



Invasive Species Management Strategy



District of Saanich

Adopted by Saanich Council

April 15, 2013

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Executive Summary

Purpose

Saanich's Strategic Plan (2011-2015) identified the need for Saanich to develop an Invasive Species Management Strategy (ISMS). The purpose of the ISMS is to optimize municipal resources and minimize the impacts of invasive species in Saanich through a comprehensive program. The ISMS addresses invasive species management on public and private land, roles and responsibilities, priorities, actions, community stewardship, partnerships, and resources.

What are Invasive Species?

Invasive species are species of plants, animals or other organisms introduced to areas outside their natural past or present distribution. They are often referred to as aliens, exotics, foreign, or non-native. They are regarded as harmful when their introduction or spread threatens the environment, economy or society, including human or animal health.

Why an Invasive Species Management Strategy?

The spread of invasive species has become a major concern for ecologists, naturalists, and land and water managers across the province of British Columbia. Awareness about the ecological and economic impacts caused by invasive species has grown over the past decade. It is estimated that the spread of invasive species is second only to habitat loss as the major cause of declining biodiversity. Saanich has committed increasing resources to controlling invasive species, particularly those that pose high ecological or human health risks. Some of these invasive species have been listed in our Noxious Weed Bylaw and every year, new invasive species are expected and will require rapid response to contain their spread.

Scope

The main focus of the ISMS will be on invasive plant species. The strategy builds on lessons learned from previous work on invasive plant species management within Saanich, regionally and globally. The ISMS will provide the framework for successful invasive plant species management and is expected to remain relevant over the next ten years. The management of invasive animals and other animal conflicts will continue to be considered in the future on a species-by-species basis.

Process

In May of 2011, the District of Saanich engaged the services of Dr. Val Schaefer, Restoration of Natural Systems Program, at the University of Victoria to help Saanich develop the ISMS. His consulting team researched and reviewed relevant background information and documents. The team also held two workshops and two open houses to engage various stakeholder groups such as Saanich staff, Council Committees, Environmental Non-Government Organizations, Saanich Community Associations, special interest and stewardship groups.

The ISMS builds on four previous documents – the Document Review for the Invasive Species Management Strategy, the Saanich Staff Workshop Overview, the Saanich Public Engagement Workshop Overview, and the Invasive Species Survey Report.

Vision

The Vision for the Invasive Species Management Strategy is:

A sustainable future for Saanich includes healthy ecosystems, people and animals, as well as a vibrant economy protected from new and established invasive species populations. This will be attained through a comprehensive community approach to environmental stewardship led and supported by District staff working in partnership with others.

Goal

The Goal of the Invasive Species Management Strategy is:

To prevent, reduce, control and mitigate the effects of invasive species on natural ecosystems, human health and the economy.

Strategies to Support the Goal

There are four strategies that have been developed in support of this goal, each supported by a number of actions.

1. Implement a comprehensive program
2. Prevent the introduction of and eradicate new invasive species
3. Contain and/or control the spread of established invasive species
4. Ensure program sustainability

Next Steps

The implementation of the ISMS will be referred to in and implemented through the Strategic and Departmental Plans as well as the budget review process. The District will develop more detailed information that identifies resource requirements and timing to establish implementation priorities.

Purpose of the Strategy

The Invasive Species Management Strategy (ISMS) was developed to meet the terms in the Saanich Strategic Plan (2011-2015). The purpose of the ISMS is to optimize municipal resources by setting priorities and to establish a program to minimize the impacts of invasive species in Saanich. The ISMS addresses invasive species management on public and private land, staff roles and responsibilities, priorities, actions, community stewardship, partnerships, and resources.

This strategy is designed to support and strengthen the work already undertaken in Saanich.

Why an Invasive Species Management Strategy?

Saanich has a variety of natural areas in its urban and rural landscapes. The topography and microclimates create a wide range of ecosystems including: Coastal Douglas-fir forests, Garry Oak and associated ecosystems, marine shorelines, wetlands and riparian areas. These unique ecosystems, and the goods and services they provide, are important to our community, biodiversity, and economy. Maintaining human and non-human health in Saanich is dependant on diverse, functioning ecosystems.

The management of any species introduced to an environment and found to be harmful has become a growing concern locally, regionally, provincially and nationally. A definition of Alien Species based on *An Invasive Species Strategy for Canada (Government of Canada 2004)* is:

Alien Species are species of plants, animal (including fish), fungi and micro organisms introduced to areas outside their natural past or present distribution. Alien species are also referred to as exotics, foreign or non-native. Invasive Alien Species are alien species regarded as harmful and whose introduction or spread threatens the environment, the economy or society, including human health (Government of Canada 2004).

For the purpose of the ISMS, Alien Species will be referred to as Invasive Species for the remainder of the document.

The primary focus of the ISMS is invasive plant species. Many of these plant species that we now consider invasive have arrived in the region through human import and were often planted as ground cover or for their horticultural interest. Other invasive species arrived unintentionally through various forms of transportation such as visitors, birds, wildlife, trains and boats. Once in the region, and without the natural predators, pests or pathogens that were present in their native habitats, these invasive species have flourished and begun to displace native species, degrade ecosystems and reduce biodiversity.

Invasive plant species are a product of globalization and regarded as the second major cause of declining biodiversity after the loss of habitat. The Capital Region has the highest native biodiversity, as well as the greatest diversity of invasive plant species, in British Columbia. New invasive species are stretching local government

capacity for management and if left unmanaged, invasive species will increase in distribution and density requiring more resources to control.



