Facilities Management Grounds Services

Integrated Pest Management Plan for UVic Gordon Head Campus

2023

University of Victoria

Integrated Pest Management Plan for the Gordon Head Campus
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1 Introduction

1.1 Background

The University of Victoria's Gordon Head Campus is located on the territory of the Lək̓ʷəŋən Peoples and the Songhees, Esquimalt and WSÁNEĆ Peoples whose historical relationships with the land continue to this day. As outlined in the Campus Plan (2016), the UVic Gordon Head campus is comprised of diverse open spaces, ranging from natural areas to landscaped & programmed areas. There are a number of forest and wetland areas that are environmentally important, and the university has retained naturalized landscapes over the years as the campus has developed.

The Environmental and Grounds services division of UVic Facilities Management is responsible for overseeing the management and stewardship of forested and landscaped areas on campus, while balancing responsibilities of ensuring safety in the campus environment. This division maintains this Integrated Pest Management (IPM) Plan, which guides the control of pests, including the circumstances in which various techniques may be used.

Pest management is performed jointly between UVic Grounds and Environmental services division and contracted pest management suppliers.

1.2 Vision and Goals

Vision: UVic will contribute to personal health and well-being by protecting and enhancing our natural recreational and non-recreational environments.

Goal: The overall goal of this plan is to minimize the use of pesticides and chemical controls, which will be measured by annual volume, weight and spending.

2 Roles and Responsibilities

Category	Department/Services Unit	Responsibilities
Overall responsible party	**UVic Facilities Management** Primary: Supervisor, Horticulture Supervisor, Landscape Secondary: Manager Exterior Services	• Implementation of this plan, including record keeping, maintaining licenses, and other efforts. • Ensuring contracted IPM suppliers are trained and adhere to this plan. • Approving the control of pests and associated controls as necessary. • Ensuring other relevant contracts are aware of this plan. • Evaluating performance and updating this plan as necessary. • Management of plant pest control, including wasp nests should they be present at 12 ft or below tree canopy along pedestrian paths.
Pest Control Supplier	**External Contractor**	• Adhering to this plan and relevant legislation. • Identifying pests during site visits and inspections. • Reporting the results of site visits and inspections to the overall responsible party. • Obtaining approval to apply pest controls when necessary. • When approval for pest control is given, detailing steps taken along the IPM hierarchy with associated rationale for why chemical intervention was implemented. • Notifying the overall responsible party when pest thresholds are reached or surpassed. • Management of animal pest control.
UVic Departments/ Employees	Primarily **building administrators** and **facilities staff**	• Reporting pest issues in buildings through UVic's FAMIS work order system for log and relay of work ticket to Supplier.

Reporting on issues affecting buildings and grounds may be logged by a variety of different contacts on campus. The most common being through UVic's FAMIS work order system, directly by email or phone.

2.1 Contracted Pest Control Services

Pest management at the university is performed partly by Environmental and Grounds Services, and partly by external pest management contractors. The university issues a central contract for pest control services. Animal pest control is provided by the university contractor and plant pest control is provided by the Facilities Management Environmental and Grounds services unit. Grounds staff will also manage wasp nests should they be present at 12 feet or below in the tree canopy along pedestrian paths.

When pesticides are applied the contractor will detail the steps taken along integrated pest management hierarchy and include the rational for why a chemical intervention was implemented by way of written feedback to the University.

No chemical interventions that harm wildlife have been or will be used to control wildlife on campus.

3 Scope

This plan applies to all academic and administrative spaces maintained by UVic Facilities Management as per UVic Policy BP3105 – Buildings and Grounds Usage.

This includes the following areas (including all interior spaces in these areas) that are overseen by the following groups: Facilities Management Grounds and Environmental services, University Athletics and Recreation Services, and Residence Services.

- Residence Services operated buildings and grounds;
- Athletics and Recreation fields;
- University food outlets;
- Finnerty Gardens; and
- All other university grounds

UVic Grounds and Environmental services provides services to Athletics and Residence Services, who in turn specify service levels and requirements for the university spaces they manage. UVic Grounds and Environmental services determines service levels and requirements for the spaces they manage.

This plan will be consulted prior to action being employed on pest management in buildings or on building grounds. This Plan also facilitates compliance with BC's *Integrated Pest Management Act* and Regulations.

3.1 Exclusions:

This plan does not cover pesticides used for academic research purposes in a manner that complies with the intended use (per pesticide label) and research performed in a laboratory.

