



STRATEGIC PLAN

Updated 2021



King County

NOXIOUS WEEDS

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I. THE PROBLEM

New plants have been continually introduced to King County since the beginning of settlement and development for agricultural, horticultural, forestry, commercial and cultural purposes. Many of these deliberate or accidental plant introductions have become or have the potential to become weeds. Weeds are plants that can cause adverse impacts. They are a significant threat to primary production, biodiversity and conservation values in King County and Washington State. Weeds also increase costs to infrastructure maintenance and reduce the recreation value of parks and reserves. Some weeds have well documented and sometimes serious effects on human health.

Weeds can be plants from other countries, or species from other regions of the United States. Not all weeds are equally significant. The vast majority of introduced economic and ornamental plants do not become weeds. Unfortunately, a few plants are very invasive and damaging and are capable of completely dominating and changing the plant communities they invade. Changes to the structure, function and composition of natural and artificial ecosystems and landscapes may severely impact the economic, environmental and social benefits they provide.

II. WHY WE NEED A STRATEGY

The King County Noxious Weed Control Program needs a strategy to:

- ⇒ Have a common, agreed, coherent approach
- ⇒ Maximize effectiveness and efficiency public and community weed control investment
- ⇒ Have common aims and direction
- ⇒ Assist communication with stakeholders
- ⇒ Quantify and evaluate progress / benefits

III. STRATEGIC CONTEXT

The Noxious Weed program is an important component of the work of the King County Department of Natural Resources and Parks.

It contributes to achieving the following DNRP Mission:

To be a steward of the region's environment and strengthen sustainable communities by protecting our water, land and natural habitats, safely disposing of and reusing wastewater and solid waste, and providing natural areas, parks, and recreation programs.

The King County Noxious Weed Control Program Strategic Plan also strongly contributes to the implementation of the DNRP Water and Land Uses Division (WLRD) Strategic Plan.

The goals of the WLRD Strategic Plan are to:

Protects, restores, and manages King County's water and land using the best available science, innovation, and collaborating with our partners and the community.

Within this strategic context, the King County Noxious Weeds Program strategy has developed the following hierarchical order of vision, mission, objectives and goals. These are achieved by the implementation of a range of key activities and specific actions.

IV. VISION, MISSION, & GOALS

Vision

Healthy and resilient landscapes in King County where the environmental, economic and social impacts of noxious weeds are minimized.

Mission

What we will do towards achieving our vision

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

Objectives/Goals

This mission will be achieved by working towards the following specific measurable operational goals:

1. Prevent the establishment of Class A Noxious Weeds and eradicate existing infestations
2. Control regulated Class B and Class C noxious weeds to below levels of significant impact and
3. Early detection and rapid control response of infestations of other new or recently detected noxious weeds with restricted distributions
4. Support the management of widespread noxious weeds to protect high value public assets , and facilitation of more cost-effective, coordinated landscape-scale control effort
5. Educate the community about prevention and management of noxious weed infestations and increase participation in voluntary community-based noxious weeds control activities.

This strategy provides a framework which will encourage and support the citizens of King County to work together and achieve this mission and objectives.