The impacts of invasive species affect: park lands, roadsides, buildings, landfills and other infrastructure; public health and safety; agriculture; watershed health (water quality) and hydrology (drainage, irrigation); and privately owned lands.

The economic impacts of invasive species are a combination of increased management costs to control the particular species as well as the subsequent loss of resource productivity, such as grazing lands or fish habitat. Recreation, whether on land or water, is affected by invasive plants and animals that reduce or ruin recreational quality. Health hazards posed by particular species, such as skin burns from Giant Hogweed, could be reduced if the plant was properly controlled.

Giant Hogweed on Brookleigh Road

The control and management of invasive species is increasingly becoming a priority for land managers. Saanich has committed to directing existing resources to those invasive species with high ecological impact or those that pose risks to human health.

With limited resources and competing priorities, Saanich must manage lands strategically and collaborate where possible. Invasive species know no borders and the challenges of managing invasive species cannot be resolved in isolation of our regional partners. Ongoing, successful management of these invasive species is required to protect and enhance the natural environment, the social well being and economic vibrancy of Saanich.

The ISMS also considered invasive animals that are non-native to the region and other animal conflicts. As with the above definition of invasive plant species, invasive animals have the potential to negatively impact humans, animals, and/or ecosystems, establishing quickly in new areas and spreading rapidly. Some examples of invasive animal species in Saanich are: American Bullfrog, Eastern Grey Squirrel and European Starlings.

Animal conflicts may be with an individual animal or involve invasive and/or non-native animals, other wildlife, and even pets. These conflicts may be relatively minor “nuisance” type complaints or pose more serious economic, safety, health and conservation concerns. Although many animal species are able to successfully co-exist with humans, as development increases and habitat decreases, problematic encounters become more of a concern. In Saanich, managing animal conflicts can be complicated due to regulatory authority, varying levels of impacts, and diverse perspectives regarding conflicts. Some issues require the intervention of senior governments and a regional approach, while many simply have no easy, quick, or inexpensive solutions.

Scope

The primary focus of the ISMS is on invasive plant species. This strategy builds on lessons learned from previous work on invasive plant species management both locally, regionally, provincially and nationally. The ISMS will provide the framework for successful invasive species management and is expected to remain relevant over the next ten years. The management of invasive animals and other animal conflicts will continue to be considered in the future on a species-by-species basis.

Actions to Date

The District of Saanich currently responds to the threat of invasive species through its operational works, policies, bylaws, outreach and procedures. These actions include:

Saanich Pulling Together Volunteer Program (2011)

Saanich residents have been active removing invasive species in Saanich for several decades. This stewardship has increased exponentially over this timeframe. The Saanich Pulling Together Volunteer Program, including the Garry Oak Restoration Project (GORP), supports groups working primarily in parks by providing start-up training, ecological



restoration guidance, staff and equipment, plant debris removal, and annual training and recognition events. A part-time Coordinator of Volunteers assists with volunteer management in the parks. The Saanich Pulling Together Volunteer Program is designed to engage local residents in invasive plant removal and active ecological restoration of natural areas in Saanich parks and, in certain circumstances, on private lands. The goals of the program are to:

- enhance and improve environmental integrity in our community
- help restore healthy, functioning ecosystems
- educate people about the value and sensitivity of natural areas
- contribute to social well-being through active participation
- recognize that the District of Saanich does not have the resources to remove invasive species and restore natural areas without community support

Garry Oak Restoration Program

In 1999, The Garry Oak Restoration Project (GORP) was initiated in order to improve Saanich's knowledge and reputation for protecting and restoring Garry Oak ecosystems. GORP identified and continues to support nine locations within Saanich Parks to focus volunteer efforts, research, and management of Garry Oak ecosystems. GORP is now under the auspices of the Saanich Pulling Together Program.

Draft Strategy for Invasive Species Control and Education (2003-2009)

In October 2003, an Interdepartmental Committee determined that a strategy for invasive species was needed to address control and education in a coordinated matter. In December 2003, a draft strategy was endorsed by the Interdepartmental Committee, the Environmental Advisory Committee, and the Parks and Recreation Committee. This strategic document was written to outline the problem of invasive species in Saanich, the response to date, roles and responsibilities, priorities, goals, and actions. In 2009, a draft Early Detection/Rapid Response (EDRR) protocol was added. This document was endorsed at the staff level but did not involve any stakeholder input. The document has provided a good start but it was recognized that a more in-depth review and analysis including community input was needed which resulted in the recommendation for an Invasive Species Management Strategy for Saanich.

Active management of invasive plant species by District of Saanich staff and volunteers

Staff regularly equip, train, assist and supervise volunteer groups. While volunteers are the staple of our invasive species removal and restoration events, considerable staff hours are spent outside of events and unaided by volunteers.

For a number of years, it has been Saanich Parks' practice to control ivy on boulevards and park trees as part of its normal arboriculture functions. Saanich Parks use a formal letter which is distributed to landowners to encourage ivy removal from trees on private property.

Some of the projects that have occurred in Saanich over the past several years include the restoration of a right-of-way at Murray Drive, Bow/Feltham Parks, Mount Douglas Park, Konuckson Park, Knockan Hill Park, Goward House Woodlands, and Haro Woods, along with over 30 additional park natural areas in partnership with volunteer groups. Several riparian restoration projects have also been undertaken including the removal of invasive Golden Willow trees within the Capital City Allotment Garden along Swan Creek, at Whitehead Park along Todd Creek, at Bow Pond, in Baxter Park along Swan Creek, along the Colquitz Creek at Admirals Bridge, and along O'Donnell Creek.

