



KING COUNTY NOXIOUS WEED CONTROL PROGRAM

206-477-9333 • kingcounty.gov/weeds

2013 annual report



Letter from the Board

Thank you for your interest in noxious weed control in King County.



On behalf of the King County Noxious Weed Control Board, I present the 2013 Annual Report of the King County Noxious Weed Control Program. This report summarizes an extensive range of activities and significant achievements accomplished by our dedicated and knowledgeable staff. These successes are due largely to cooperative private and public landowners who recognize the environmental, social, economic, and health risks presented by noxious weeds.



The presented facts and figures reflect an impressive body of work. The primary objective of the Weed Board has been to ensure that the Program is fairly, effectively, and efficiently serving the interests of the citizens of King County. The staff and the board have worked hard to use county tax dollars wisely and judiciously. The public benefits generated are clearly high in proportion to the funds invested.

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.

A coordinated community-wide noxious weed control effort, sustained over time, is required to produce long-term benefits to the environment, economy and quality of life. I think this report demonstrates that we are achieving this goal successfully in King County.

Scott Moore,
King County Noxious Weed Control Board



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Special Thanks to:

Frances Lucero and Edward McFarlin for data analysis; Denise Liguori and Sasha Shaw for managing content and editing; and Megann Devine and Andrea Rouleau for layout and design.

For more information:
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kingcounty.gov/weeds

2013 KING COUNTY NOXIOUS WEED CONTROL BOARD

The King County Noxious Weed Control Board is comprised of five volunteer citizens representing five districts within the County. Each member is appointed by the King County Executive and confirmed by the King County Council. 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 2013:

Jennifer Andreas, WSU	Becky Chaney
Clint Bostwick	Scott Moore, Chair
John Browne	Grace Stiller

The Board oversees activities completed by the King County Noxious Weed Control Program. This year the Program employed 18 full and part-time staff.

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Major Noxious Weeds in King County: 2013 Snapshot

Top Class A Weeds in King County

Giant Hogweed
451 active sites



76% eradicated
100% controlled

Garlic Mustard
379 active sites



5% eradicated
100% controlled

Milk Thistle
65 active sites



24% eradicated
99% controlled

Goatsrue
31 active sites



26% eradicated
100% controlled

Top Class B Weeds in King County

Tansy Ragwort
5,016 active sites



30% eradicated
96% controlled

Purple Loosestrife
1,161 active sites



20% eradicated
96% controlled

Spotted Knapweed
685 active sites



38% eradicated
98% controlled

Orange Hawkweed
481 active sites



16% eradicated
99% controlled

Dalmatian Toadflax
340 active sites



30% eradicated
99% controlled

Yellow Hawkweed
329 active sites



13% eradicated
92% controlled

Sulfur Cinquefoil
325 active sites



27% eradicated
97% controlled

Diffuse Knapweed
264 active sites



29% eradicated
99% controlled

Policeman's Helmet
206 active sites



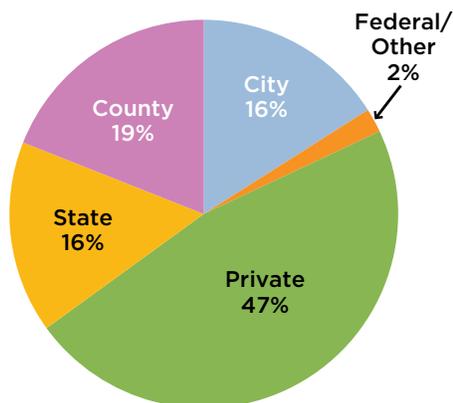
52% eradicated
92% controlled

Garden Loosestrife
204 active sites



6% eradicated
90% controlled

Infestations by Property Type



Definitions (RCW 17.10, WAC 16-750)

Eradicate:

Completely eliminate a noxious weed within an area of infestation.

Class A:

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

Control:

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

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.

Major Results Towards Achieving Program Goals

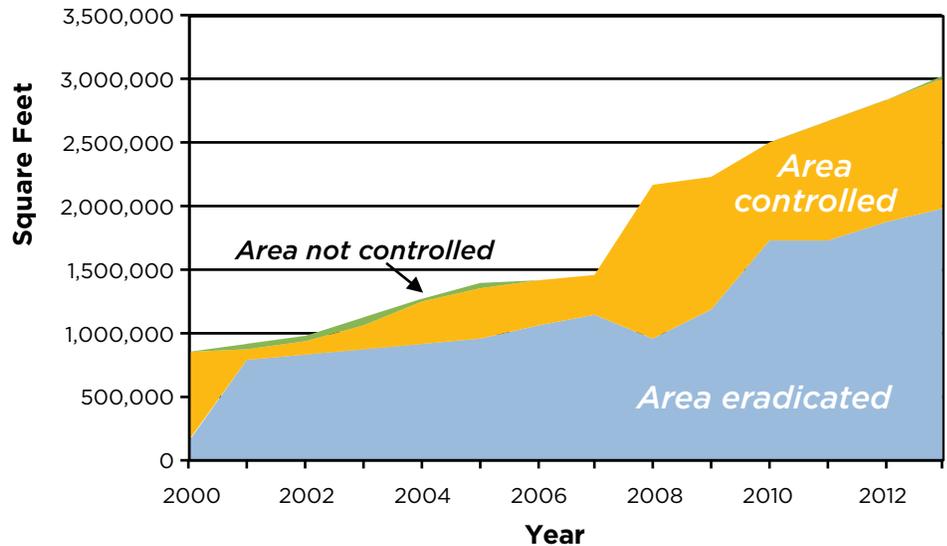
Left uncontrolled, noxious weeds can dominate our forests, choke wetlands and waterways and create additional costs to agriculture. The work of the King County Noxious Weed Control Program in 2013 helped to prevent and repair damage done by noxious weeds in King County.

