



**PORTLAND PARKS & RECREATION**

Healthy Parks, Healthy Portland



# **Integrated Pest Management Program**

**Includes updates to 6/29/2016**

**TABLE OF CONTENTS**

**General Information**  
Mission Statement.....3  
Asset.....3  
Integrated Pest Management.....3  
Pesticide Use.....5  
Safety.....5  
Laws and Regulations.....5  
Agricultural Worker Protection Standard .....6

**Integrated Pest Management Methodology**  
Approved Pest Management Strategies.....7  
Criteria for Choosing a Pest Management Method.....9

**Pest Management Policies**  
Policy outlines.....11

***Licensing and Training***  
1.Certification and Continuing Education.....13

***Pest Management Procedures***  
2. Management Methods for Pest Problems.....14  
3. Pesticides Approved for Use in Parks.....15  
4. Notification of Pesticide Use at a Site.....17  
5. Pesticide Application on Park Properties and Street Rights-of-Way.....18  
6. Pesticide Application Record Keeping.....20

***Pesticide Material Management***  
7.Use of Remaining Pesticide Solutions and Rinses.....21  
8. Storage and Transportation of Pesticides.....23  
9. Disposal of Empty Pesticide Containers and Unusable Pesticides .....24

***Safety Measures and Emergency Response***  
10. Use of Protective Clothing and Equipment.....26  
11. Emergency Information Concerning Accidental.....27  
12.Pesticide Spill Response.....29  
13. Worker Protection Standard.....37

***Special Situations***  
14. Pesticide Applications by Non-PP&R Employees.....39  
15. Rodent and Other Vertebrate Pest Management.....41  
16. Turf Weed Management.....42  
17. Pesticide Use Around Water Bureau Property.....45  
18. Pesticide Applications Around Community Gardens.....46  
19. Waterways Pest Management.....47  
20. Vegetation Management in Wood Chipped Child Playground Areas.....57  
21. Venomous Insect Management.....59  
22. Dog Off Leash Area Pest Management.....62  
23. NPDES General Permit Compliance for Pesticide Use In Or Near Waterways.....64  
24. Mole and Gopher Management.....68  
25. Neonicotinoid Insecticide Use on PP&R Property.....69  
References and Disclaimer.....71

**Appendices**  
Appendix 1- Approved Pesticide Lists, Use Up and Do Not Restock List.....74  
Appendix 2- Forestry Record-keeping Form.....89  
Appendix 3- Park Operations Record-keeping Form.....90  
Appendix 4- Form Letter for Written Notification of Use (Schools, etc.).....91  
Appendix 5- Form for Non-PP&R Pesticide Application Approval.....92  
Appendix 6- Form for Turf Broadleaf Herbicide Application Approval.....93  
Appendix 7- Insecticide Use and Pollinator Protection.....94  
Appendix 8- NPDES Form .....96  
Appendix 9- EMERGENCY AND INFORMATIONAL PHONE LIST.....98

## **General Information**

The purpose of this document is to provide Portland Parks and Recreation employees with an overview of integrated pest management principles and specific policy-based direction for implementing those principles.

### **Mission Statement**

The mission of the Parks and Recreation Pest Management Program is to manage pests that are harmful to the health, function or aesthetic value of park landscapes in an efficient, effective, and environmentally responsible manner, while paying careful attention to public and employee safety. To accomplish this, the principles of Integrated Pest Management are utilized. This progressive and sustainable approach uses multi-faceted strategies that minimize economic, health, and environmental risks.

### **Asset**

Portland Parks & Recreation is part of the City of Portland and is the steward of over 11,500 acres of land at more than 250 locations including regional, community and neighborhood parks, natural areas, recreational facilities, special gardens, and trails. These parks contain over 2.2 million square feet of developed shrub beds, 6 botanic gardens including 3 specialty rose gardens containing 20,000 roses, 1,360 acres of turf with 365 athletic fields, five 18-hole golf courses, and over 7,000 acres of natural areas. It also offers a wide array of recreation and enrichment opportunities for people of all ages.

Portland Parks and Recreation is charged with maintaining these diverse park landscapes in a safe, attractive, healthy, and useful condition. Park properties represent a major component of the city's capital assets and PP&R recognizes its responsibility to protect and preserve this economic investment to the best of its abilities. PP&R also recognizes its responsibilities to its employees, park users, and the general public, and seeks to employ the highest professional standards in the performance of its duties. To best manage pests in park lands, PP&R personnel utilize the principles of Integrated Pest Management (IPM).

### **Integrated Pest Management**

On March 2, 1988, Portland City Council passed a resolution that directed Portland Parks and Recreation to "adopt and begin implementation of a grounds maintenance policy embodying the principles of Integrated Pest Management."

Integrated Pest Management is one of the major strategies used by PP&R in the maintenance of park lands. Although there are numerous definitions of IPM, the following is from the U.S. Environmental Protection Agency for its publication, *IPM for Turfgrass and Ornamentals*:

"IPM is the coordinated use of pest and environmental information with available pest control methods to prevent unacceptable levels of pest damage by the most economical means with the least possible hazard to people, property, and the environment. The goal of IPM is to manage pests and the environment so as to balance costs, benefits, public health, and environmental quality. IPM systems use all available technical information on the pest and its interactions with the environment. Because IPM programs apply a holistic approach to pest management decision-making, they take advantage of all appropriate pest management options, including, but not limited to pesticides. Thus IPM is: A system using multiple methods; A decision-making process; A risk reduction system; Information intensive; Cost-effective; Site specific."