4 Procedures and Implementation Strategies

4.1 General Pest Control Strategies

Areas under the scope of this plan will be stewarded such that chemical and biological pesticides are used as a matter of last resort and where all other options have been confirmed to not be effective under the circumstance. When application is deemed necessary, only the least toxic material specific for the target pest is selected at the lowest recommended rate and applied by certified applicator technicians. Campus pests are controlled primarily to control the spread of invasive species and for health and safety reasons.

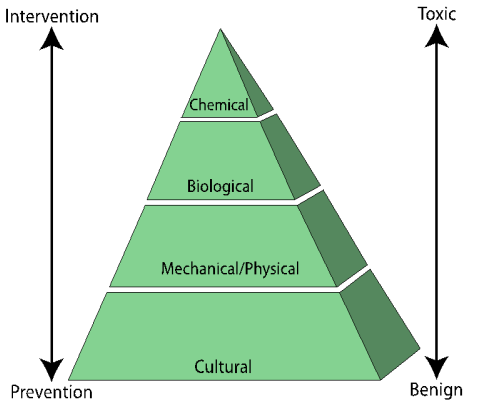

Figure 1: Integrated Pest Management Hierarchy

The hierarchy of integrated pest management starts with prevention (see Figure 1). The type of plantings and materials UVic chooses to install, and where those plants and materials are installed can help deter pests. The hierarchy moves to increasingly toxic forms of intervention.

For example, rodent issues at UVic can be prevented by creating space between residence buildings and landscape plantings. Mechanical means of prevention can be used, namely trimming, to create space between the building and the surrounding shrub plantings.

4.2 Pesticide Use Notification & Communications

Notification to the public is required before the application of pesticides in public areas. The Pest Control Supplier will notify the overall responsible party of the pesticide application, including the product name Pest Control Product Act (PCP) registration number, description of the treatment area, and the date of application. The Maintenance and Operations Manager is then responsible for distributing notifications to applicable building occupants with the help of building administrators.

4.2.1 Signage

Physical notifications (signs) are required to be posted for both indoor and outdoor applications.

Indoors: Notifications for indoor treatment applications will be posted at the entrance of the treated area. Notification will remain for at least 48 hours after the application occurs.

Outdoors: The notifications posted outdoors are required to be posted at each gate or opening that provides access to a fenced area and at intervals around or along the area as necessary so that a notice is clearly visible and will provide notice of the pesticide use to any person approaching an unfenced area.

Notifications must contain the following information:

- The product name;
- The description of the treatment area;
- The name of the targeted pest;
- The registration number under the federal Act of the pesticide to be used and its active ingredient;
- Proposed date and start time of the pesticide use and proposed alternate dates and times of the pesticide use;
- Name of licensee and licence number;
- A phone number at which the licensee or an employee can be reached for more information about the proposed pesticide use;
- Precautions that should be taken to minimize exposure to a pesticide or its residues, including, without limiting this, specifying the period following the use during which people should not enter the treatment area;
- Contain a cautionary symbol, like a stop sign or a raised hand, that will draw the attention of a person approaching the treatment area;
- Display, in bold, block letters, the words "NOTICE OF PESTICIDE USE" or, in place of the word "pesticide", the word "insecticide", herbicide" or another category of pesticide;
- If fruit-bearing trees or other food crops are treated, the number of days before food can be harvested safely;
- If notifications are posted in an outdoor area, they must be at least 550 cm^2 in size and if posted in an indoor area, be at least 200 cm^2 in size. If the notice may be exposed to water, the notification should be constructed of water-resistant material;

4.2.2 Building Occupant Communication Plan

Written notice to the University Food Services Associate Director/Executive Chef, or the VIKES Athletics Associate Director, Finance & Operation is required at least 48 hours prior to an application in their areas as identified in Appendix 2.

When non-excluded pesticides are applied, notifications may be required. Notification of the Associate Director Residence Facilities and residence is required 72 hours in advance of pesticides applications in living areas, and 48 hours in advance of applications to outdoor common areas associated with residences. In the case of bed bugs, Residence Services policy requires student to vacate their room within 24 hours' notice to allow for treatment to occur, which enables faster resolution of the pest issue.

4.2.3 Special Notifications

Indoor pesticide applications for UVic Childcare facilities require special notification; the Manager of UVic Childcare Services must be provided notification at least 72 hours prior to any application. Advance notification may be waived if all parties directly involved agree to a faster treatment schedule.