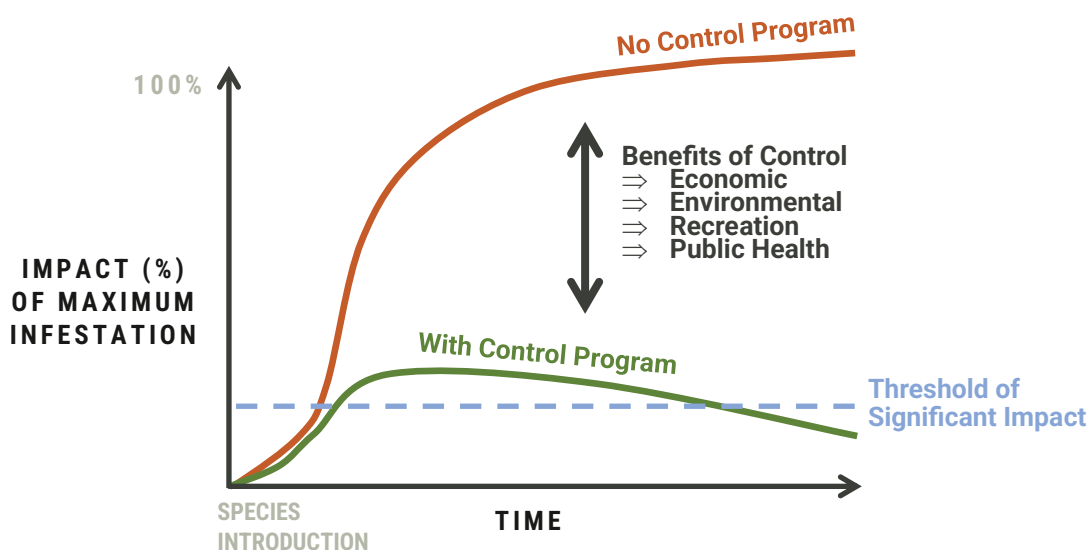


Figure 1: the general benefits of noxious weed control over time.

V. PRINCIPLES OF WEED CONTROL

This strategy, and the day-to-day management actions to implement it will be informed by the following principles of weed management:

Priority Setting

An objective system of setting priorities for weed management is critical to ensure that resources are focused to maximize the benefits and return on public investment.

Priorities will be based on assessment of the probability of introduction and spread, the current distribution of the target species, and an assessment of the potential impacts of its spread within King County, as well as cost effectiveness of control or eradication (see *Figure 2* below). Priorities can be set in terms of either: 1) weed species targeted (weed species led control e.g. Class A weeds), and 2) priority areas where specific assets or values are threatened by weed invasion. Species – based priorities are more cost effective for weed species in the early stages of weed invasion and asset-based priorities are more appropriate for well-established weeds.