The most important resource the Program has in achieving its goals is the active participation and collaboration of landowners and citizens. Noxious weeds know no boundaries, so involvement of all landowners, public and private, is essential for effective results. Landowner noxious weed control requirements are mandated by the State Noxious Weed Control Law, but the Program has found that voluntary, self-motivated participation is the key to long-term results.

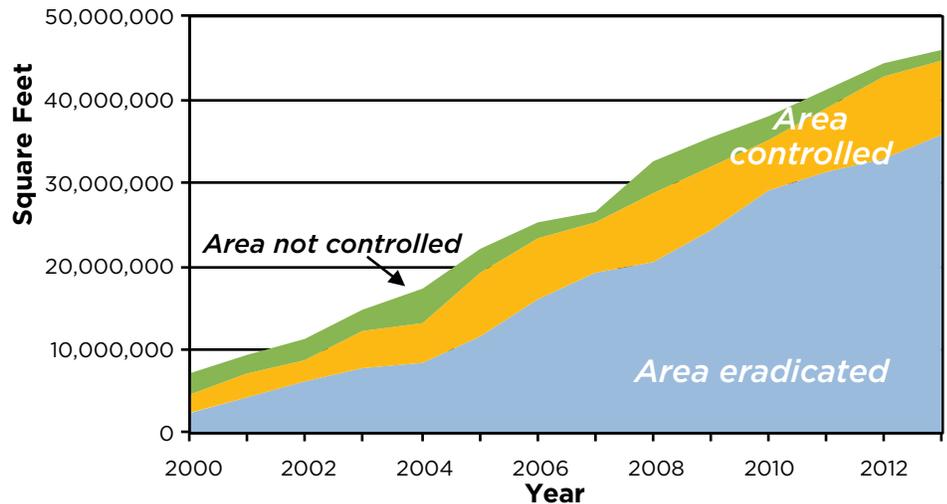
The Program made significant progress towards engaging and educating the community about noxious weeds and increasing property owner participation in noxious weed control activities.

In 2013, the Program worked with over 4,200 landowners and public agencies with noxious weeds on their properties and achieved control on 97 percent of the infestations without need of enforcement actions.

Control of Class A Noxious Weeds in King County



Control of Class B Noxious Weeds in King County



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 to below levels of significant impact.
-  Implement early detection and rapid response for infestation of new noxious weeds with limited distribution.
-  Support the management of widespread noxious weeds and facilitation of more effective, coordinated landscape-scale control efforts.

MAJOR RESULTS TOWARDS ACHIEVING PROGRAM GOALS *(continued)*

Of the 11,103 infestations controlled in 2013, 73 percent were controlled by property owners and 27 percent were controlled by program staff with permission from the property owners, showing a significant level of active participation by landowners in reducing the impacts of noxious weeds in the County.

Class A Weeds: In 2013, 99 percent of the 1,200 Class A noxious weed infestations in King County were controlled. Class A noxious weeds are the highest priority in Washington due to their potentially serious impacts to the state's economy and environment, as well as their limited distribution in the state, making eradication a feasible goal. To date, 66 percent of the area in the County originally infested by Class A weeds from 1996 to 2013 has been eradicated.

Class B and C Weeds: The Program also achieved significant containment and control of regulated Class B and C noxious weeds, with control achieved on 97 percent of the sites surveyed. Class B and C noxious weeds are more widespread than Class A weeds, but also pose serious threats to the state's natural and economic resources. These weeds are only regulated in areas of the state where they are limited enough for required control to be feasible. In 2013, program staff surveyed 9,922 parcels and roads with regulated Class B and C noxious weeds, including 283 locations that were new discoveries.

Special Projects and Programs: For widespread noxious weeds with a significant impact on public investments such as knotweed and aquatic weeds in lakes and rivers, the Program facilitates coordinated, collaborative landscape-scale projects that integrate control with restoration and often make use of grants and other external resources. Details about the Knotweed Program, aquatic weed work and other special projects are included later in this report.

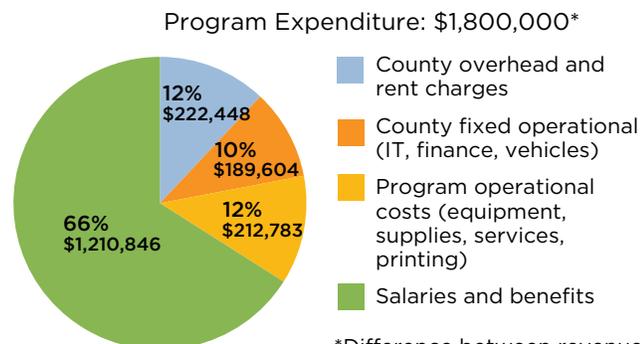
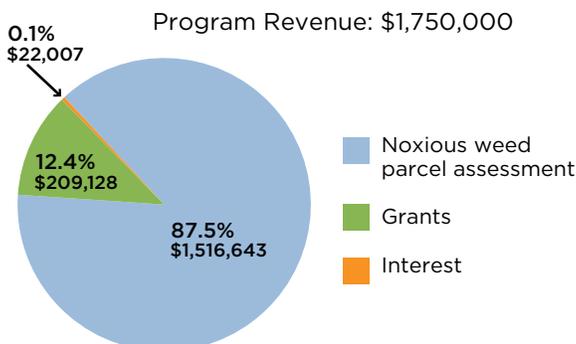
The productivity of the Noxious Weed Program in 2013 was significantly enhanced by the contribution from the Washington Department of Natural Resources (WDNR) of 83 days of crew time, an equivalent value of over \$102,920, to control noxious weeds in riparian areas in the County. More information about the benefits of the Puget Sound Corps Program to King County is included later in this report.



