King County Noxious Weed Control Board

2004 Annual Report





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Staff and volunteers work together at a Gorse Pull work party held April, 2004.

On the cover: close-up of a milk thistle flower, a Class A noxious weed.

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LETTER FROM THE CHAIR

It is my great pleasure to present the 2004 Annual Report of the King County Noxious Weed Control Program. It has been a year of substantial accomplishment for the program. We continue to make significant progress on a range of noxious weeds that are seriously impacting sensitive natural ecosystems, imposing high costs on agricultural industries, reducing recreational value of open space and aquatic critical areas, and threatening public health.

The achievements described in this report are largely those of landowners and other citizens, community groups, businesses, and government agencies who have worked with the program to control the weeds on the lands they are responsible for. Without this commitment, participation and hard work, the impacts of weeds in the county would be much greater.

In 2003, under the direction of the Board, staff of the program underwent a review of its operations in consultation with major stakeholders. The result was a program strategy, which described goals, objectives, performance measures, key activities and principles. This annual report is framed to measure achievement of the measures described in that strategy.

It is clear from this report that the County receives outstanding value from the funds invested in noxious weed control. Rapid response is given to new, high priority weed outbreaks. Through education and other proactive measures, new infestations are prevented. Widespread weeds are reduced in populations to below thresholds of significant impact. As a result, damage caused by noxious weeds is being significantly limited by the activities of the program.

In 2004, we saw the County continue to work towards preserving natural areas, agricultural lands, and open space for future generations. The Noxious Weed Control Program underpins these efforts by ensuring the values of these areas are not undermined by noxious weeds.

Thanks once again for your interest and participation in this important work.

Scott Moore

Chair

King County Noxious Weed Control Board

anthroat

The Impacts of Noxious Weeds

The costs of allowing noxious weeds to invade are enormous. In economic terms, noxious and invasive plant species cost the U.S. economy an estimated \$137 billion annually in damage and control costs (Pimental et al 2000).

These costs in Washington state can be seen from a number of local examples. The Washington State Department of Fish and Wildlife spent close to \$1.3 million in 1998 to control the noxious weeds spartina (*Spartina alterniflora*), purple loosestrife (*Lythrum salicaria*), and saltcedar (*Tamarix ramosissima*). Control of Eurasian watermilfoil (*Myriophyllum spicatum*) alone costs private and government groups in Washington about \$1 million every year. In King County, efforts since 1995 to eradicate a single infestation of hydrilla (*Hydrilla verticillata*), a Class A aquatic noxious weed, have cost close to \$1 millon dollars. A 2003 report to the Mercer Island City Council estimated that it would cost \$48.8 million dollars to remove invasive plant species from parks, open space and public lands on Mercer Island alone.

Many of the economic impacts of noxious weeds are to agricultural industries. For example, the impact of the noxious weed spotted knapweed (*Centaurea biebersteinii*) on

the livestock industry in Montana has been estimated at \$40.5 million per year (Hirsch and Leitch 1996). In King County, the noxious weeds tansy ragwort (*Senecio jacobaea*) and milk thistle (*Silybum marianum*) are significantly reducing the productivity of grazing lands.

Noxious and invasive weeds also pose an extreme threat to the environmental health of natural areas in King County. They alter ecosystems through disruption of food chains, outcompeting native plants and reducing habitat for native wildlife. Weeds are widely recognized as having a significant negative impact on wildlife biodiversity (Adair and Groves 1998). They rank second only to habitat destruction in threatening the extinction of endangered species. Nearly 42% (400 of 958) of the plant and animal species federally listed as threatened or endangered have been negatively impacted by invasive species (USDA Forest Service 2003). Many noxious



Giant hogweed, a Class A noxious weed, has sap that can burn and scar skin.

weeds also have toxic qualities and pose a public health threat. Others can significantly reduce the recreational value of public open space and aquatic areas.

The King County Noxious Weed Control Program (KCNWCP), under the direction of the King County Noxious Weed Control Board, develops and implements the county response to this serious issue. This report describes the results of the program's activities in 2004 and the benefits these have produced for King County citizens. The general results of an effective noxious weed program on the extent of weed infestation and the benefits provided are summarized in Figure 1.