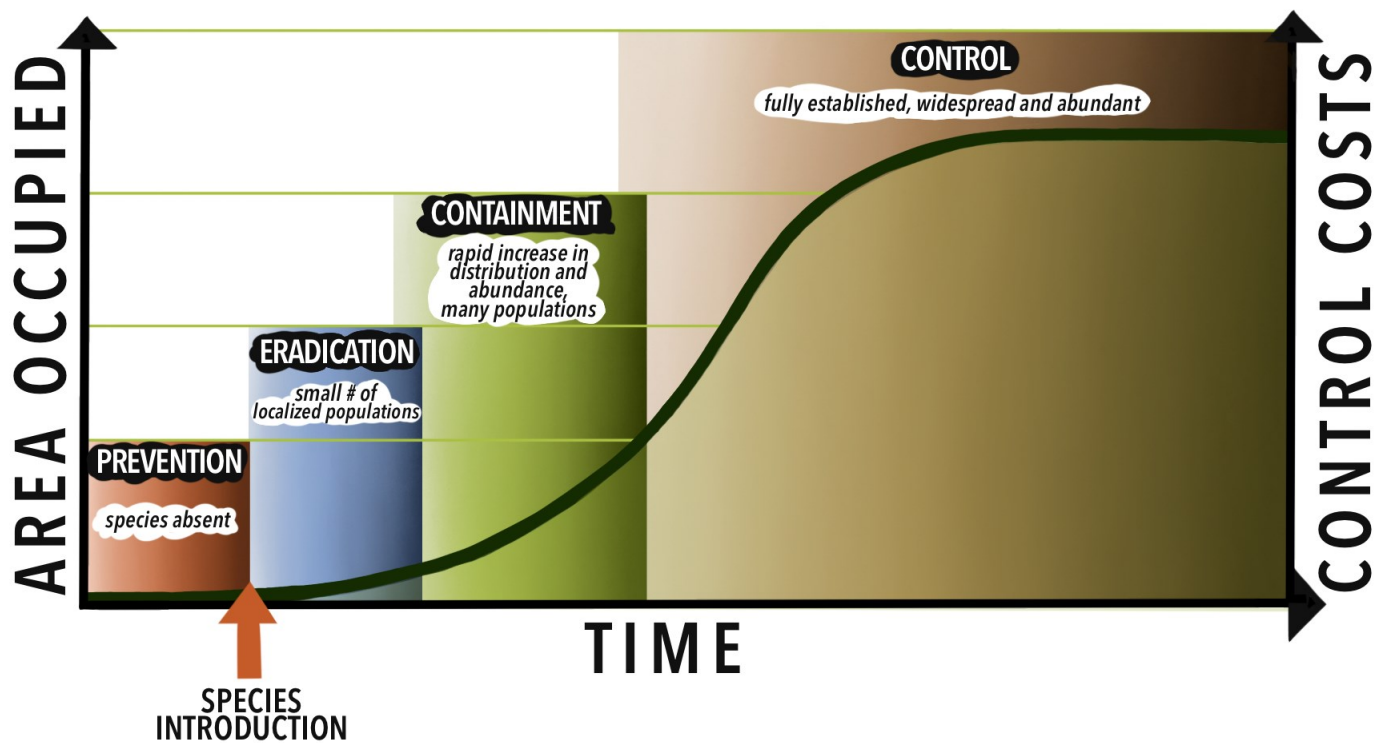


Figure 2: the Invasion Curve illustrates how noxious weed control is prioritized based on a species prevalence in an area.

Integrated Pest Management (IPM)

Integrated Pest Management (IPM), as defined by RCW 17.15, is a coordinated decision-making and action process that uses the most appropriate pest control methods and strategy in an environmentally and economically sound manner to meet programmatic pest control objectives.

The elements of the King County Noxious Weed Control Program's IPM plan include:

- a) Preventing noxious weed problems;
- b) Monitoring for the presence of noxious weeds and weed damage;
- c) Treating noxious weed problems to reduce populations using strategies that may include biological, cultural, mechanical, and chemical control methods – always considering human health, ecological impact, feasibility, and cost-effectiveness;
- d) Minimizing the use of harmful pesticides by offering information on least toxic control methods and educating property owners who choose to use chemical controls on their correct use; and
- e) Evaluating the effects and efficacy of noxious weed control treatments.

Cost sharing

Contributions to weed management costs should reflect the relative importance of each weed problem and will be shared by the contributors to the problem and the beneficiaries of that management. King County government on behalf of its citizens primarily contributes to weed management activities that produce public or community benefits. Public or community benefit may be defined as 1) the long-term protection, securing or enhancement of natural resources (soil, water, biodiversity, habitat), public health and public recreational assets. Private landowners and other users are expected to pay for activities which provide private benefits.

Prevention

By far the most cost-effective strategic action is to prevent the introduction of new weed species to an area. Community education of citizens and other stakeholders regarding the risks of weed invasion and awareness of the need to check weed potential before importing a plant into the County is most important method of preventing weed introductions.

Early Detection and Rapid Response (EDRR)

New weed infestations usually rapidly expand their range after their initial establishment. The probability of successful eradication diminishes greatly with time after initial infestation. The costs and difficulty of eradication increase greatly with larger, more established infestations. *Figure 3* shows the general relationship of the impacts of weed infestations and the effectiveness of control efforts over time.

The vast collective experience of weed control science and practice is that early detection and control of new weed infestations is very important to maximize the effectiveness and efficiency of weed management effort. Effective monitoring and rapid response systems to detect and quickly eradicate new infestations are therefore particularly important. Areas that area potentially as risk from weed invasion will be regularly surveyed by program weed specialists. Response protocols for new infestations will be developed and rapidly implemented after detection. Online tools and a mobile App "Report a weed" will be developed and deployed to encourage citizens scientists to report weed infestations.