2013 Major Program Outputs

- 12,359** infestations surveyed
- 4,283** property owners contacted
- 11,103** infestations controlled
- 418** new infestations found
- 180** acres of weeds controlled by property owners
- 229** acres of weeds controlled by program
- 8,269** hours spent in the field by staff

2013 Program Financials



*Difference between revenue and expenditure was covered by the Program's fund balance

Ten Year Progress Report for Top 4 Class A Noxious Weeds in King County



Giant Hogweed

The noxious weed program started tracking giant hogweed in 1996. As of the end of 2013, 1,909 sites had been found, with 76% eradicated to date. No outside funding has been obtained for this species.

Year	Active sites at end of year	New sites previous five years	New acres previous five years	Eradicated sites at end of year
2003	946	n/a	n/a	333
2008	625	378	2	1039
2013	451	237	2	1458

2023 projection*:
249 active sites remaining out of a projected 2,616 total sites, 90% eradicated.



Garlic Mustard

Garlic mustard was first recorded in the County in 2000. As of the end of 2013, 397 sites had been found, with 5% eradicated to date. Outside funding obtained has included \$30,377 in grants from Washington State Department of Agriculture, \$21,600 of EarthCorps labor contributed by Washington State Department of Natural Resources.

Year	Active sites at end of year	New sites previous five years	New acres previous five years	Eradicated sites at end of year
2003	61	n/a	n/a	0
2008	156	97	2	2
2013	379	245	8	18

2023 projection*:
364 active sites remaining out a projected 751 total sites, 52% eradicated.



Milk Thistle

Milk thistle was first recorded in the County in 1998. As of the end of 2013, 86 sites had been found, with 24% eradicated to date. Outside funding obtained was \$1,278 worth of herbicide and equipment contributed by WSDA.

Year	Active sites at end of year	New sites previous five years	New acres previous five years	Eradicated sites at end of year
2003	21	n/a	n/a	3
2008	66	51	1	8
2013	65	10	0.2	21

2023 projection*:
55 active sites remaining out of a projected 128 total sites, 57% eradicated.



Goatsrue

Goatsrue was first recorded in the County in 2000. As of the end of 2013, 42 sites had been found, with 26% eradicated to date. Outside funding obtained was \$12,800 from National Fish and Wildlife Foundation and WSDA.

Year	Active sites at end of year	New sites previous five years	New acres previous five years	Eradicated sites at end of year
2003	16	n/a	n/a	1
2008	37	20	1	2
2013	31	6	0.01	11

2023 projection*:
25 active sites remaining out of a projected 45 total sites, 44% eradicated.

*2023 Projections are based on the average number of sites eradicated per year from the initial year species was recorded in King County, assuming an equivalent number of new sites added in upcoming years and a similar level of resource allocation.

Garlic Mustard in King County: Status Update



Garlic mustard (*Alliaria petiolata*) is a Class A noxious weed that thrives in forested areas, significantly interferes with the growth of trees and other plants and degrades wildlife habitat.



First found in King County in 2000, it was initially thought to be restricted to urban parks and a few residential properties in Seattle and Bellevue. However, in 2008 garlic mustard was found on the Cedar River and has since been found in many more places on the river and in other more isolated locations scattered around the County (see map).

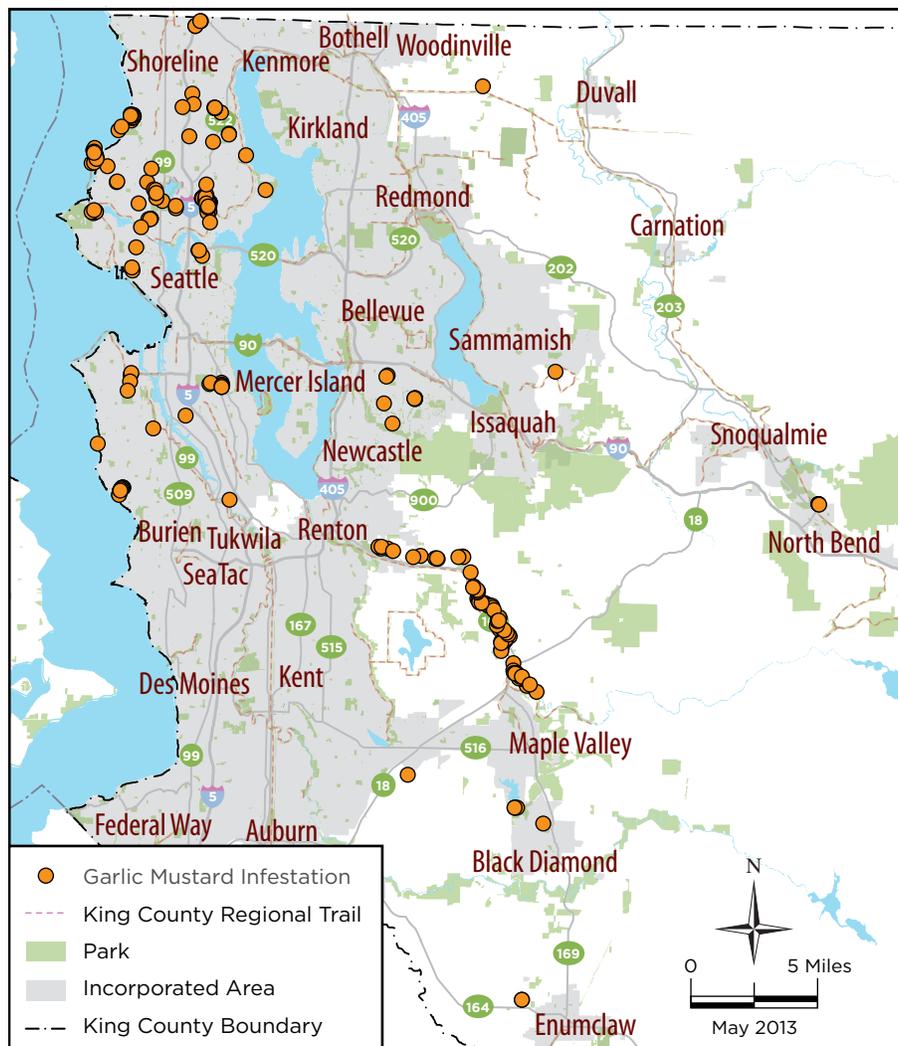
Small sites are easily controlled, but large established infestations have proven to be highly challenging to eradicate due to the difficulty in locating every plant, its prolific seeding, and the long-lived seeds. The infestations on the Cedar River present the biggest challenge because of the difficulty of surveying and controlling weeds along a major river and the frequent movement of seeds on winter floods, animals, construction and other activities along the river.

