

## Overview

- The Integrated Pest Management (IPM) Policy identifies the key pest management issues in the Council's open spaces and provides a decision making framework and a range of options for addressing them.
- An integrated approach to pest control is one that uses a sustainable combination of cultural, physical, mechanical and, where necessary, chemical methods to achieve the best outcomes.
- The aims of the policy are to select the right control methods in all operations, reducing the use of chemicals to only circumstances where there is no reasonable alternative and protecting staff, park users, biodiversity and the wider environment from their impacts.
- Minimising pesticide use will protect staff, park users, biodiversity and the wider environment from the impacts of chemicals.
- Integrated control fits with several of the Council's Strategic Principles for parks management, especially:
  4. Richmond will lead in the delivery of excellent parks and open spaces services.
  8. The Parks and Open Spaces of Richmond will be centres of excellence and celebrated.
- The policy will be reviewed by December 2022 to check assimilation with contractor practices.

## 1. Policy development

- 1.1 Richmond's Parks team and contractors and have been striving to improve pest control methods and reduce use of chemicals for several years, believing this to be best practice for maintaining safe and healthy public spaces. Guidance for the Green Flag Award, which sets the benchmark standard for the management of outdoor spaces in the UK and around the world, and which Richmond has adopted as its own standard, requires a move towards zero use of chemicals, with minimal use permitted only where justified within an integrated strategy.
- 1.2 This is set against a background of increasing concern about the health and environmental impacts of chemical products, greater scrutiny of their authorisation and licensing and a wide array of innovative non-chemical methods. Equally, it is recognised that chemicals applied professionally to specific target species or in difficult circumstances remain an important solution in certain circumstances.
- 1.3 Climate change and the warming climate are expected to lead to an increase in new pests and diseases becoming established. It is therefore vital that the Council has effective policies and practices in this area to maintain public spaces and protect health and biodiversity.
- 1.4 In light of the above, Richmond believes it is the right time to adopt an IPM policy. A draft policy for integrated weed control was drafted in 2019, has been tested in the interim and led to the development of this IPM policy with existing contractors and advice from external sources.

## 2. Definition and scope

- 2.1 This policy defines a pest as a plant, plant disease, animal, fungus or micro-organism occurring in a location where it is undesirable.
- 2.2 Whether an organism being assessed meets this definition is context-dependent. The same species could be desirable or undesirable, depending on the location. Many pests are harmless beyond potentially being perceived as a nuisance. Others have characteristics that aid their ability to compete, persist and spread to the point where they can cause environmental or economic harm, or a risk to health and safety. A very small minority – such as those on the London Invasive Species Initiative list of species of concern – will almost always be classified as a pest.

2.3 The Integrated Pest Management Policy guides pest control on land managed by Richmond Council's Parks team including parks, playgrounds, sports pitches, nature conservation sites, open cemeteries and closed churchyards, highway verges and sites managed for internal clients.

### **3. Common pest problems in Richmond and tolerances**

3.1 The borough's open spaces face a range of pest issues which are monitored in a variety of ways. Some interventions are short-term, some are on an ongoing basis.

3.2 In most circumstances, undesirable species are tolerated to a certain level before any action is considered. Tolerances differ according to the context. Increasing tolerances is a key aspect of IPM. Under limited conditions it will be necessary to have low tolerance either because of the high-quality maintenance levels required in that location or because the risk from a species' presence or of it spreading is too high: some species are harmful to health or will lead to greater future investment in maintenance or remediation being required if left unchecked.

#### Plants

3.3 Weed control of undesirable plants is the most common problem including those:

- growing in fine or sports turf, borders and shrub beds
- germinating and providing competition in freshly cultivated areas such as wildflower meadows or new turf
- growing from paths, sports courts and other hard surfaces
- dominating native species and reducing wild plant diversity on conservation sites
- occurrences of invasive species such as Japanese knotweed, giant hogweed and Himalayan balsam.