4.2.4 Exclusions

Treatment notifications are not required if:

- An insecticide applied in cracks and crevices;
- An insect gel, or insect gel bait in a bait station, that is placed in a concealed location not accessible to children or pets;
- An insecticide applied to a wasp nest that is outdoors, or is indoors and no person will have access to the treatment area within the 48-hour period after the use;
- A herbicide is used to manage weeds along fences or in cracks in the pavement on roads, in sidewalks or in parking lots;
- A granular pesticide is used in flower, vegetable or shrub beds and mixed into soil; or
- A bacterial pesticide is applied to water.

4.3 Pest Tolerance/Action Thresholds

Integrated pest management starts with establishing tolerance levels for specific pest species and monitoring those pest populations. In some cases, such as Field 5, there is a simple zero tolerance for pests like plantain (*Plantago major*). There is also a zero tolerance for rodents within residence buildings. In other cases, the actionable pest population levels are more variable.

UVic Grounds use their professional judgement to determine the pest levels via visual inspection. Grounds staff conduct visual assessments and based on these observations, will determine when a mechanical or chemical intervention is needed.

Grounds staff will document each application of pesticides as they are required by the Integrated Pest Management Regulation. Grounds and Environmental services staff will also log observed pest levels and pest management interventions on a seasonal basis. Other related internal procedures and templates will be managed by UVic's Horticulture Supervisor.

The university will maintain a list of pests that potentially require chemical interventions. The tables below express the preferred tolerance levels (zero, low, medium or high) for pest species that could potentially require a chemical intervention to reduce their population levels.

Table 1 Plant Pests - Action Thresholds

Pest type	Threshold
Celandine (*Chelidonium majus*)	Celandine is an aggressive invasive and considered a pest across campus. Tolerances are low across campus.
Clover (various species)	There is a low tolerance for clover in Field 5, and a medium tolerance on Fields 8, 7, 6, 4.
Dandelion (various species)	There is a zero tolerance for dandelion species in Field 5 and Field 1. There is a low tolerance for dandelion species in Finnerty Gardens and a medium tolerance on Fields 8, 7, 6, 4. Elsewhere on campus the tolerance is high.
Daphne laurel (*Daphne laureola*)	There is a medium tolerance for Daphne in proximity to hiking trails and other pedestrian areas and in wooded areas on campus.
Grasses (various species)	There is a zero tolerance for grasses on artificial turf fields. In most other areas on campus grasses are not considered a pest.

Plantain (*Plantago major*)	There is a zero tolerance for plantain in Field 5 and Field 1. In other areas of campus there is a medium tolerance for plantain.
Major Invasive species: • **English ivy (Hedera helix)** • **English holly (Ilex aquifolium)** • Himalayan blackberry (Rubus armeniacus) • Scotch broom (Cytisus scoparius)	There is a low tolerance in the wooded and naturalized areas at UVic. It is, however, an acknowledged goal of the university to improve biodiversity on campus by removing these species through environmental restoration in those areas. A comprehensive list of invasive species can be found in the 2017 Invasive Species Management Plan.
Weed Control Act designated species	There is a low tolerance for these species on campus.

Table 2 Animal Pests - Action Thresholds

Pest type	Threshold
Mice (*Mus musculus*)	There is zero tolerance for mice in campus buildings. There is a medium tolerance for mice in the general campus environment.
Rats (*Rattus norvegicus*)	There is zero tolerance for rats in campus buildings. There is a low tolerance for rats across campus. Since 2020, UVic has actively removed the use of rodenticides and replaced them with "rapter friendly" snap traps as a way to help protect raptors and non-target wildlife.

Table 3 Insect Pests - Action Thresholds

Pest type	Threshold
Wasps (*Vespula vulgaris* and *Vespula germanica*)	Tolerance levels for wasps are set in relation to location of their nests in proximity to public use spaces. There is a zero tolerance for wasp's nests in campus building walls, interiors.
Bees (various species)	Tolerance levels for bees are set in relation to their nest's locations. There is a zero tolerance for bee nests in campus building interiors and walls. Physical control interventions are used wherever possible to relocate swarms and/or hives.
Bed Bugs (*Cimex lectularius*)	There is a zero tolerance for bed bugs on campus.
Ants (various species)	There is a zero tolerance for ants inside campus buildings; Elsewhere on campus, ants are not considered pests.
Earwigs (*Forficula auricularia*)	There is a low tolerance for earwigs in the residence area.
Silverfish (*Lepisma saccharina*)	There is a low tolerance for silverfish across campus.