In 2013, the Noxious Weed Program was presented with an exceptional opportunity to augment our efforts in locating and controlling noxious weeds on rivers, including garlic mustard, through the contribution from Washington Department of Natural Resources of EarthCorps crew time. Thanks to WDNR's assistance, the Program was able to lead 12 additional days of intensive work on the Cedar River. The extra crew time equated to about \$14,880 of additional garlic mustard control work above what the Program could have accomplished on

its own. See Puget Sound Corps, page 14, for more information.

As of the end of 2013, the Program had records of 384 garlic mustard sites covering 17.2 acres. Of the 69 new sites found in 2013, 40 were on the Cedar River. Through the Program's efforts and the collaboration of WDNR, King County Parks, King County Roads, the cities of Seattle and Bellevue and many private property owners, all garlic mustard sites were controlled in 2013, preventing any additional seed production.

Garlic Mustard Distribution in King County



County Lands

King County agencies are responsible for noxious weed control activities on approximately 42,380 acres of property. County agencies with weed control responsibilities are shown in Table 1 below. County land managers have the same noxious weed control responsibilities as private property owners, local municipalities and the state.

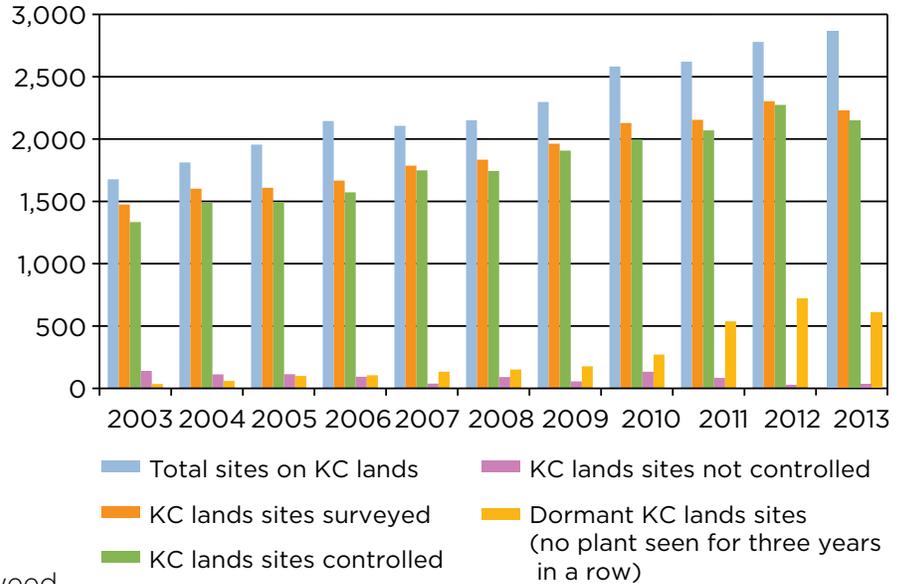
Noxious Weed Control Performance on County Land

Currently there are 2,341 noxious weed sites known to be on county-managed properties, including 85 new infestations found during 2013 surveys. Staff was able to survey 2,218 sites and noxious weeds were controlled on 98.4 percent of these. Weed control on county-managed properties continues to exceed results on non-county owned properties. Of note for 2013 is that the Program received a historically low number of complaints about noxious weeds on county property. The Program received two complaints about tansy ragwort on county-managed properties. One complaint was a mis-identification and the other complaint was resolved by parks personnel who pulled the plants shortly after notification.

A highlight of the 2013 season was the opportunity presented by WDNR with the contribution of crewtime from EarthCorps to conduct noxious weed control work on river corridors in King County (See Puget Sound Corps page 14 for further details). This donation of labor greatly increased the Program's ability to search for garlic mustard on the Cedar River in areas that are extremely difficult to access and survey. Staff and crews were able to identify 14 previously unknown sites along the Cedar River on county property.

In addition to controlling regulated noxious weeds, King County Parks also increased their effort to reduce the impacts of other invasive plants to the County's parks and natural areas (see Table 2).

Noxious Weed Sites on King County Owned Lands 2003-2013



King County Division	Number of sites surveyed	Percent sites controlled
Roads	1,874	99
Parks/Open Space	172	90
Wastewater	2	100
Stormwater	111	100
Transit	6	100
Solid Waste	10	100
Rivers	32	100
Facilities Management	11	100

Table 1: Control of regulated noxious weeds on county-managed lands.

Non-Regulated noxious weed	Number of parks sites		Acres controlled	
	2012	2013	2012	2013
Blackberry	24	36	74	89
English holly	6	19	1	24.3
English ivy	9	5	10	4.5
Butterfly bush	12	12	10	9
Yellow archangel	5	10	2.5	2.1
Old man's beard	2	N/A	1/2	N/A
Yellow flag iris	N/A	8	N/A	1.4
Scotch broom	N/A	3	N/A	1.5
Poison hemlock	N/A	8	N/A	8.3
Common teasel	N/A	2	N/A	2.8
Knotweed	N/A	60	N/A	53.8

Table 2: Non-regulated noxious weeds controlled by King County Parks in 2012 and 2013.



Pulling knapweed on the Snoqualmie River.