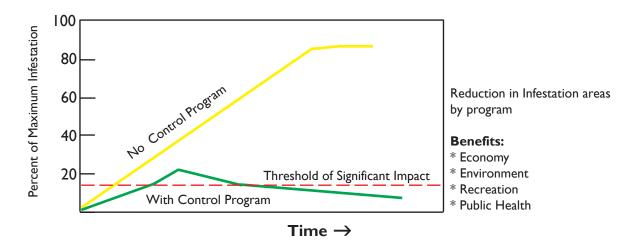
Noxious weeds are defined by Washington State Weed Law (RCW 17.10, WAC 16-750) as non-native



Perennial sowthistle (Sonchus arvensis), a Class B noxious weed, is an increasing problem in natural areas and open spaces around King County.

plants that, once established, are highly destructive, competitive, or difficult to control. The 2004 King County Noxious Weed List contains 111 plant species (see Appendix A). The State Weed Law requires all landowners to eradicate Class A noxious weeds and control designated Class B and county-selected Class C noxious weeds on their properties. The County list also includes "Noxious Weeds of Concern" and "Obnoxious Weeds." These are weeds that the Noxious Weed Board strongly recommends for control and containment although their control is not required in King County.

Figure 1: The Results of an Effective Noxious Weed Control Program over Time



Goals and Objectives

The King County Department of Natural Resources and Parks (DNRP) has the vision of: Sustainable and livable communities — clean and healthy natural environment.

Working towards this vision, the objective of the King County Noxious Weed Control Program is:

To reduce or prevent impacts of noxious weeds on the environment, recreation, public health and the economic resources of King County.

The program will achieve this objective by working towards the following operational goals:

- 1. Eradicating existing infestations and preventing new invasions of Class A noxious weeds,
- 2. Controlling designated Class B noxious weeds to below the threshold levels of significant impacts and,
- 3. Educating the community of stakeholders about prevention and management of noxious weed infestations, and increasing participation in noxious weed control activities.

These goals and objectives were defined through the development of a strategic plan for the program, under the direction of the King County Noxious Weed Control Board. This strategic plan was also used to help develop program priorities and activities in 2004 and to measure its performance. This annual report describes the progress made in 2004 towards achieving these objectives, goals and long-term vision.



Seasonal weed specialists work on controlling and eradicating high priority noxious weed infestations when property owners need assistance.

Major Results

King County was extensively surveyed in 2004 in order to detect new weed infestations and measure changes in the extent of known infestations. Citizen and other stakeholder reports of new infestations were quickly verified. Program staff subsequently worked with the responsible landowners to achieve the required level of weed control. The effectiveness of weed control activities for each infestation were then monitored.

Eradication of Class A Noxious Weeds

There are 30 Class A noxious weeds designated for control in King County. These weeds are listed in Appendix A. Ten of these weeds have been recorded as growing in some part of the county. The goal for these weeds is eradication of existing infestations and prevention of new invasions. The following significant progress was made in 2004 towards achieving this goal:

• Prevented invasions of new Class A noxious weed species

There were no invasions of new Class A noxious weed species recorded in 2004.

• Eradicated 60% of the Class A noxious weed area found to date

Good progress was made towards the eradication of Class A noxious weeds known to occur in the County. Sixty percent of the area of Class A weeds found since the commencement of the program has now been eradicated¹ (Figure 2). Two Class A noxious weeds (buffalobur and velvetleaf) have been eradicated from King County and no new sites were found for two others (bighead knapweed and Spanish broom).

• Controlled 90% of Class A noxious weed infestations found in 2004

There were 897 Class A weed infestations found on parcels in King County in 2004, 90% of which were controlled² (Table 1). Eighty-one percent of the total area of these infestations was controlled. Of the Class A infestations found in 2004, 85 were new discoveries, including significant numbers of new garlic mustard and lawnweed infestations in Seattle and goatsrue and milk thistle infestations in south King County.

¹ Defined as not found in 2004.

² Defined as containment and prevention of seed production or propagation.