3.4 Weed control can be required for a variety of reasons. In some high-profile areas – such as carpet bedding displays – they may be harmful to the aesthetic value; some plants cause damage to paths, walls and other structures; some out-compete other plants for resources and replace the desired vegetation; some are harmful to human and animal health; some will require greater levels of maintenance being required in the future if not dealt with.

3.5 However, the service continually looks to review tolerances and residents' perceptions are changing, with greater awareness and acceptance of initiatives. In recent years, the Council has reduced herbicide use significantly by accepting more weed cover in formal beds and on sports pitches and hard surfaces.

#### Animals

3.6 Vertebrates and invertebrate pests cause intermittent or seasonal problems. Examples include:

- oak processionary moth (OPM) caterpillars defoliate oak trees and shed hairs that are a hazard to human and animal health from late spring into summer
- non-native North American mink predate wildlife along the borough's rivers
- invertebrate larvae and earthworms damaging fine turf surfaces for golf and bowls.

#### Fungi, diseases and micro-organisms

3.7 Although often noted for causing aesthetic problems, some have impacts on their host. Examples include:

- Microdochium and other pathogens cause scarring and grass death on fine turf surfaces
- ash dieback is a fungus that affects the European ash tree.

### **4. What is Integrated Pest Management (IPM)?**

4.1 Management interventions are required once tolerances are exceeded and the most appropriate method must be selected for the particular problem.

4.2 Integrated Pest Management is an environmentally sound approach which combines a range of methods of control – cultural, physical, mechanical, thermal, biological and chemical – and

enables selection of the best solution for each problem, in terms of effectiveness, environmental impact and economic cost. Integrated control does not mean no use of pesticides – but it does mean that, when an intervention is justified, sustainable physical and other non-chemical methods should be the first tools deployed if they are effective options.

## 5. Objectives of the policy

- To achieve sustainable, efficient and safe pest control by evaluating and selecting the correct methods of control for each situation.
- To reduce the use of chemicals to only circumstances where it is absolutely necessary.
- To stay abreast of developments and innovations.
- To protect the health of users and staff.
- To protect environmental and open space quality.
- To ensure pest control principles are applied when planning, designing, constructing or renovating park areas and features.

## 6. Current options for pest control in Richmond

### Cultural

6.1 Cultural control means involves designing land management features and practices appropriately to prevent or reduce pest establishment.

6.2 Cultural options include:

- Choosing plant species / varieties that are naturally more competitive or disease resistant
- Using increased seeding rates and narrower spacing
- Using barriers to prevent establishment
- Manage the soil environment to provide ideal growing conditions so that the desired plants establish well.

6.3 Examples include:

- For grass surfaces in formal and semi-formal parks, include dwarf perennial ryegrass amongst finer grasses so that the grass is quick to establish and no spaces are left for other species to invade
- Mulching, using organic material to cover, suppress and kill unwanted plants, with additional potential benefits of retaining moisture and improving the soil
- Removing diseased or infested plant debris to prevent re-infection the following year
- On fine turf areas, aerate the root zone and minimise thatch to promote healthy growth and mitigate moderate damage from insects.

### Physical

6.4 Physical control means non-mechanical manual activities to directly remove or suppress the undesirable species. Undertaken by hand or with hand tools, it is labour intensive and not always suitable for large-scale control

6.5 Examples include:

- Tilling the soil, turning it over to bury the weed beneath the surface, damaging the plant and desiccating the roots; labour-intensive and soil disturbance can lead to erosion, changes in soil structure and further invasion of undesirable plants
- Hand pulling dense natural regeneration of ash, sycamore, Norway maple or other undesirable tree species from woodlands
- Scrubbing woolly aphid infestations from infested fruit trees and shrubs
- Hand removal of OPM nests from a tree, before destroying with a blowtorch.

### Mechanical

6.6 Mechanical control means solutions involving vehicles or machinery to directly affect the pest species, enabling quicker coverage of larger areas.

6.7 Mechanical options include:

- Cutting or brushing weeds to ground level to restrict growth, reduce vigour or prevent seeding
- High pressure water sprays to remove insects from foliage
- Using animal traps.