4.4 Use of Pesticides/Chemical Controls

UVic is licensed for non-service pesticide use, which is subject to periodic renewal.

If the use of pesticides (including excluded pesticides) is determined to be necessary, the certified pesticide applicators (contracted or UVic) will:

- Take precautions to prevent unprotected human exposure to pesticide;
- Maintain a 30 m no treatment zone around wells;
- Prevent release of pesticide spray or runoff into natural water bodies or onto an adjacent owner's land;
- Limit foliar spraying to periods when wind speed is less than 8 km/hour;
- Maintain a 10 m "pesticide-free zone" around bodies of water, dry streams and classified wetlands as specified, including a no treatment zone sufficient to ensure maintenance of the pesticide free zone;
- Record the treatment location, the day of use, the pesticide used (trade name), and the rational for the pesticides use in the log book using the form found in Appendix 4;
- Coordinate with University Food Services Associate Director/Executive Chef when pesticide applications occur within a food outlet specified areas (see Appendix 2) to safeguard food from contamination;
- Prior to applying chemical pesticides, alternative pest control methods will be used in 100% of cases;
- If alternative methods fail, least-toxic pesticides will be used prior to resorting to the use of non-least toxic pesticides in 100% of cases;
- In 100% of non-least toxic pesticide applications, occupants will receive notification according to the notification procedures described below;
- To be eligible for certification (valid for a maximum 5 year term), a user must be at least 16 years of age and have successfully passed the appropriate examination;
- For re-certification, a user can write the exam or can enroll in an approved continuing education program. Pesticide certification for applicators must be in the appropriate category. There is a separate study kit and exam for each category; and

Not certified applicators can use pesticides as long as:

- They are supervised by a certified applicator;
- There are not more than 4 people per certified applicator; and
- The certified applicator is within 500 m of the uncertified staff in continual visual or auditory contact.

4.5 Performance Measurement and Schedule for Reassessment

All pest control activity will be recorded as per requirements of the *Integrated Pest Management Act.* This includes the following:

- Pest type and name;
- Pest population density and monitoring frequency;
- Pest action threshold observed;
- Prevention measures implemented;
- Product applied (name);
- Pest Control Product Act (PCP) Number;
- Date and time of product application (if applicable);
- Date and time of occupant notification (if applicable); and
- Emergency application? (Y/N). If yes, an explanation of the emergency will be included.

Records of pests reported by campus users outside of Grounds services will submit through UVic's FAMIS work order system. Contracted pest control suppliers will record all pest control activity and provide reports to the University as well as maintain records of pest control applications.

Communication between the IPM team and the building occupants will be captured through this system. Education about the IPM plan will be published via the University's website.

On an annual basis, performance will be evaluated against the overall goal stated above. Inventory/usage reports that summarize monthly inspections, controls taken, and pesticide applications may be provided upon request. If the goals are not being met, adjustments will be made to this plan to meet the goals. If adjustments to the action thresholds are necessary, the FMGT Maintenance and Operations Manager will work with relevant parties and pest control suppliers to adjust the action thresholds.

4.6 Storage and Transportation of Pesticides

All pesticides will be handled, stored, or transported on university property in their original containers with the manufacturer's labels intact and in a way that prevents discharge, or unauthorized removal of the chemical. Pesticides are also stored, handled, or transported on university property in a way that prevents contamination of food or drinks intended for human or animal consumption.

For any pesticide not in its original container, the new container must be designed to hold the pesticide, and must be labeled with trade name, the PCP Pest Control Products) number, the active ingredients, and their concentration.

Pesticides are stored in a facility in the Saunders Complex that is:

- Ventilated so that pesticide vapors are vented to the outside;

- Not used for the storage of food intended for human or animal consumption;
- Locked when unattended;
- Accessible only to authorized personnel;
- Clearly signed with the following words "WARNING: CHEMICAL STORAGE — AUTHORIZED PERSONS ONLY" written in block letters; and
- Equipped with an appropriate spill kit which should contain:
- Personal protective equipment (e.g., unlined gloves, rubber boots, a respirator, protective eyewear, disposable coveralls);
- Dry absorbent material such as sawdust, vermiculite, dry coarse clay, kitty litter, commercial Absorbent, newspapers or paper towels;
- Lime, chlorine bleach or washing soda to decontaminate spill areas;
- Broom and scoop or shovel to pick up the contaminated material;
- A container with lid (i.e., 20 L pail or heavy-duty garbage bag) to put the contaminated waste in. This container can also be used to store contents of the spill kit;
- A felt pen to write the name of the spilled pesticide on the container; and
- A list of emergency phone numbers.