State and Federal Lands

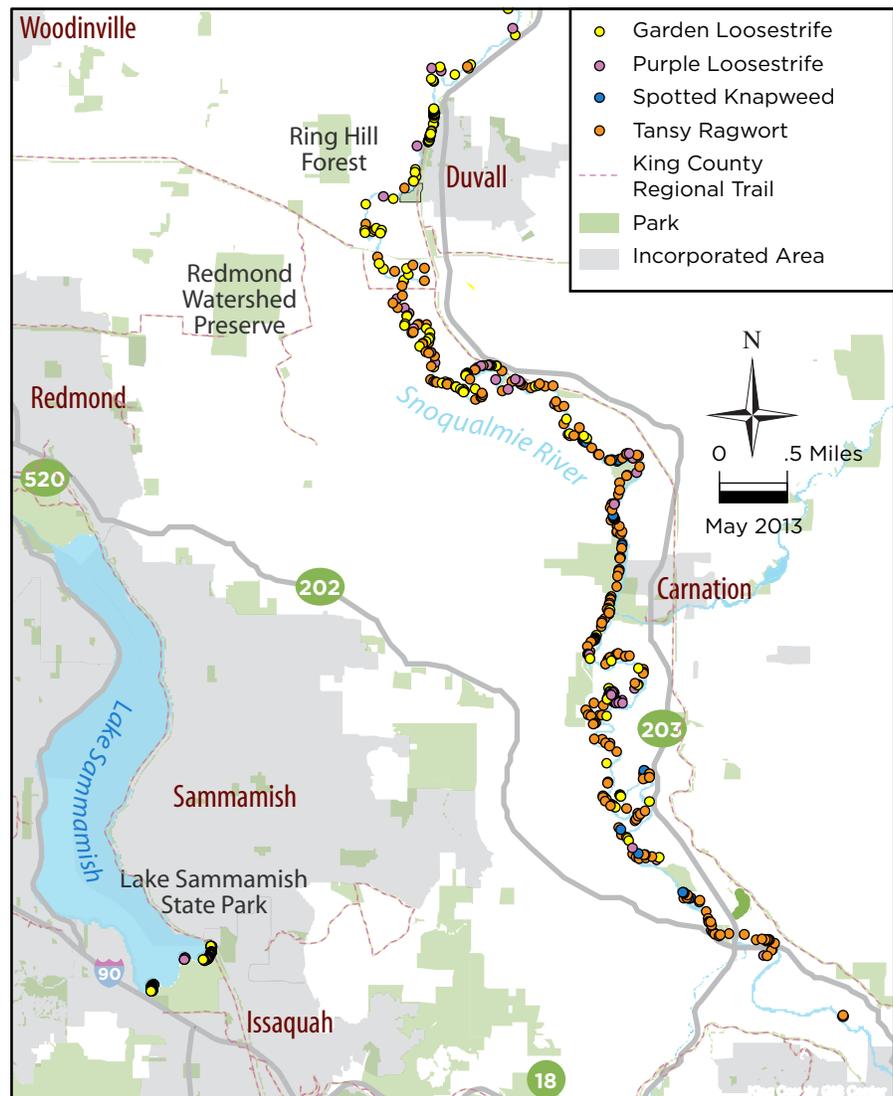
The state of Washington and the federal government have more than 3,700 parcels within King County, comprising 38 percent of its area. In 2013, there were 323 active regulated noxious weed sites on state and federal properties, 10 of which were new sites. Staff surveyed 307 of the active sites and control was achieved on 99.7 percent of the sites and 95 percent of the area infested.

Washington also maintains 18 state highways that travel through King County covering 368 linear miles. In 2013, program staff surveyed 1,666 regulated noxious weed sites on state highways, 26 of which were new sites. Working with the Washington Department of Transportation (WSDOT), 100 percent of these sites were controlled and seeding was prevented on all sites.

Program staff continued to develop successful working relationships with state and federal land managers in 2013:

- Through an Interagency Agreement with WDNR, the Program controlled significant areas of noxious weeds in difficult to access state-owned riparian areas (see WDNR Map).
- The Program established a collaborative working relationship with the State Department of Commerce for control of loosestrife on Lake Washington and Portage Bay.
- The Program continued to assist the Port of Seattle in successfully controlling one of the largest infestations of common reed on the Duwamish River.
- Program staff partnered with the U.S. Forest Service in surveying and controlling noxious weeds in the Mt. Baker-Snoqualmie National Forest.
- Highlights for highway rights-of-way control in 2013 include successful control of the Class A European hawkweed, control of rush skeletonweed sites on I-90 and SR 18 and significant progress in controlling Dalmatian toadflax.

Riparian Noxious Weeds Controlled 2013 WDNR Funded



2013 Education Activities

- 31** information booths and outreach events
- 68** workshops and presentations & field trips
- 678** responses to public inquiries and weed reports
- 1,673** newsletter subscribers
- 4,283** property owners with noxious weeds contacted or assisted
- 12,769** brochures and bulletins distributed
- 402,694** website visits

Education and Technical Assistance

The Program carries out a wide range of education and outreach activities in order to build a knowledgeable and engaged community that actively works to reduce noxious weed impacts in the County.

In 2013, program staff worked directly with over 4,200 property owners and public land managers and responded to over 600 additional public inquiries and reports of noxious weed infestations. Information was provided to the public through the Program's popular website, weed booklets and fact sheets, and the e-newsletter "KC Weed News," which highlights issues relevant to weed control in King County.

The Program provided presentations and workshops to a total of 1,889 participants, and had information booths at 31 public events and fairs, including nine Farmer's Markets and several large events such as Maple Valley Days, Enumclaw Street Fair, Vashon Strawberry Festival and Issaquah Salmon Days.



Photo credit: Mark Musick



Information booth at Vashon Strawberry Festival

Highlights from 2013 include:

- Professional noxious weed seminars that were attended by a total of 302 participants.
- Training for a total of 177 Americorps youth and community steward volunteers participating in WCC, EarthCorps, Goodwill Green Corps, WNPS Native Plant Stewards, and Bellevue Master Naturalists.
- Homeowner knotweed control classes in Auburn, North Bend, Maple Valley, Kirkland and Newcastle were attended by a total of 74 participants. These classes increased knotweed control on private and public property in upland areas around priority river habitat, and generally increased the public interest in reducing the impact of knotweed in the County.