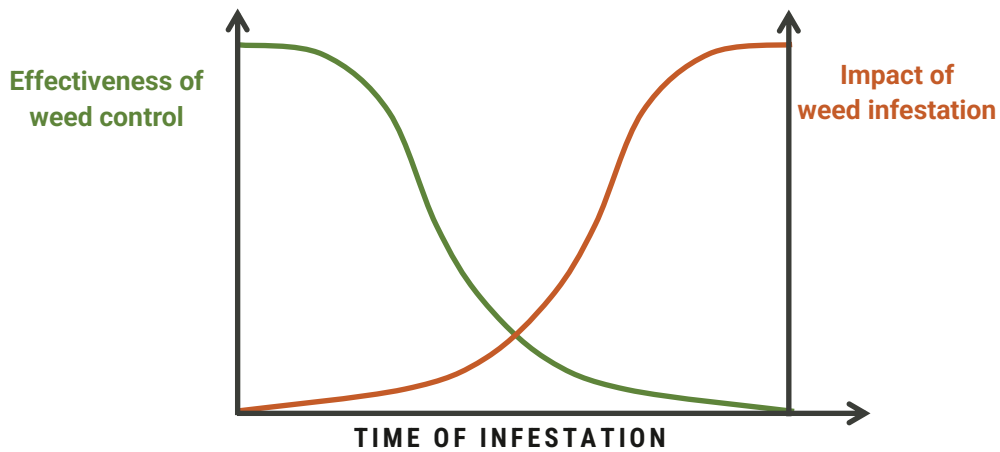


Figure 3: the general relationship of weed infests over time illustrating how the longer an infest exists, the greater the impact it has and the less effective controls are on the infest as its allowed to establish further.

Coordination – working with neighbors

To be effective, weed management needs to be coordinated at the landscape level. Individual weed control effort without a coordinated approach with neighbors frequently results in rapid re-invasion from neighboring infestations. Collective action is necessary where the problem transcends the capacity of the individual/landholder to address it adequately. Watershed and landscape level planning and effective community education and communication can increase the level of coordination of weed control effort and therefore effectiveness.

Successional management

Eradication and control practices should aim for the long-term replacement of the weed-dominated vegetation community with a stable, competitive and desirable vegetative cover. Successional management generally involves:

- 1) Designed disturbance or selective removal of target weed species;
- 2) Controlled colonization of desirable species;
- 3) On-going management and stewardship which favors the desired species.

Primary and crucial role of land managers

The primary responsibility for weed management rests with land owners and land managers. Individual land managers and land owners have a role to:

- ⇒ Manage land to minimize the potential for weed invasion
- ⇒ Implement environmentally sound and effective weed management practices
- ⇒ Detect and report new noxious weed infestations
- ⇒ Cooperate with and where relevant, plan weed management activities jointly with neighbors
- ⇒ Minimize potential for spread of noxious weeds to neighboring properties

Maintenance

Weed infestations that have been controlled or even eradicated usually require long-term maintenance to prevent re-infestation. Usually this involves maintenance of a vigorous and competitive vegetative cover and monitoring of the site and undertaking early intervention to quickly control any re-establishment or re-invasion. The program will support and encourage long term stewardship of lands.

VI. KEY ACTIVITIES & ACTIONS

The King County Noxious Weed Control Program Strategy establishes a framework for action based on the following eight activities. Specific program actions are detailed for each activity.

1. Education, training, and communication

Community and landowner education is the single most important activity of the King County Noxious Weed Control Program. This aims to achieve an informed, aware community of stakeholders with effective participation in the prevention and management of noxious weed infestations. Aware and dedicated people are the key to the management of weeds in King County.

A communications plan has been developed to increase the effectiveness of program communications. This communications plan recognizes the following five target groups of County stakeholders: 1) farmers/rural landholders, 2) community groups, 3) local and state government, 4) urban landowners with weeds, 5) general landholders without weeds and 6) King County staff. For each target group, learning outcomes, target messages, and communication methods to be used have been defined and scheduled.