In the last three to five years, there has been a notable increase in municipal efforts through the Parks Division, Environmental Services and Bylaw Enforcement to manage invasive plants that are categorized as Early Detection Rapid Response (EDRR) species. These invasive species are new to our area and have relatively low populations and/or number of sites. The 2009 draft EDRR protocol has been used to address the arrival of new species, in particular, Garlic Mustard, Lesser Celandine, Giant Hogweed, Purple Loosestrife, Blessed Milk Thistle and Knotweed species on public lands including Parks, Road Right-of-Ways (ROW's) or on private property.

An interdepartmental working group was established to regularly communicate about new and on-going directions.

Noxious Weeds Bylaw

The Noxious Weed Bylaw was first passed in 1906 to address weeds of threat to agriculture. Recently the bylaw has been updated to include a few EDRR invasive plant species. It has also been updated to include invasive species that pose risks to human health.

Through the Noxious Weed Bylaw, property owners in the District of Saanich are required to control noxious weeds (listed on the bylaw) or any other invasive plants that are “likely to spread or become a nuisance to other...property in the vicinity...” Saanich Environmental Services and Bylaw Enforcement work with property owners to address issues. Some property owners with on-going high risk species on their properties work closely with Environmental Services and receive support and assistance. The bylaw is seen as useful in that it addresses invasive species incursions on private property, but the bylaw requires review to include newly identified EDRR species.

Animal Conflict Management

Saanich, like other regional municipalities, is facing increased animal conflicts. Strategies to manage these issues will require a multi-faceted approach including new and/or amended regulations, the promotion of public educational materials, community partnerships, participation in regional initiatives, and possibly the intervention of senior governments.



Saanich has responded to, and is actively managing, invasive animal species. Some examples include our continued participation in the regional strategy for Canada Geese (goose egg addling) and the development of an educational program with regards to American Bullfrogs.

Saanich adopted new regulations in 2011 to help manage animal conflicts involving rabbits and deer. The Animals Bylaw was amended to prohibit the feeding of rabbits in parks and public spaces; prohibit the sale or adoption of rabbits that have not been spayed or neutered; require rabbits on private property to be contained in secure, enclosed structures; and prohibit the abandonment of rabbits on private or public lands. In addition to prohibiting the feeding of deer, the Municipality is part of the CRD deer management initiative. Saanich will also promote public educational materials with respect to animal conflicts.

Feral cats continue to be an issue that is unresolved in Saanich and may require its own action plan including additional consultation, research and recommendations.

Inventory, Mapping, Monitoring and Best Management Practices

Saanich has an Environmentally Sensitive Areas (ESA) Atlas (2011) which includes the Sensitive Ecosystem Inventory, Conservation Data Centre sites, wildlife trees of protected nests, and other environmental data. A mapping initiative is underway to capture many of the smaller ESA's which will be useful in setting priorities for invasive species management.

Mapping of invasive species is limited and to date has mainly focussed on Garlic Mustard, Lesser Celandine and Knotweed species. A GIS layer has been produced for staff use but is not well populated. In 2010 and 2011, Saanich recorded known Knotweed sites in the provincial Invasive Alien Plant Program (IAPP) mapping system.

Monitoring of known EDRR invasive species populations has been documented in tracking sheets which have been established for all “Eradicate” and “Special Concern” invasive plant species on both private and public lands. Parks and Environmental Services share this information in order to ensure response is coordinated. Staff, volunteers and landowners monitor sites in order to plan for ongoing management.

Best Management Practices (BMPs) provide biological information about invasive species, recommended control treatments as well as integrated pest management planning. A template is being developed to standardize BMPs for all invasive plant species in Saanich. Saanich has produced BMPs for some of the invasive species classified as “Eradicate” and “Control”. Subsequent BMPs are expected.

Natural Areas Working Group (2009 – 2010)

The purpose of this collaboration between Parks and Environmental Services staff was to meet monthly to communicate, collaborate, and define roles around shared goals concerning natural area management on private and public lands. Subsequent collaboration has been maintained through participation in the newly formed Invasive Species Working Group and in the Capital Region Invasive Species Partnership (CRISP).

Capital Region Invasive Species Partnership (CRISP) (2010 – present)

CRISP formed in response to an identified need to improve information sharing and collaborative approaches in the region so that invasive species can be more effectively managed. The first CRISP meeting was held in January 2010, initiated by District of Saanich, City of Victoria and Capital Regional District staff. In July 2011, the Coastal Invasive Plant Committee (CIPC) Board accepted a proposal from CRISP to become an official regional sub-committee of CIPC. The priorities of CRISP include: disposal; staff training, research and trials; regional outreach / educational programs; EDRR; inventory and mapping, restoration and collaboration. In March of 2012, CRISP adopted the CIPC Invasive Species Management Classifications and developed an invasive species plant list for the region based on established criteria. Saanich has used this same rationale to develop an invasive species plant list for the District.

Park Natural Areas Action Plan (2011)

This Action Plan describes the major management initiatives to be undertaken in Saanich’s park natural areas over the next five years. The initiatives are:

- Invasive Species Management Strategy
- Mapping, inventory & monitoring
- Community collaboration & outreach
- Park Management Plans
- Best Management Practices

Park Natural Areas Management Guidelines (2011)

The District of Saanich Park Natural Areas Management Guidelines document defines the framework within which park natural areas are managed to provide the best possible benefit to residents living within Saanich and the Capital Regional District. They have been developed to help us make appropriate decisions as we undertake new development in park natural areas and to guide the Parks Division's operations and maintenance activities within park natural areas.