Table 1: Control of Class A Weeds by Area in King County 1999–2004

Class A Weeds	1999	2000	2001	2002	2003	2004
Number of Infestations	740	903	892	949	1014	897
Surveyed						
Number Controlled	661	754	796	888	904	811
Percent Controlled	89%	83%	89%	94%	89%	90%
Percent of Area	82%	96%	74%	83%	72%	81%
Controlled						

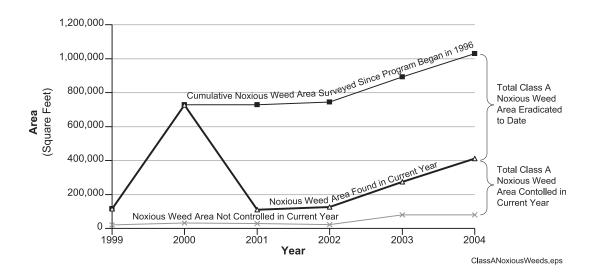


The Class A weed velvetleaf (Abutilon theophrasti) has been eradicated from King County.



No new infestations of the Class A weed bighead knapweed (Centaurea macrocephala) were found in 2004.

Figure 2: Control of Class A Weeds by Area in King County 1999–2004



Control of Designated Class B Noxious Weeds

There are 52 Class B noxious weeds designated in King County (Appendix A). The program's operational goal is to achieve control¹ of these weeds, bringing them to below the threshold levels of significant impact. The following progress was made in 2004 towards achieving this goal:

• Eradicated 5% of the Class B noxious weed area found to date

As the program is able to survey more properties and roads in the county each year, the area of Class B noxious weeds found continues to increase. Of the area infested by Class B noxious weeds in 2004, 18% was in new infestations. Control of seed production is the overall goal for designated Class B noxious weeds so we don't expect to see a dramatic decrease in overall area of infestation. To date, 5% of the area of Class B weeds found since the commencement of the program has been eradicated² (Figure 3).

• Controlled 82% of designated Class B noxious weed infestations found in 2004

Of the 3,696 Class B weed infestations that were found on parcels in King County in 2004, 82% were controlled. Expressed in terms of total area of infestation, 64% was controlled (Table 2). Of the Class B weed infestations found in 2004, 376 were new discoveries. In general, for Class B noxious weed infestations found every year, there is a trend over time of increasing percentage of the number of infestations that were controlled even though significant new areas of infestation are found each year (Table 2 and Figure 3).

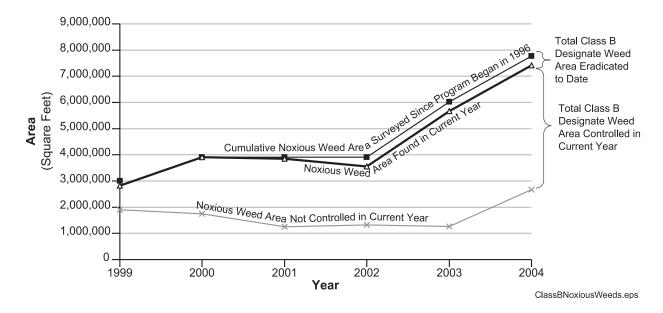


Figure 3: Control of Class B Weeds by Area in King County 1999–2004

¹Defined as containment and prevention of seed production or propagation.

² Defined as not found in 2004.

Citizen Participation in Weed Control and Other Major Performance Measures

Through an extensive range of education and outreach activities, the noxious weed control program seeks to increase the awareness, knowledge and participation of landholders and other stakeholders in weed management. A summary and five-year comparison of measures of landholder participation and other major performance measures is shown in Table 3. Highlights of these include:

• Discovered 732 new noxious weed infestations in 2004

The total number of known noxious weed infestations in King County is steadily increasing (Table 3). 732 new weed infestations were discovered in 2004 (Table 3). New infestations that were most frequently identified were tansy ragwort, giant hogweed, spotted knapweed and



Citizen participation in weed control is key to achieving the program's goals.

purple loosestrife (Appendix C). This is the result of the effective, on-going weed survey effort as well as high levels of citizen reporting, participation and involvement.

There are now records of 9,634 noxious weed infestations in King County (Table 3). A breakdown of these showing the number of infestations by weed species is given in Appendix B. A complete description of the number of infestations found from 1999 to 2004 for the 20 most common noxious weeds is given in Appendix G.

