPS data for more weed locations in less time because staff no longer need to download and post-process data after returning to the office, which saves considerable time. We use this additional data for better analysis and management planning.

Coordination with partners – In 2017, we further developed our pilot project to coordinate live program data with King County Roads. Our County lands coordinator shares data with County Roads vegetation managers through an online web map in real time allowing for rapid and efficient response times.

Photo: Sasha Shaw



Weed Watcher volunteer pulling tansy ragwort.

Photo: Sasha Shaw



Weed Watcher volunteers pulling herb Robert.

Photo: Sasha Shaw



Volunteers on a group hike searching for weeds.

Initiative 7: Weed Watcher community participation program

To protect the public investment in open space and conservation areas, the Weed Watcher Program aims to increase community participation in preventing the spread of invasive plants into wilderness and recreational areas. Trained volunteers survey for and document invasive weeds on trails and backcountry that typically do not get surveyed due to the limited resources of public land managers.

In 2017, the Program partnered with the Pacific Northwest Invasive Plant Council (PNW-IPC) to hold trainings and to collect and share data with land managers. The Program also partnered with the Washington Department of Natural Resources, U.S. Forest Service, Mountains to Sound Greenway Trust, and The Mountaineers. As in past years, volunteers primarily surveyed for weeds on trails in the Upper Snoqualmie Watershed. New for 2017 were surveys in the Cedar River and Skykomish Watersheds.

The Trail Weed Watcher Program exceeded or met all target deliverables (see table for results).

Weed Watcher Program accomplishments and outcomes by year and combined results				
Description	2015	2016	2017	Annual Target
New volunteers trained	45	26	31	15-25
Number of trails surveyed	48	35	36	20-25
Number of organized group hikes	7	6	5	2
Number of group hike participants	37	43	28	10
Number of new invasive plant records	128	201	318	n/a
Miles of trail surveyed for invasive plants	125	119	129	n/a

King County Noxious Weed Control Program 2017 ANNUAL REPORT



King County

Department of
Natural Resources and Parks
Water and Land Resources Division
Noxious Weed Control Program

For more information: 206-477-9333
or kingcounty.gov/weeds

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