Individual landowners with weed infestations will receive direct communications with weed program staff regarding weed management options, Best Management Practices and compliance required under state weed law RCW 17.10.

Training is required to increase the skill levels of landowners, stewardship groups, federal, state and local agency staff, volunteers and other stakeholders. A training program will be implemented annually that increases the knowledge and technical skills of these stakeholders regarding noxious weed management issues.

The King County Noxious Weed Control Program will also compile and publicize lists of known or potential invasive species and educate citizens to minimize the importation of new weed species to King County.

2. Inventory, mapping, and monitoring

All parts of King County will be regularly and intensively surveyed to rapidly detect any new weed infestations as well as any changes in extent of known infestations. Citizens and other stakeholder reports of new infestations will be quickly verified. Community reporting of new infestations will be encouraged. Program staff will verify and record new infestations in the field. Landowner compliance and the effectiveness of weed control activities for known infestations will also be monitored. Data describing noxious weed infestations and management will be maintained in relational and spatial data bases, providing for significant potential to analyze, map, present and interpret data.

3. Planning, coordination, and integration

Program staff will work with communities to develop local community standards for weed control and to coordinate weed control effort to maximize its effectiveness and efficiency. One mechanism to achieve local and statewide coordination of weed management is through implementation and monitoring of weed management plans. Specific weed management plans will be developed for high priority Class A noxious weeds (such as Garlic Mustard, Milk Thistle, and Goatsrue). Local governments in incorporated areas will also be encouraged to develop local weed management plans. These plans will ensure that resources are used effectively and the benefits are delivered to the widest range of stakeholders.

Planning processes for setting priorities and facilitating planning and coordination of weed management by landowners at the landscape scale will also be developed. Cooperative Weed Management Areas (CWMA's) are one mechanism that will be used to achieve this. A CWMA refers to a local organization that integrates all noxious weed management resources across jurisdictional boundaries in order to benefit entire communities. The purpose is to facilitate cooperation across jurisdictional boundaries and increases efficiency and effectiveness of weed control efforts of participants.

Program staff will also work to ensure that weed control activities of the program are integrated with other natural resource management programs of King County. Weed management objectives and activities should be included in other King County Natural Resource Management plans and programs. Particular County programs requiring close coordination and integration with the Program regarding noxious weeds management are: 1) Those promoting opportunities for restoration and stewardship (i.e. Small Habitat Restoration, the River & Floodplain Management Section), 2) the aquatic weed management activities of Lake Stewardship Programs, 3) Resource use programs such as the Agriculture and Forestry Program, and 4) Land management programs like those managed by King County Parks and King County Department of Transportation.

The program will work to identify and legislative or programmatic gaps or weaknesses which hamper effective noxious weed control. One particular focus for this is jurisdictional responsibility and operational capacity for noxious weed control in waters of the state and state-managed lands in general.

4. Regulation

Regulation can only work if there is a high level of community awareness, agreed community standards and broad cooperation on weed management issues. Whilst regulatory compliance is sometimes necessary, it needs to be applied carefully to reinforce voluntary compliance and community standards for weed management established by education programs. Regulatory compliance mechanisms available under RCW 17.10 may be used for priority regulated noxious weed infestations when education and outreach programs have established a community standard of weed control in an area and when voluntary compliance is not achieved with a landholder.

Protocols to prevent the introduction of potential weed species at the national and state level need to be improved, including action by USDA Animal and Plant Health Inspection Service (APHIS), and the Washington State Department of Agriculture.

Regulation continued on next page...

Regulation continued ...

In particular, there is a need for the increased use and expansion of regulatory provisions restricting the sale of noxious weeds from plant nurseries (WAC 16-752-610, 16-752-500, 16-752-400). The State Department of Agriculture needs to expand its capacity to restrict the movement of weed seed contaminated hay, other feedstocks planting stock and soil. The development of voluntary codes of practices regarding the sale and distribution of noxious weeds and plant species with weed potential should also be explored with the nursery and feedstock industries by the Washington State Weed Control Board.