• Continued high overall level of noxious weed control

Overall, 80% of the recorded noxious weed infestations were controlled in 2004. This is similar to the high levels of control achieved in 2003 (82% controlled) and significantly greater than the general level of control achieved in the years prior to this (Table 3).

Class B	1999	2000	2001	2002	2003	2004
Number of Infestations	1425	2302	2755	2888	3876	3696
Number Controlled	926	1501	2234	2046	3107	3048
Percent Controlled	65%	65%	81%	71%	80%	82%
Percent of Area Controlled	33%	55%	68%	63%	80%	64%

Table 2: Control of Class B Weeds on Parcels in King County 1999-2004

• Increased stewardship and community participation in noxious weed management

Program staff undertook a wide range of education and outreach activities seeking to increase the level of community participation in noxious weed management and the stewardship of publicly owned natural lands. These activities are described in detail in the relevant major activity reports that follow.

Table 3: Program Performance Indicators 1999–2004

Weed Control	1999	2000	2001	2002	2003	2004
Performance Measures						
Number of infestations – cumulative	3099	4655	5769	6957	8037	9634
Number of infestations surveyed	2876	4337	4894	5191	6506	6443
each year						
Percent of infestations controlled.	73%	72%	77%	72%	82%	80%
Control is defined as management						
action to prevent seeding or spread						
of a noxious weed						
Percent of infestations surveyed that	64%	64%	69%	62%	74%	73%
were voluntarily controlled						
Percent of infestations surveyed	8%	10%	10%	10%	10%	8%
controlled by weed program staff						
Percent of infestations surveyed	1.0%	0.0%	0.2%	0.7%	0.2%	0%
controlled by enforcements						
Percent of infestations with no	26%	30%	38%	40%	45%	51%
weeds seen in current year						
Number of New Sites (new sites are	1091	1558	1189	1197	1081	732
defined as those recorded for the						
first time that year)						
Percent of total infestations that are	38%	36%	24%	23%	17%	11%
new						
Landowner Notifications						
Number of Total Notifications	1286	1615	2043	2005	2159	3382
% notifications done by mail or email	60%	72%	80%	74%	76%	86%
% notifications done by phone or fax	16%	13%	9%	11%	11%	6%
% notifications done in person or by	24%	15%	12%	15%	13%	9%
doorhanger	, ,	, .	1.270	10,0		0,75
a comange						
Infestation Reports						
Number of infestation reports	200	292	220	332	143	134
Percent of infestation reports	88%	91%	80%	89%	90%	91%
checked						
Percent of reports confirmed correct	73%	74%	74%	79%	66%	59%

Education and Outreach

Community and landowner education is the single most important activity of the King County Noxious Weed Control Program. The program aims to achieve an informed community of stakeholders with effective participation in the prevention and management of noxious weed infestations. Informed and committed citizens are the key to the management of noxious weeds in King County. To achieve a knowledgeable and engaged community, the program carries out a wide range of outreach and training activities targeted to reach the key stakeholder groups in the county.

In 2004, program staff worked individually with over 3500 landowners, land managers, weed control contractors and public weed management personnel to provide them with the tools needed to locate and manage noxious weeds on their properties in King County. In addition, program staff answered a broad range of inquiries on invasive and noxious weeds, provided technical handouts on weeds and performed site visits to help property owners identify and manage weeds. The use by the public of the program website continues to increase and program brochures and technical handouts are often downloaded from the web as well as being requested by mail. Website use increased 56 percent in 2004, showing a growing interest in noxious weeds by the general public.

In addition to one-on-one technical assistance, the program provided outreach to a wide range of groups and neighborhoods through presentations, technical workshops, volunteer work parties, the program website and informational booths. In 2004, the program was able to reach more people by providing presentations to larger audiences while still doing smaller presentations where that was more effective. By participating in regional outreach events such as the Northwest Flower and Garden Show and the Puyallup Fair as well as local community events throughout the county, the program was able to reach a broad segment of the general public. In all these cases, the public response was very positive. Particularly in rural areas, the public appreciated and benefited from program staff coming to them with information and advice on managing invasive weeds in a positive, non-regulatory approach.

The program tracks its outreach activities each year. A summary of this data is provided in Table 4. Highlights of the program's 2004 outreach activities are also outlined.