6.8 Examples include:

- In a conservation area, repeatedly cutting most of an area of nettles in order to weaken the plant and diversify the sward
- Using a mechanical brush to remove plants from hard surfaces
- Tillage of the soil with a rotivator, damaging the plant and desiccating the roots as per the physical method; able to treat larger areas but suffering the same disadvantages
- Floating rafts with live capture traps for North American mink on rivers.

### Chemical

6.10 Pesticides include herbicides for killing weeds or preventing them from emerging, insecticides for controlling insects, fungicides used to prevent the growth of molds and mildew, disinfectants to prevent the spread of bacteria and rodenticides to control rats. Some are selective for particular groups of species, others act more broadly. They may be liquids, which are sprayed or wiped on, or granules or powders; they may be ready-to-use or require mixing and preparation.

6.11 Due to their efficiency and low cost, for a long time pesticides were the default option for land managers. All chemical products undergo rigorous testing and licensing before being authorised for sale for specific uses, and training is needed to apply them in a professional context. Precautions and restrictions specific to each product are required to protect those applying them, site users and the wider environment. However, growing concerns over the impacts of these chemicals on human health, wildlife and the environment mean that the Council is seeking to minimise their use in parks wherever possible.

6.13 Receiving the most attention for a reduction are glyphosate-based herbicides, the most commonly used pesticides in the public realm, often sold under the Roundup brand name. Glyphosate kills plants by preventing them from making proteins that are necessary for their growth and reproduction. Whilst modern formulations of glyphosate are 'clean-label' – meaning they do not warrant any human health warning – there are mixed views on its safety both for people and the environment. Much of the research into any chemical comes from the manufacturer; however, increasing independent evidence is concluding that there is cause for concern about glyphosate. In 2015, the World Health's Organisation's International Agency for Research on Cancer declared glyphosate was a probable carcinogen, although that has not yet been accepted by environmental and food safety authorities in Europe or the US. Gaining more traction, however, is evidence about long-term impacts of glyphosate on invertebrates (especially bees) and on soil and water ecosystems. Due to this accumulating evidence, glyphosate has been placed under greater scrutiny by regulators. At present it is approved for use to December 2025 in the UK; the EU will be reviewing its own approval which expires in December 2022, although several European countries have banned or restricted its use already.

6.14 It is therefore the Council's policy that chemicals must only be used where there is no reasonable alternative. Options include:

- Spot spraying on sports pitches a using cone applicator to reduce drift
- Injection of glyphosate into mature stems of Japanese Knotweed to assist in eradication
- Weed wiping of herbicide onto leaves of invasive garden escape snowberry in conservation sites to prevent its spread

- Painting cut stumps of felled undesirable tree species in woodland reserves to prevent regrowth
- Spraying of oak processionary moth caterpillars in trees to eradicate nests.

## 7. Monitoring the market

- 7.1 The Parks and Open Spaces service and its contractors stay abreast of developments in pest control and regularly test new and emerging methods.
- 7.2 For weeds, thermal control uses heat to destroy plant cells and disrupt metabolic processes. Hot water, hot foam and flame-guns have been taken up by other authorities reducing glyphosate use but are not very economic and are now being mainly used on hard surfaces where they are best suited but which is not a key driver for the Parks team. More promising is electricity; it can be used against all plants including invasive species, although it is slow, requires training and cannot be undertaken in the rain, and the Council is monitoring trials by other authorities. All thermal methods however require dedicated vehicles and generators or gas, creating more emissions.
- 7.3 Biological control uses insects or fungal pathogens as a method to manage undesirable species. The biological agent may not kill the target species but will weaken it and reduce the effort needed to remove it through other means. Of particular interest to the Council is a rust fungus which can significantly affect Himalayan balsam, an invasive plant found in large quantities along land bordering the borough's waterways; officers are monitoring the ongoing trials by the Centre for Agriculture and Bioscience International.
- 7.4 The Council's Arboriculture Manager sits on the national OPM Strategic Advisory Group which offers advice to the government on OPM management and keeps up to date on development in control techniques.