Aquatic Weed Control

In 2013, 95 percent of regulated aquatic noxious weed sites surveyed by program staff were controlled. The majority of these infestations are purple and garden loosestrife, with 1,161 and 204 active sites, respectively. Some loosestrife infestations are very large and, although progress was made this year, complete control will be achieved over multiple years. In 2013, 93 percent of the garden loosestrife area and 80 percent of the purple loosestrife area was controlled.

One hundred percent of the Class A aquatic weeds and most of the remaining regulated Class B aquatic weeds were controlled, including parrotfeather, reed sweetgrass, floating primrose-willow, water primrose, and yellow floating-heart. Effective control of these early infestations is crucial for protecting the waterways of King County since these species are all very difficult to control once established.

Intensive surveying is an important Program activity that facilitates early detection of new infestations and a more rapid, effective control response. In 2013, program staff surveyed 22 small lakes, 35 miles of the Snoqualmie River, four miles of the Sammamish River, and many streams and wetlands. WDNR Puget Sound Corps provided eight days or approximately \$10,000 of crew time to control loosestrife on the Sammamish River.

Additionally, the Lake Weed Watcher Volunteer Program was revived this year with a June orientation that trained 15 volunteers. In total, 11 volunteers contributed 31 hours in conducting nine surveys on seven different lakes.



Garden loosestrife infestation



Common reed infestation

2013 Aquatic Weed Control Activities

7 lakes surveyed by Weed Watcher volunteers

21 lakes surveyed by Program staff

56.5 miles of streams and rivers surveyed for aquatic noxious weeds

7 Class A aquatic weed sites controlled

1,304 Class B aquatic weed sites controlled



Puget Sound Corps crew members controlling purple and garden loosestrife

Photo credit: Greg Haubrich

Stewardship Highlights 2013

The Program works in partnership with landowners, volunteers, public agencies and non-profits to achieve improved stewardship of the land, often using grants and other supplemental funding opportunities to accomplish these results. Our partners, working together, achieve effective weed detection and coordinated weed control over a large number of connected properties.

Major stewardship projects include:

1 Alpine Noxious Weeds

- Control of European, orange and yellow hawkweeds, spotted, diffuse and meadow knapweeds, sulfur cinquefoil, tansy ragwort, Scotch broom and absinth wormwood at approximately 360 locations.
- This project spans the Cascade crest into adjacent Kittitas County and the Okanogan-Wenatchee National Forest.
- Stakeholders include: the U.S. Forest Service, WSDOT, Washington State Parks, Washington Department of Agriculture, Washington State University Extension, Kittitas County Noxious Weed Control Board, Bonneville Power Administration, Puget Sound Energy, Mountains to Sound Greenway Trust, The Summit at Snoqualmie, numerous private landowners in the Alpentel Village Homeowners Association and landowners in the towns of Skykomish and Baring.

2 Knotweed control on the Green, Cedar, Skykomish and Snoqualmie Rivers

- 164 acres of invasive knotweed controlled along riparian corridors and wetlands on 80 river miles in King County.
- 1,095 landowners worked in collaboration to achieve control of knotweed.
- Control beyond the immediate riparian corridor was encouraged through knotweed control workshops, equipment loan, and technical support.
- WDNR Puget Sound Corps contributed 45 crew days to knotweed control on King County rivers, significantly increasing the amount of knotweed controlled in the County in 2013.
- Project partners and funders include US Fish and Wildlife Service, King Conservation District, Environmental Protection Agency, National Fish and Wildlife Foundation, Friends of the Cedar River Watershed, Forterra, Mountains to Sound Greenway Trust, Washington Department of Ecology, US Forest Service, WDNR, and private landowners.

3 Lake Desire Aquatic Weed Control

- 13 volunteers contributed nearly 50 volunteer hours to the project.
- Control of purple loosestrife covering 0.4 acres, fragrant water lily



Photo credit: Grace Stiller

Volunteers controlling knotweed

- covering 2.9 acres and Eurasian watermilfoil covering 0.5 acres.
- Benefitted 84 lakeside property owners.
- The work was funded by the Department of Ecology's Aquatic Weed Management Fund Grant Program (75 percent) and through the volunteer time of Lake Desire residents and Noxious Weed Program staff time (25 percent).

4 Miller and Walker Creeks Weed Control and Restoration

- Project covers 6.5 miles of an urban creek system that originates near SeaTac and drains directly into Puget Sound.
- Since 2005, achieved an 87 percent reduction in the area of purple loosestrife, giant hogweed, knotweed and policeman's helmet on Miller and Walker Creeks.
- The area infested with policeman's helmet has been reduced from about an acre spread throughout the project area in 2005 to only 140 sq. ft. in a few scattered locations in 2013.

STEWARDSHIP HIGHLIGHTS 2013 (continued)

5 Sammamish River IAVMP

- The Sammamish River IAVMP (Integrated Aquatic Vegetation Management Plan) was completed in July with input by 12 stakeholders and a public meeting.
- The plan's management recommendations focus on control of purple loosestrife, garden loosestrife, common reed and Brazilian elodea.
- The creation of the plan was funded by the Washington Department of Ecology's AWMF Grant Program (75 percent) and the Program (25 percent).
- In 2013, two steering committee meetings and one public meeting were held.

- WDNR Puget Sound Corps contributed eight crew days for control of loosestrife species on the river.