Table 4: Education and Outreach Activities 2000-2004

Education and Outreach Activity	2000	2001	2002	2003	2004
Total audience for presentations (est.)	321	312	988	925	2296
Number of contacts at events (est.)	N/A	N/A	N/A	2800	5596
Number of presentations	31	18	63	45	36
Number of major public outreach events	N/A	N/A	N/A	9	15
Requests for brochures and fact sheets	137	185	209	155	94
Technical assistance calls and emails	103	128	124	238	218
Other types of technical assistance	51	72	51	23	34
(including site visits)					
Total outreach and education activities	322	403	447	468	397
Brochures and bulletins distributed	9,881	23,095	14,634	13,355	20,502
Website visitor sessions	N/A	N/A	66,061	71,645	111,738

2004 Education and Outreach Highlights

- Thirty-six formal presentations and training workshops in weed management were provided to increase the skill levels of landowners, stewardship groups, federal, state and local agency staff, volunteers and other stakeholders regarding noxious weed management issues. New in 2004 were three training workshops developed and carried out by program staff and targeted toward municipal and county agency vegetation management personnel. These workshops provided pesticide license recertification credits and taught integrated pest management strategies for noxious weeds on the county noxious weed list.
- Program staff provided outreach to the public on noxious weeds at 15 community and regional events, including the Northwest Flower and Garden Show, the King County Fair, the Puyallup Fair, Issaquah Salmon Days, Vashon Strawberry Festival, Lake Forest Park Green Fair and Shoreline Natural Yard Care Festival.
- The program partnered with several non-profit organizations and municipal programs



The noxious weed educational booth at the Small Farm Expo in Enumclaw draws a large crowd.

to carry out volunteer weed pull events including Student Conservation Association, Mercer Island VOICE youth group, Port of Seattle, Seattle Parks and Recreation Department, People for Puget Sound, and Westside School in White Center. More than 270 volunteers worked to remove invasive weeds at these events.

 Program staff contributed to regional conferences and symposia including the Society for Wetland Scientists

Conference and a regional Knotweed Symposium. In addition, program staff contributed to county and WRIA training on invasives at Lakeside Living and Naturescaping workshops.

• The program continued to increase its positive incentive programs including a formal cost-share program to assist landowners who are unable to afford noxious weed control on their property, an informal program of assisting elderly and incapacitated landowners with manual removal of noxious weeds and the distribution of solid waste vouchers to private citizens to encourage proper disposal of noxious weed materials. In 2004, 48 vouchers were given out to citizens for noxious weed disposal.

• The program achieved significant positive media exposure in 2004, appearing in print, radio and TV news at least 11 times. Program staff were interviewed by the media five times, including a 30-minute feature interview on a local cable TV channel, KTBW. The program generated seven official press releases through King County Public Affairs including an article on a gorse pull at a school in White Center, a knotweed CWMA

project report, a report on purple loosestrife biological control success, a butterfly bush alert and a localized release on Vashon Island about policeman's helmet. A major media event associated with the release of purple loosestrife biological control agents resulted in significant primetime news coverage on KING 5, UPN 11, KIRO 7 and Q13 TV.

 Program staff worked with King County's CTV and other community access TV stations to



Release of biological control agents generated major media coverage.

broadcast the Washington State Weed Board's noxious weed video "Noxious Weeds: Everyone's Enemy" along with a public service announcement on Japanese Knotweed. The program received numerous inquiries in response to airing this video.

- Program staff worked on extensive revisions of the Best Management Practices (BMP's) for the noxious weeds of most importance to King County citizens and land managers.
- A new full color handout targeted to urban landowners was produced titled "Neighborhood Bullies: Invasive Weeds in Urban Lands." In addition, a new line of practical, easy to read fact sheets was designed for four top priority noxious weeds. The information and color photos in these fact sheets will greatly improve the program's ability to provide technical information on noxious weeds to the general public. Additional fact sheets will be developed following the same design on additional weeds.
- The program provided over 7,000 brochures and handouts to other county agencies, non-profits and municipal agencies for their outreach efforts on invasive plants. In total, the program distributed over 20,000 brochures and handouts on invasive and noxious weeds in 2004.