The guidelines have been grouped into four themes that reflect commonly recurring management challenges. In reality, these themes do not stand alone; they are interdependent and Parks activities must be designed accordingly. The management themes are: Ecosystem; Use and Access; Risk Management; and Community Collaboration.

Other Community Outreach

Public outreach for invasive species has been provided through the Saanich website, brochures, public events, volunteer training workshops and landowner contact/education. Currently, Saanich brochures include our very popular and recently updated "Controlling Invasive Plants on Your Property" brochure which outlines what to do with established invasive plant species. Alert sheets are used for a similar purpose but focus on invasive species with management objectives of eradication or containment, or for invasive species with special concerns such as human or animal toxicity. These Alert sheets are especially useful for staff and public education as well as for Noxious Weed Bylaw enforcement. Saanich's Invasive Species and Noxious Weeds webpage is a good public resource and updates are ongoing. A free standing display is used for public events. Media releases have been used in support of "Eradicate" classified species and EDRR priorities.



Saanich participates regionally through CRISP and regularly partners with community associations, environmental community groups (such as The Friends of Mount Douglas Parks Society), and non-governmental environmental organizations (such as Habitat Acquisition Trust), Ducks Unlimited Canada and the Garry Oak Ecosystems Recovery Team (GOERT) to deliver programs, acquire funding, and share resources and expertise.

Invasive Species Control Treatment Research Trials (2011-2012)

The District of Saanich has one of the largest Garlic Mustard infestations in British Columbia. Garlic Mustard control treatment research trials began in March of 2011 in Layritz and Doumac Parks.

The research trials were led by the Ministry of Forests, Lands and Natural Resource Operations, Invasive Plant Program, in partnership with the District of Saanich, Parks and Environment Services Divisions. This research has led to recommendations for the treatment of Garlic Mustard within the District. In 2012, Saanich continues to actively manage Garlic Mustard on all park and road right-of-ways and private property sites.

Process

In May of 2011, the District of Saanich engaged the services of a consulting team led by Dr. Val Schaefer, Restoration of Natural Systems Program at the University of Victoria to help Saanich develop the ISMS. The consulting team worked with an internal working group consisting of Cory Manton (Manager, Urban Forestry, Horticulture and Natural Areas), Adriane Pollard (Manager, Environmental Services) and Rae Roer (Senior Manager, Parks).

The ISMS involved extensive consultation consisting of: input sessions with the Saanich Community Association Network; Parks, Trails and Recreation Advisory Committee; and the Environmental Advisory Committee (now Environment and Natural Areas); two facilitated engagement workshops (Saanich staff and public); an Open House for Saanich staff and the general public; an online survey; and regular meetings with the internal working group.

An extensive review of relevant internal documents, comparable strategies from other jurisdictions, and current approaches described in scientific and popular literature was completed.

Table 1.0 Summary of the work plan and timeline.

Date	Milestones
May 1-27, 2011	Research and review relevant background information/documents
May 23, 2011	Input sessions with Saanich Environmental Advisory Committee
May 26, 2011	Input sessions with Parks, Trails and Recreation Committee
May 27, 2011	Complete initial research and review relevant background information/documents
May 31, 2011	Saanich Staff Engagement Workshop (facilitated)
June 1, 2011	Input session with Saanich Community Association Network
June 16, 2011	Saanich Public Engagement Workshop (facilitated)
July 15, 2011	Provide preliminary report, staff and public engagement review including draft Vision
July 15–Sept 2, 2011	Community survey made available through Saanich website
August 19, 2011	Provide a draft action plan of the Invasive Species Management Strategy for 2012- 2017 and vision for 2025 that has addressed the objectives outlines in the RFP
October 6, 2011	Staff and Public Open houses
December 9, 2011	Submit draft Final Report
February 2012	Presentation of draft ISMS to Council Advisory Committees
March 2012–March 2013	Revise ISMS based on Committee and Public Feedback. Develop Implementation Plan and Report to Council
April 15, 2013	Presentation to Mayor and Council for adoption of ISMS.