6 Snoqualmie River Aquatic Weed Control

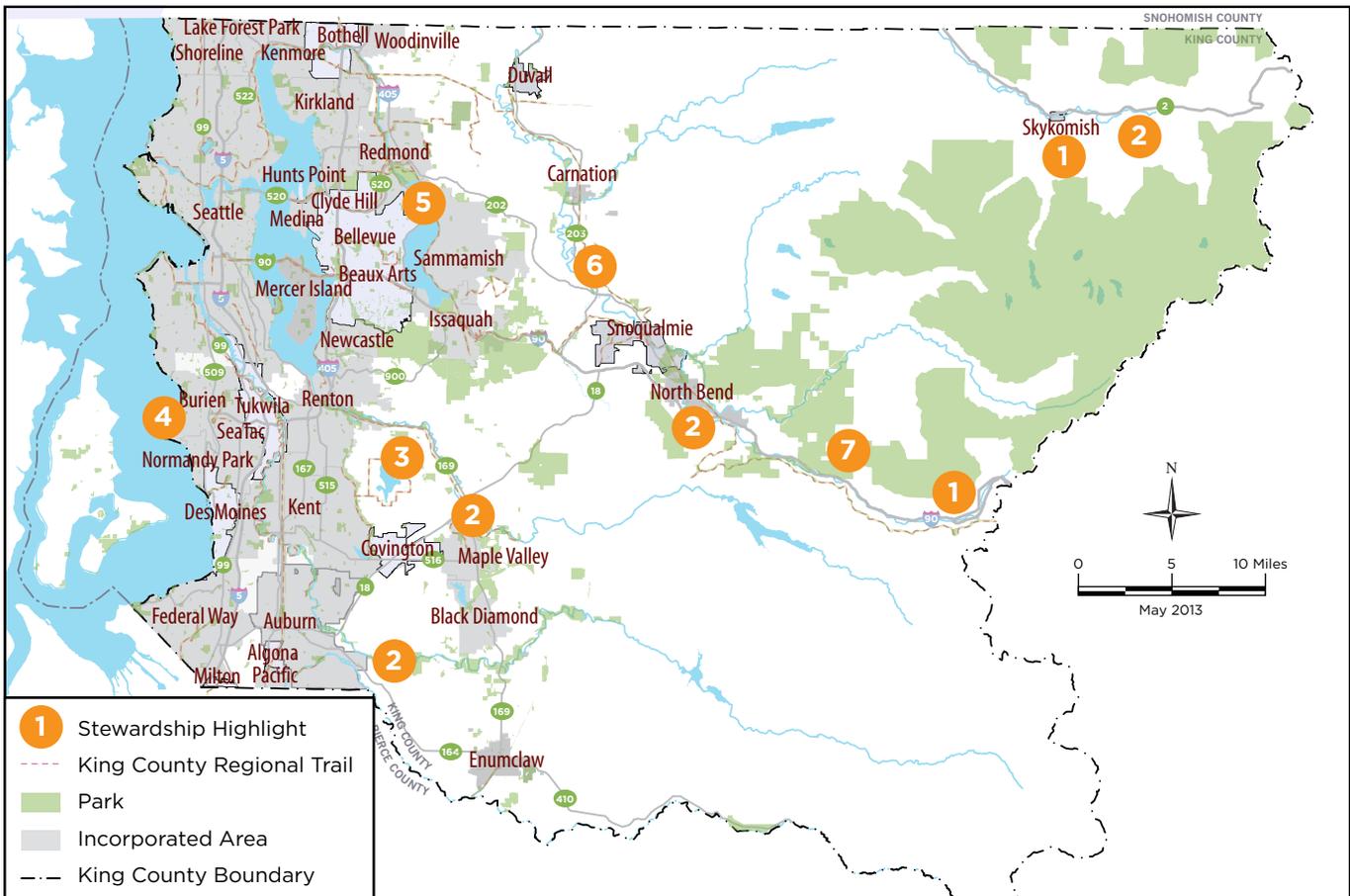
- Garden loosestrife, purple loosestrife, tansy ragwort and spotted knapweed were controlled along 33 miles of the Snoqualmie River and adjacent wetlands.
- Primary project partners were the WDNR and approximately 100 adjacent landowners.

7 Upper Snoqualmie Alpine Lakes Trail Weed Watchers

- 29 volunteers trained as weed watchers, including 13 new participants.

- Volunteers contributed 589 hours over 47 days, surveyed 129 miles on 34 different trails and reported 232 locations of invasive plants.
- Primary project partners include the: Mountains to Sound Greenway Trust, The Mountaineers, Mt. Baker-Snoqualmie National Forest, Washington Department of Natural Resources, and King County Parks.
- Program project areas include the: Middle Fork Snoqualmie Valley, the Upper South Fork Snoqualmie Watershed, and the Alpine Lakes Wilderness.

Stewardship Projects Coordinated in 2013



Puget Sound Corps in King County

In 2013, King County was given a unique opportunity by the Washington Department of Natural Resources (WDNR) to utilize 83 crew days for the survey and control of noxious weeds along riparian corridors in the County. These work crews were part of the Puget Sound Corps Jobs Initiative funded by the State Legislature to protect Puget Sound as well as provide training and work experience for students and military veterans.

WDNR designated EarthCorps to provide the field crews for the Program's projects from May through September of 2013. Noxious Weed Program staff directed the six person crews in surveying and controlling ten noxious weed species on 17 projects throughout the County (see Puget Sound Corps map). These noxious weed infestations were actively degrading the environmental and recreational values of public lands in King County and the contribution from WDNR and the partnership with EarthCorps provided a significant benefit to the County.

Collaborative partners include: WDNR, Washington Fish and Wildlife, Washington State Parks, King County Parks, and the non-profit habitat restoration organizations Mountains to Sound Greenway Trust, Sound Salmon Solutions and EarthCorps.