4.7 Pesticide Disposal

Disposal of unused pesticides will be handled according to the BC Hazardous Waste Regulations, and university standard procedure. This includes requesting hazardous waste pickup from UVic Occupational Health, Safety and Environment.

Contact 250.853.3915 for more information.

5 Reporting

The university submits an annual report of pesticide use to the Ministry of Environment by January 31st each year. This report must include:

- The name and address of the licensee and their license number,
- Trade name, registration number under the Federal Act, active ingredient and amount of product used during the previous year in kilograms, and
- Target organism – what was being treated
- Total area treated.

The university Grounds and Environmental Services Manager is responsible for the completion of this report, the template for which can be found on the Provincial Pesticide and Pest Management website at the following link location as of January 2023:

Appendix A Schedule 5 Pesticides

A licence is required for applications of the following pesticides on UVic Property. Reporting pesticide use is not required.

- *Bacillus sphaericus*, also referred to as Bs (DOMESTIC)
- *Bacillus subtilis* (DOMESTIC)
- *Bacillus thuringiensis* var. *israelensis*, also referred to as Bti (DOMESTIC)
- *Bacillus thuringiensis* var. *kurstaki*, also referred to as Btk (DOMESTIC)
- citric acid (DOMESTIC)
- copper (oxychloride and tribasic only) (DOMESTIC)
- FeHEDTA (DOMESTIC)
- ferric sodium (DOMESTIC)
- garlic (DOMESTIC)
- lactic acid (DOMESTIC)
- *Phoma macrostoma* (DOMESTIC)
- pyriproxyfen (DOMESTIC)
- *Sclerotinia minor* (DOMESTIC)
- sodium chloride (DOMESTIC)
- spinosad (DOMESTIC)

Appendix B Definitions

Buffer zone – A strip of land between a pesticide free zone (PFZ) and the pesticide treatment area where pesticides are not applied directly in order to prevent stray drift, runoff, or leachate into the PFZ. The width of the buffer zone is variable and up to the discretion of the applicator, taking into consideration the application equipment used and site factors such as terrain, soil conditions, and weather conditions.

Grounds refers to the UVic Facilities Management Grounds and Environmental Services division.

Grounds Staff refers to employees working under the Manager of Grounds and Environmental Service division in the University of Victoria Facilities Management.

Integrated pest management is a decision-making process that uses a combination of techniques to suppress pests effectively, economically and in an environmentally sound manner.

It includes the following 6 elements:

- Planning and managing ecosystems to prevent organisms from becoming pests (Prevention);
- Identifying pest problems and potential pest problems (Identification);
- Monitoring populations of pests, damage caused by pests and environmental conditions (Monitoring);
- Using previously established tolerance levels in making intervention decisions (Action Decisions);
- Suppressing pest populations to acceptable levels using strategies based on considerations of:
- Biological, physical, cultural, mechanical, behavioral and chemical controls in appropriate combinations,
- Environmental and human health protection (Treatments); and
- Evaluating the effects and efficacy of treatments (Evaluation).

Naturalized Area refers to the practice of eliminating watering and grass cutting in areas of campus during the summer months. The naturalized areas include Alumni Garry Oak meadow, areas near the Alumni Chip trail, and part of the Cedar Hill Corner property (see Protected Areas in the Campus Plan 2016).

No Treatment Zone (NTZ) – an area of land that must not be treated with pesticides.

Pest refers to an injurious, noxious or troublesome living organism, but does not include a virus, bacteria, fungus or internal parasite that exists on or in humans or animals.

Pesticide Free Zone– A strip of land between a PFZ and the pesticide treatment area where pesticides are not applied directly in order to prevent stray drift, runoff, or leachate into the PFZ. The width of the buffer zone is variable and up to the discretion of the applicator, taking into consideration the application equipment used and site factors such as terrain, soil conditions, and weather conditions.

Tolerance: Pest tolerance levels are defined categorically at four levels and are established through visual inspection:

- High – many pests of a category can be observed in a specified area.
- Medium – some pests of a category can be observed in a specified area.
- Low – very few pests of a category can be observed in a specified area.
- Zero tolerance – no pests of a category can be observed in a specified area.

Appendix C IPM Managed Grounds (Outdoors)