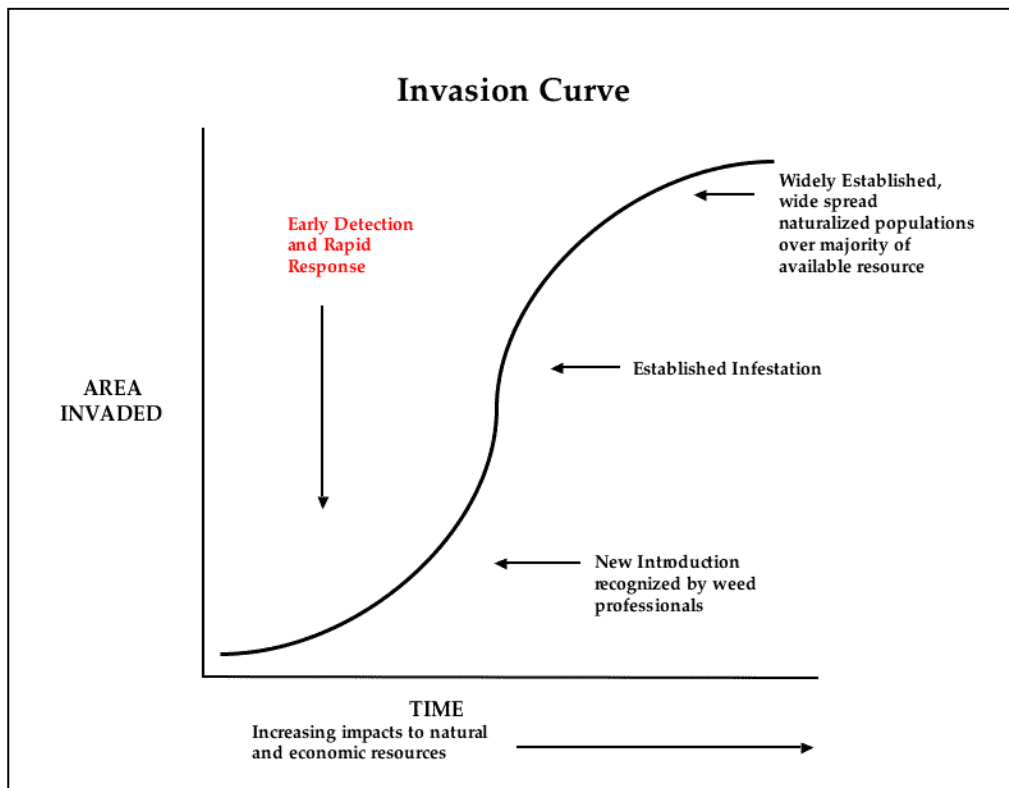
Consultation Key Findings

The development of the ISMS for Saanich integrated community consultation and research. Through this process, six key themes became apparent and influenced the overall goals contained in the ISMS. The recommendations within each theme are listed below.

1. Maintain natural ecosystems

Recommendations:

- Saanich develop a long-term strategy that takes an integrated regional approach.
- Prevent the establishment of invasive species with the Early Detection and Rapid Response approach.
- Restore sites cleared of invasive species by reestablishing native vegetation.
- Apply Best Management Practices.



Invasion curve showing importance of EDRR – new invasions are easier to eradicate when numbers are small
(Oregon Department of Agriculture)

2. Education and Culture

Recommendations:

- Saanich prevent the introduction of new invasive species by promoting a culture of using native species in gardens and discouraging the sale of invasive species by nurseries.
- Saanich use interpretive signage in parks, restoration areas and the webpage to improve education and outreach.
- Take a regional approach to encourage garden centers and nurseries to sell native plants and alternative ground covers.
- Use the media and social networking to provide invasive species information to the public.
- Work with schools and provide more of an opportunity for stewardship.

3. Need for volunteer support

Recommendations:

- The Saanich Pulling Together Volunteer Program take a lead role in the control and management of established populations of invasive species with Saanich providing capacity for volunteer coordination, outreach and technical support.
- Saanich can best support its volunteers by dealing with the disposal of plant debris, offering education workshops.
- Awards, recognition and incentives are important for reducing volunteer burn-out.

4. Identifying information gaps

Recommendations:

- Saanich work in partnership with volunteers, NGOs and educational institutions to monitor invasive species in the District and to fill information gaps.
- Saanich create an inventory of invasive species at individual sites.
- Saanich utilize modern technology for tracking and monitoring invasive species (e.g. GIS layer).
- Saanich increase the use of environmental protocols for construction and maintenance operations in sensitive ecosystems.
- Research legislative tools and climate change issues.

5. Optimize municipal resources

Recommendations:

- Established species should not be added to the Noxious Weeds Bylaw if these species use resources better applied to EDRR species.
- Saanich work in partnership with CIPC, CRISP, NGOs and educational institutions.
- Continue to explore external grant and other funding opportunities.
- Garlic Mustard and Knotweed species are new priority invasive species.
- Current established invasive species that are a priority for many Pulling Together groups are Scotch Broom and English Ivy.

6. Establishing Clear Direction

- Establish clear direction through a high-level vision and goals.
- Update the Noxious Weeds Bylaw.
- Address invasive animals and other animal conflict issues such as feral cats.
- Identify priority sites for the control and management of invasive species.
- Develop measurable “SMART” goals (specific, measurable, attainable, realistic, and timely).

Current EDRR Species in Saanich

Lesser Celandine
Knotweeds
Garlic Mustard
Giant Hogweed
Diffuse Knapweed
Yellow/Garden Loosestrife
Policeman’s Helmet
Giant Manna Grass
Scotch Thistle
Blessed Milk Thistle

Vision, Goals and Strategies

Vision

A sustainable future for Saanich includes healthy ecosystems, people and animals, as well as a vibrant economy protected from new and established invasive species populations. This will be attained through a comprehensive community approach to environmental stewardship led and supported by District staff working in partnership with others.

Goal

To prevent establishment of new invasive species and reduce, control and mitigate the effects of established invasive species on natural ecosystems, human health and the economy.

Strategies to Support the Goal

1. Implement a Comprehensive Program

This strategy includes the following components:

A. Policy and Procedure Actions

- Adopt the rationale contained in the CRISP regional invasive plant priority list and management classifications (see Appendix). It is important to note that additional priority may be given to species identified for special concerns such as toxic qualities for humans and/or animals.
 - A. **Prevent (P)** - Species not known to occur in the region, but likely to establish if introduced.
 - B. **Eradicate (E)** - Species known to occur in limited distribution and low density. Eradicate if found.
 - C. **ContaiN (CN)** - Established infestations found in portions of the region. Contain existing infestations and prevent spread to un-infested areas.
 - D. **Control (CL)** - Established infestations common and widespread throughout the CIPC region. Focus control in high value conservation areas. Use biological control, if available, on a landscape scale.
 - E. **Presence Unknown (U)** - Present/Unclassified invasive species are moved to other classifications as status is determined. Excluded are removed from the list if not an environmental threat and to CN or CL otherwise.
- Expand on and continue to develop Best Management Practices for invasive species removal and restoration.
- Incorporate Best Management Practices to reduce the introduction and spread of invasive species through capital improvement projects, purchasing protocols and development approvals.
- Continue to develop a program to map and take inventory of invasive species.
- Develop a protocol to monitor, track and record priority invasive species on a local level that is informed by regional and provincial initiatives.
- Review and amend the Noxious Weed Bylaw including consideration of the current CRISP regional plant list and management classifications.