Puget Sound Corps 2013 Highlights

2,583 acres surveyed and treated

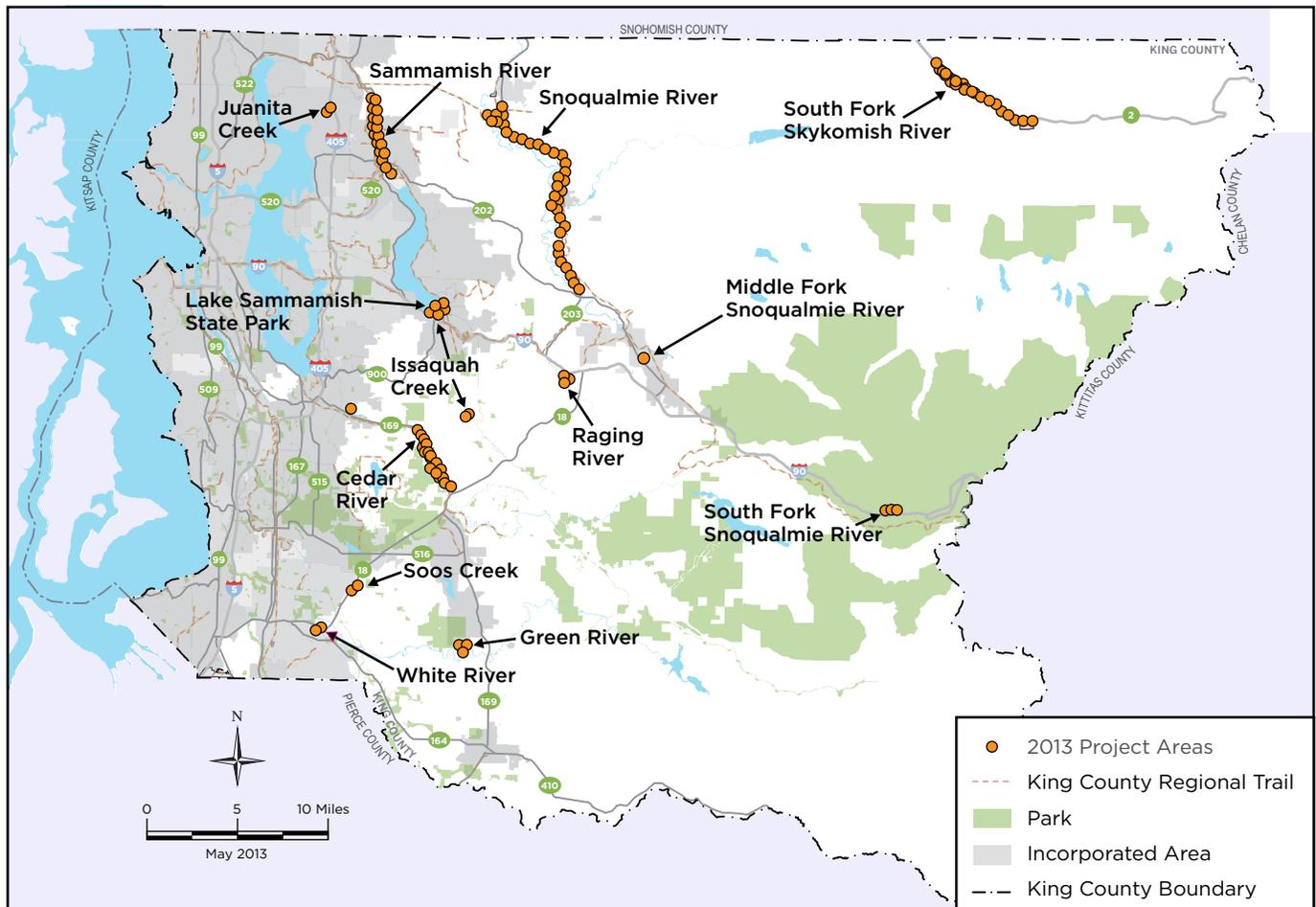
83 crew days

45 riverbank miles covered

Weed species controlled

- garlic mustard
- garden loosestrife
- Himalayan blackberry
- knotweed
- policeman's helmet
- purple loosestrife
- spotted knapweed
- tansy ragwort
- yellow flag iris
- yellow hawkweed

Puget Sound Corps Project Locations in King County 2013



Biological Control Activity Report



Hylobius on purple loosestrife stem

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 other more expensive methods.

In 2013, program staff worked with the IWCP to conduct 27 releases of 5,653 biocontrol agents targeting four noxious weed species. See the table below for details.

Noxious Weed	Biocontrol Agent(s)	Locations
Scotch broom	<i>Bruchidius villosus</i> (seed-feeding beetle)	Vashon
Spotted knapweed	<i>Cyphocleonus achates</i> (root-feeding weevil) <i>Larinus minutus</i> (seed-feeding weevil) <i>Larinus obtusus</i> (seed-feeding weevil)	Highway 2 White River
Purple loosestrife	<i>Galerucella</i> spp. (foliage-feeding beetle) <i>Hylobius transversovittatus</i> (root-feeding weevil) <i>Nanophyes marmoratus</i> (flower-feeding weevil)	Lake Desire Lake Kathleen May Creek Mercer Slough Evans Creek HW Phantom Lake
Canada thistle	<i>Urophora cardui</i> (gall-forming fly)	Auburn Narrows O’Grady Park

Definitions

Biological Control:

also called 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 USDA-APHIS for the control of a particular pest species.



Purple loosestrife in Juanita Bay



About King County

2,131



square miles

2 million people



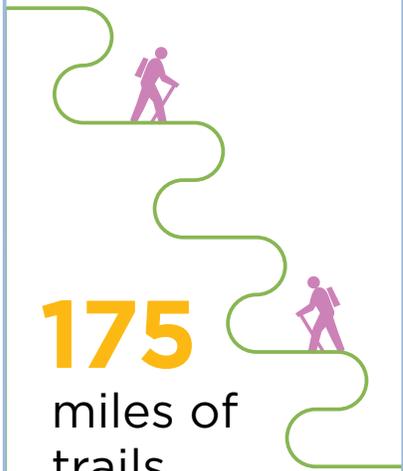
851,000

acres of parks and forested lands



175

miles of trails



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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