The USDA Animal and Plant Health Inspection Service (APHIS) has the responsibility to reduce the potential for importation of noxious weed seed or propagules from overseas. There is significant potential for noxious weed invasion from Canada which need to be addressed by APHIS. For example, Giant Hogweed is not a declared noxious weed in British Columbia and is quite common in the Vancouver area, creating a significant risk of continued introduction. The State Weed Board should work to achieve a greater Federal Government effort to restrict the importation of invasive species and to restrict internet sales of seed of Federally listed noxious weeds.

5. Incentives and support

King County may provide technical and material support to individuals and local communities for high priority weed control works with high public benefit. This may occur when broad economic, environmental and social benefits are demonstrated, and cost-effective and technically sound solutions are available. In particular, this level of support is warranted where it catalyzes a greater level of community weed control effort for priority weed species. Weed control services will be provided to landowners who demonstrate they are physically or financially incapable of fulfilling their required weed management responsibilities.

The King County Noxious Weed Control program will also work with other King County Programs providing landowner assistance and support to ensure that sound weed management is also integral to these programs. These programs should also encourage projects which integrate weed management into their long term sustainable land management objectives.

6. Research and development

Currently good levels of information and knowledge are available for some weed species and very little for others. The King County Noxious Weed Control Program will work to improve the knowledge base for weed management in King County. The program will collaborate with R&D organizations to fill knowledge gaps where they are identified. Where appropriate, program staff may conduct applied research and development on priority weed management issues.

Particular program emphasis will be placed on careful observation and adaptive management by program staff. The experience of all weed managers needs to be captured to ensure that practical knowledge is made available to all current and future participants in weed management projects. Best Management practices for all priority weed species in King County will be developed and regularly updated.

7. Monitoring and evaluation

Monitoring and evaluation needs to be undertaken to measure the success of the activities described in this strategy and the degree to which its goals and objectives are being achieved. Program performance is continually monitored, reviewed and analyzed to ensure that its approach is consistent with and supportive of any changes in environmental response, community expectation or scientific knowledge. Monitoring and evaluation also creates the opportunity to make changes to the strategy and program into the future which will enhance future program effectiveness and efficiency.

The following performance indicators have been developed to objectively assess the success of the strategy and program. These performance indicators will also be used to as the basis for reporting to the King County Council and Citizens and other stakeholders.

The degree to which the goals and objectives of this strategy are being met will be assessed using the following performance indicators:

Weed control outputs

By weed species:

- ⇒ Number of infestations – cumulative
- ⇒ Area of infestations – cumulative
- ⇒ Number and % of sites / area surveyed
- ⇒ Number and % of sites / area controlled *
- ⇒ % of sites / area eradicated *
- ⇒ % of sites / area of new sites *

County-wide indicators:

- ⇒ Number of infestation reports
- ⇒ % Infestation reports checked
- ⇒ Number complaints of noxious weeds on County Lands
- ⇒ % complaints resolved to the satisfaction of complainant
- ⇒ % of sites / area controlled in current year
- ⇒ % of sites / area eradicated

Definitions *

Control is defined as management action to prevent seed production or dispersal of a plant parts capable of forming new plants.

Eradication is defined as no visible presence of the weed observed on the site for 3 consecutive years or more.

New sites are defined as recorded for the first time that year.

Education and outreach outputs

- ⇒ Number of information requests
- ⇒ Number of training courses/seminars/workshops conducted and number of participants
- ⇒ Number of training courses, public presentations & outreach events, and number of participants.
- ⇒ Us of Web resources; #subscribers, # blog visitors, and # unique website visitors

8. Reporting

Monthly progress reports will be made by program staff to the King County Noxious Weed Control Board. Evaluation will include assessing changes in the extent and number of weed infestations, determining the effectiveness of control techniques, and an assessment of the costs and benefits of the program. An annual report and evaluation will be prepared for the program annually. This will be presented to the Board and the King County Council and on the Program website.