- Determine appropriate responses for various invasive animal species and other animal conflicts.

B. Collaboration Actions

- Continue to take a regional approach to invasive species management through participation in CRISP and CIPC.
- Continue to support and recognize the importance of community partnership through the Pulling Together Volunteer Program including GORP.
- Develop an inter-departmental working group to set priorities, increase effectiveness and efficiencies, review the annual work plan on yearly basis, and report out to Council Committees and the public.

C. Communications Actions

- Inform the community and Council regarding the extent of services and associated challenges with limited resources.
- Expand educational outreach (including signage) and training programs for staff and the public including participation in developing a regional education strategy through CRISP.
- Continue to communicate with external partnerships such as UVic, Camosun College, Royal Roads University, HAT, GOERT, CRISP, CIPC, etc.
- Work with CRISP to engage residents, retailers, and landscapers about alternatives to invasive plants and seeds.

Measures of Success for Strategy 1 - Implement a Comprehensive Program

Internal:

- Assignment of internal roles and responsibilities to individual departments.
- Inter-departmental annual work plan in place.
- Percentage of area of Saanich natural areas inventoried for invasive species populations.
- Percentage of area restored once invasive species are removed.
- Current Best Management Practices are expanded and developed.
- Number of staff and volunteer hours for invasive species removal and restoration.
- Appropriate levels of response identified for invasive animal species and other animal conflicts.
- Noxious Weed Bylaw reviewed and updated including the development of response protocols.
- Annual reports to relevant Council Committees and the public.

Community:

- Number of participants in educational outreach and training activities.
- Number of participants in Saanich Pulling Together Volunteer Program.

Regional:

- Provide continued leadership and participation in CRISP and CIPC.
- Regional partnership with nurseries to remove invasive species from inventory.
- Regional program in place for disposal and processing of invasive species.
- Number of CIPC services provided to Saanich.

2. Prevent the introduction of and eradicate new invasive species

The most efficient and economical management approach to invasive species is prevention and early detection using the Early Detection/Rapid Response (EDRR) approach. By focusing efforts on new and upcoming species, rather than managing after they have spread will keep resource requirements to a minimum. Saanich will take the lead on invasive species categories and management classifications of **Prevent** and **Eradicate**, including species of special concern, with support from community and other partners based on established roles and responsibilities. The focus will be on adopting an EDRR approach and revising related Bylaws.

Actions

- Take the lead on implementing an EDRR approach and utilizing the regional invasive species plant list.
- Review and amend the Noxious Weed Bylaw including consideration of the current CRISP regional plant list and management classifications.
- Contribute EDRR data to the invasive Alien Plant Program (IAPP) mapping service when resources exist.
- Engage the public and staff to be aware of and report on new populations.
- Collaborate on regional research trials on new species as required.
- Support elevated response levels on private land for priority species and invasive species in adjacent natural areas.

Measures of Success for Strategy 2 - Prevent the introduction of and eradicate new invasive species

- Early Detection Rapid Response Program in place.
 - New invasions are responded to quickly and effectively.
 - Best Management Practices are completed for all species classified as **Prevent** or **Eradicate**.
- Number of reports of new populations of invasive species.
- Educational material provided to public on alternatives to invasive species in gardens.
- Research treatment trials in place for all current **Eradicate** classified invasive species.

3. Contain and control the spread of established invasive species.

Invasive plants, such as Himalayan Blackberry and English Ivy, have established themselves in Saanich and it is not expected that complete eradication of these species will occur. These particular species have come to form novel ecosystems and need to be managed as new communities, an approach to vegetation management called intervention ecology rather than ecological restoration. The emphasis is on containing their spread and controlling new populations from establishing within natural areas.

Actions

- Efforts on sites are based on the following priorities:

- A. Presence of Species at Risk (Red and Blue Listed Species) as contained in the Conservation Data Center (CDC) rare plant, animal and plant association sites. These would be listed within the Environmentally Sensitive Areas (ESA) Atlas. BMPs are required before any invasive species removal.
 - B. Sensitive Ecosystems – As contained in the Environmentally Sensitive Areas (ESA) Atlas or Environmental Development Permit Atlas. Removal of invasive species and restoration will be a priority within known sensitive ecosystems.
 - C. Riparian Areas (Streamside Development Permit Area Atlas) and the Marine Backshore (ESA Atlas). Priority would be given to remove the invasive species upstream to limit spread downstream.
 - D. Many volunteers are active because they care about the park they visit on a regular basis. Priority should be given to those park sites that have active volunteer groups. The volunteers also want to perform invasive species removal and restoration along pathways where they are visible to other park users as a way to change the public perception and attitudes towards invasive species and restoration.
 - E. Environmental Protocols and other Best Management Practices. This may be the case when there is existing infrastructure maintenance projects, or new capital infrastructure projects scheduled, where invasive species removal and restoration is integrated into the scope of the project.
- Provide leadership, communication and technical support through the Saanich Pulling Together Volunteer Program including GORP.
 - Develop park-specific management plans to prioritize the removal of invasive species.