## 8. Assessing necessary pest control

- 8.1 Parks staff will undertake an assessment when considering a pest control issue, to ensure selection of the most appropriate control method:
- (1) Initially staff can select from several generic IPM Plans that consider typical issues, categorised either by environment – such as sports pitches, shrub beds and borders, or conservation sites – or by species / species group, such as invasive weed species or oak processionary moth. These plans will give a guide whether a problem should be tolerated and or controlled and what options are available.
  - (2) Where a scenario has individual factors to consider that are outwith those in the generic plan, a brief IPM Assessment template will be completed to help select and record the control decision. This will assist with monitoring of policy use and decision effectiveness.
- 8.2 Both the IPM Plans and Assessments will be based on the control spectrum set out below. The most likely effective option falling lowest on the spectrum and which is achievable within budget and labour available should be implemented. Decisions made entirely within the generic IPM Plan need no further approval. Contractors will need to have Decision Sheets approved by the relevant client officer.



- 8.3 Both the IPM Plans and Assessments will follow a series of simple steps to guide decision makers through the process:
- A. Assess the pest problem(s), including identification of species if possible and record which landscape or subject IPM Plan has been consulted.

B. Consider the value and constraints of the location:

- Expected level of maintenance: can the problem be tolerated?
- Proximity and conflict with users
- Environmental features: watercourses, drainage, habitat value

C. Consider the action level by looking at:

- The size and density of the area to be treated
- Acceptable damage tolerance levels for the species and location
- Current infestation level
- Stage of plant cycle and timing of effective treatment
- Definition of success in the specific scenario

D. Decide the pest control method:

- Review all treatment options that will achieve the desired outcome.
- Select the most appropriate likely successful option that would fall lowest on the control spectrum below that is achievable within budget and labour available.
- Chemicals should be judged as a means of last resort. Non-chemical methods with a likely chance of success must be given chance to work before chemical options are considered.
- Chemicals used must be the least harmful yet effective products and used in the smallest amounts possible.
- Record the decision as appropriate.

E. Evaluate and record the IWM prescription's effectiveness following treatment.

**9. Conclusions and actions**

9.1 Careful assessment, consistent application, long-term planning and monitoring of effectiveness and impacts are the cornerstones of this policy. This implementation is the responsibility of all staff, contractors and organisations involved in the management of the borough's parks and open spaces.

9.2 The main changes expected from current operations to those following the new Integrated Pest Management Policy are:

- an improved prevention of pest problems through site / project design;
- a greater emphasis on assessment prior deciding on pest control
- establishing views on acceptable tolerance levels, increasing them where possible
- an increased awareness and use of cultural controls
- a greater prioritisation of non-chemical methods, a further reduction in the use of chemicals and continuous improvement into the future
- the elimination of chemicals at the point there is a full suite of effective alternatives.

9.3 Implementation Plan

A1	Appoint a 'responsible person' to oversee the policy: Parks Operations Manager	September 2021
A2	Discuss implementation with all staff and contractors involved in park operations	September 2021
A3	Discuss and propose where tolerance can be increased in relation to existing performance standards.	October 2021

A4	Undertake joint evaluation with contractors of all significant pest control challenges	October 2021
A5	Complete set of IPM Plans and the Assessment template; make available to control decision makers and instruct as to use	December 2021
A6	Update relevant operational documentation, e.g. management plans, work schedules, and organise training if required	January 2022
A7	Include section on IPM in each relevant contract's monthly report and meeting agenda	January 2022
A8	Ensure contractors are keeping appropriate records for use of chemicals	January 2022
A9	Collate experiences and learning outcomes from first season; monitor decisions and outcomes from all year 1 IPM Assessments.	September 2022
A10	Propose and make necessary amendments to policy / documents / templates.	November 2022
A11	Review policy ahead of next contract procurement	February 2024