Some of the established species in Saanich include:

Scotch Broom
Himalayan Blackberry
Gorse
English Ivy
Daphne laureola
English Hawthorn
English Holly



- Continue to review and develop regional invasive species biomass transportation, disposal and processing alternatives that are cost-effective, accessible, effective and ecologically sound.
- Continue to inventory high ecological value sites on private land.
- Elevate response levels for special concern species.

Measures of Success for Strategy 3 - Contain and Control the spread of established invasive species.

- Percentage of area where invasive species are inventoried.
- List of sites prioritized for action.
- Decision matrix developed to prioritize sites for budget support.
- Priorities reflected in a 5-year plan.
- Number of projects and site management plans completed by post-secondary and co-op students as part of post secondary or school course projects.
- Number of park management plans developed and implemented.
- Training sessions and hours offered to Saanich Pulling Together Volunteer Program participants
- Regional invasive species biomass disposal and processing plan in place
- Reward system in place to encourage active invasive species management on private property.
- Number of friends of groups or community associations applying for Community Matching Grants, such as the Small Sparks Grants, for invasive species removal and restoration projects.

4. Ensure Program Sustainability

Securing and diversifying resources to continue focusing on priority actions is critical to being effective and efficient in the long-term.

Actions

- Focus resource allocation on the EDRR program, special concern species, as well as providing the required resources for the Saanich Pulling Together Volunteer Program.
- Meet with stakeholders such as HAT, GOERT, UVic, Camosun College, Royal Roads University, and Council Committees etc. on a yearly basis to report out on the implementation of the ISMS.
- Collaborate to develop regional invasive species biomass transportation, disposal and processing alternatives that are cost-effective, accessible, effective and ecologically sound.
- Promote restoration for all sites cleared of invasive plant species.
- Research and seek new sources of funding and approaches to combat invasive species.
- Provide opportunities for volunteers to collaborate, expand knowledge, and celebrate successes, large and small.
- Explore landowner incentives to control and properly dispose of invasive species.

Measures of Success for Strategy 4 - Ensure Program Sustainability:

- Roles, responsibilities and levels of service communicated to Council and the public.
- Annual meetings with stakeholders.
- Number of volunteers recognized with awards.
- Number of incentives collected such as recreation passes or other incentive programs.

- Amount of additional funding secured through partners, grants and corporate sponsorship.
- Amount of in-kind support secured through partners.

Next Steps

Saanich is regarded by others in the region as a leader in the control and management of invasive plant species. Saanich has paid close attention to the threat of invasive plant species and has responded with a variety of approaches (see Section 4.0). The adoption and implementation of the ISMS will provide the long-term strategic approach to the problems of invasive species that continue to escalate.

There are many gaps in our knowledge of the location of invasions in the District; how they are dispersing, and the best approaches to the control and management of some species. The inventory and monitoring of invasive species is an activity that can be completed in partnership with community groups, educational institutions, CIPC, CRISP, the Province and volunteers. Having better information sooner will enable the District of Saanich to operate a more sustainable approach to invasive species management.

It is clear that EDRR is the most cost-effective approach to dealing with invasive species and it requires leadership from staff. It is also clear that community volunteers are essential to managing established invasive species and these volunteers require the assistance of Saanich staff for support and coordination.

Not all of the actions identified in the ISMS require additional resource funding. However, dependable resources (funding, staffing, volunteer capacity and equipment) are necessary to ensure the sustainability of the ISMS. The current level of funding assigned to dealing with invasive species needs to be re-evaluated.

The implementation of the ISMS will be referred to in the Strategic and Departmental Plans as well as the budget review process. The District will then develop more detailed information to identify resource requirements and timing to establish implementation priorities.

It will be important to explore financing mechanisms to supplement existing funding for the control and management of invasive species. These include fees, grants and financial partnerships with local and regional agencies, foundations, service clubs and businesses to fund projects.



Appendix



District of Saanich Invasive Plant List Categories


District of Saanich Invasive Plant List Categories






Updated May 30, 2012

This is a working list of priority invasive species in Saanich and their management classifications to guide decision-making. The list is based upon the Capital Region Invasive Species Partnership (CRISP) list. Note that additional priority may be given to species identified for special concerns such as toxic qualities for humans and/or animals.







Group		Description		Special Concern	Description
Prevent		Species not known to occur in the region, but likely to establish if introduced. Eradicate if found.			
Scientific Name	English Name	Special Concern	Inventory Needed		
<i>Aegilops cylindrica</i>	Jointed Goatgrass			Toxic 	Human health hazard
<i>Butomus umbellatus</i>	Flowering Rush				
<i>Centaurea nigra</i>	Black Knapweed		✓		
<i>Centaurea repens</i>	Russian Knapweed			Toxic 	Animal health hazard
<i>Eichhornia crassipes</i>	Water Hyacinth				
<i>Euphorbia esula</i>	Leafy Spurge				
<i>Fallopia x bohémica</i>	Bohemian Knotweed				
<i>Humulus lupulus</i>	Common Hops			Bylaw Listed.	This plant is specifically listed in Saanich's Noxious Weed Bylaw.
<i>Hydrilla verticillata</i>	Hydrilla				
<i>Myriophyllum aquaticum</i>	Brazilian Watermilfoil		✓		
<i>Myriophyllum heterophyllum</i>	Two-Leaf Watermilfoil		✓		
<i>Myriophyllum spicatum</i>	Eurasian Watermilfoil		✓		
<i>Peuraria montana</i>	Kudzu				
<i>Spartina spp.</i>	Cordgrass				


Group		Description		Special Concern	Inventory Needed
Eradicate		Species known to occur in limited distribution and low density. Eradicate if found.			
Scientific Name	English Name	Special Concern	Inventory Needed		
<i>Alliaria petiolata</i>	Garlic Mustard	BL			
<i>Centaurea maculosa</i>	Spotted Knapweed		✓		
<i>Fallopia japonica</i>	Japanese Knotweed	BL			
<i>Fallopia sachalinensis</i>	Giant Knotweed	BL			
<i>Geranium lucidum</i>	Shiny Geranium				
<i>Glyceria maxima</i>	Giant Manna Grass				
<i>Heracleum mantegazzianum</i>	Giant Hogweed	BL 			
<i>Impatiens glandulifera</i>	Policeman's Helmet				
<i>Lysimachia vulgaris</i>	Yellow Loosestrife				
<i>Lythrum salicaria</i>	Purple Loosestrife	BL			
<i>Onopordum acanthium</i>	Scotch Thistle				
<i>Persicaria wallichii</i>	Himalayan Knotweed	BL			
<i>Phragmites australis</i>	Common Reed				
<i>Ranunculus ficaria</i>	Lesser Celandine				

<i>Rubus laciniatus</i>	Cutleaf Blackberry		
<i>Silybum marianum</i>	Milk Thistle	BL 	
<i>Typha angustifolia</i>	Eastern Typha		✓

Group	Description		
Contain	Established infestations found in portions of the region. Contain existing infestations and prevent spread to un-infested areas.		
Scientific Name	English Name	Special Concern	Inventory Needed
<i>Ailanthus altissima</i>	Tree Of Heaven		
<i>Allium vineale</i>	Field Garlic		✓
<i>Anthriscus caucalis</i>	Burr Chervil		
<i>Arctium species</i>	Burdock Species		✓
<i>Buddleja davidii</i>	Butterfly Bush		
<i>Cirsium arvense</i>	Canada Thistle	BL	
<i>Cirsium vulgare</i>	Bull Thistle		✓
<i>Conium maculatum</i>	Poison Hemlock	BL 	
<i>Dipsacus fullonum</i>	Teasel		✓
<i>Hieracium pilosella</i>	Meadow Hawkweed		
<i>Hypericum perforatum</i>	St. John's Wort/Saint John's Wort/ Goatweed		
<i>Iris pseudacorus</i>	Yellow Flag Iris		
<i>Lamium galeobdolon</i>	Yellow Archangel		
<i>Salix alba vitellina</i>	Golden Willow		
<i>Senecio jacobaea</i>	Tansy Ragwort	 	✓
<i>Tanacetum vulgare</i>	Common Tansy		
<i>Ulex europaeus</i>	Gorse		✓
<i>Vinca major</i>	Bigleaf Periwinkle / Large Periwinkle		

Group	Description		
Control	Established infestations common and widespread throughout the CIPC region. Focus control in high value conservation areas. Use biological control, if available, on a landscape scale.		
Scientific Name	English Name	Special Concern	Inventory Needed
<i>Anthriscus sylvestris</i>	Wild Chervil		
<i>Centaurea cyanus</i>	Bachelors Buttons		✓
<i>Clematis vitalba</i>	Wild/ Evergreen Clematis		
<i>Crataegus</i> spp. [<i>C. monogyna</i> ; <i>C. laevigata</i> ; <i>C. x ambigua</i> ; <i>C. hyb.</i>] {excluding <i>C. douglasii</i> }	Hawthorns		
<i>Cyclamen hederifolium</i>	Cyclamen		
<i>Cytisus scoparius</i>	Scotch Broom		

<i>Daphne laureola</i>	Laurel-leaf Daphne		
<i>Hedera helix</i>	English Ivy		
<i>Hesperis matronalis</i>	Dame's Rocket		
<i>Hyacinthoides hispanica</i>	Spanish Bluebell	 	
<i>Ilex aquifolium</i>	English Holly		
<i>Lamium purpureum</i>	Purple Deadnettle		
<i>Leucanthemum vulgare</i>	Oxeye Daisy	BL	
<i>Matricaria maritima</i>	Scentsless Chamomile		
<i>Phalaris arundinacea</i>	Reed Canary Grass		
<i>Prunus laurocerasus</i>	Cherry Laurel	 mild	
<i>Prunus lusitanica</i>	Portugal Laurel		
<i>Rubus armeniacus</i>	Himalayan Blackberry		
<i>Tragopogon porrifolius</i>	Purple Salsify		
<i>Ulmus spp.</i> (<i>U. glabra</i> ; <i>U. europaeus</i>)	Elms		
<i>Vinca minor</i>	Periwinkle		

Group	Description		
Presence Unknown	Priority species, presence unknown		
Scientific Name	English Name	Special Concern	Inventory Needed
<i>Ammophila spp.</i>	Beach Grass		
<i>Arundo donax</i>	Giant Reed		✓
<i>Centaurea diffusa</i>	Diffuse Knapweed		✓
<i>Hieracium aurantiacum</i>	Orange Hawkweed		
<i>Impatiens parviflora</i>	Smallflower Touch-me-not		✓
<i>Linaria genistifolia subsp. dalmatica</i>	Dalmatian Toadflax		✓
<i>Linaria vulgaris</i>	Yellow/Common Toadflax		
<i>Spartium junceum L.</i>	Spanish Broom		