And this definition is from the Oregon Statutes (ORS 262.1), Chapter 943:

"Integrated pest management' means a coordinated decision-making and action process that uses the most appropriate pest control methods and strategies in an environmentally and economically sound manner to meet pest management objectives. The elements of integrated pest management include: (a) preventing pest problems; (b) monitoring for the presence of pests and pest damage; (c) establishing the density of pest population, which may be set at zero, that can be tolerated or corrected with a damage level sufficient to warrant treatment of the problem based on health, public safety, economic or aesthetic threshold; (d) treating pest problems to reduce population below those levels established by damage thresholds using strategies that may include biological, cultural, mechanical and pesticidal control methods and that shall consider human health, ecological impact, feasibility and cost effectiveness; and (e) evaluating the effects and efficacy of pest treatments."

The IPM process first determines if a pest needs to be managed, and if so, how best to do it. Key elements are information gathering, well-informed decision making and monitoring of results. The IPM process promotes effective, low-risk management strategies to manage pests.

The controls used in this program include cultural, physical, mechanical, manual, biological and pesticidal methods and materials. Often a combination of methods is used. Methods selected to manage specific pest populations are evaluated by licensed and trained PP&R professionals on a case-by-case basis. The methods employed conform to recognized standards established and endorsed by state and federal regulatory agencies, state educational institutions and organizations such as the Western Integrated Pest Management Center.

A few examples of IPM activities within the PP&R program:

- Utilizing plants with natural resistance to pests.
- Proper mowing and irrigation of park turf to increase vigor and reduce weed populations.
- Mulching of planting beds to reduce establishment of weeds.
- Application of selected herbicides to control invasive weeds and prevent their spread.
- Release of natural biological control insects to control invasive weed infestations.

Key elements of an IPM program are information gathering and informed decision-making. PP&R horticulturists, botanic specialists, park technicians, and tree inspectors are skilled in identifying and evaluating pest problems. When pest problems occur that are novel or beyond the scope of in-house experts, advice is obtained from other qualified sources such as state universities, state departments of agriculture, and university extension service experts. Oregon Public Pesticide Applicators License continuing education classes reinforce employee skills and provide current information concerning laws, safety, pests, and IPM methods.

PP&R employees monitor levels of pests in order to arrive at the best solution for managing a pest problem. When pest management methods are implemented by trained IPM personnel, it results in solutions that are economically and environmentally responsible. This provides the public with safe, healthy, and aesthetically pleasing park areas for many uses.

## **Pesticide Use**

Pesticide is a general term for any substance intended for preventing, destroying, repelling, or mitigating any pest. Park pests consist primarily of unwanted vegetation and invasive weeds, but can also include insects, diseases, rodents, and other organisms. To manage these pests, PP&R personnel select the best methods available. In most cases pesticides are not a necessary tool, but when they are needed as part of an IPM approach, PP&R minimizes risk by careful product selection and application. Pesticides vary greatly in their toxicological characteristics therefore choice of materials is a key element of good IPM decision making. When developing and updating PP&R's IPM program, the best expert scientific opinion is relied upon on to inform staff about potential materials and methods. Assessments from state and federal regulatory agencies, state university departments in Oregon and Washington, university extension scientists, and other experts in the field provide much useful specific information. PP&R turns to these recognized experts for credible science-based information. PP&R also stays current with the latest pertinent studies as part of our process. By basing decisions on these authoritative sources the best solutions can be obtained within an IPM framework. Portland Parks and Recreation has found that as part of a complete IPM approach, judicious use of carefully selected pesticides can be an important tool in ensuring quality landscapes and healthy and diverse natural areas. The demonstrated benefits of these balanced management practices have made PP&R a model of responsible park management throughout the region.

PP&R pesticide applicators are required to comply with all pesticide label directions, federal, state, and local pesticide regulations, applicable safety laws, and PP&R policies. Misuse of pesticides will not be tolerated. DOCUMENTED NONCOMPLIANCE WITH STATE AND FEDERAL LAWS OR RULES SET OUT IN THESE POLICIES IS CAUSE FOR EMPLOYEE DISCIPLINARY ACTION.

## **Safety**

Portland Parks and Recreation's excellent safety record with respect to the use of pesticides has been made possible thorough appropriate training, careful processes for pesticide product approval, and employee adherence to label directives and safety procedures during use.

When pesticides are being applied in park areas by PP&R personnel, notification signs are posted at points of entry to the treated areas. These signs include information about the pesticides being applied as well as contacts for additional information.

When pest management equipment is being used and materials are being applied by PP&R employees, all appropriate personal protective equipment is provided for each worker. Use of such equipment is an important part of safely applying pesticides.

Portland Parks and Recreation works with the Portland Water Bureau to protect the city water supply from all types of contamination and recognize the special circumstances raised by the presence of reservoirs within parks. Procedures regarding the specific details of park maintenance of areas bordering reservoir property are found in the Pesticide Use Around Water Bureau Property Policy.

## **Laws and Regulations**

Several federal and state agencies regulate the use of pesticides. Portland Parks and Recreation conforms to all applicable pesticide laws and regulations. In many instances, PP&R exceeds these legal standards. For example, PP&R allows only Oregon State licensed Pesticide Applicators to apply pesticides of any kind on park land. To obtain a Public Pesticide Applicator's license,

applicators must pass a series of tests administered by the Oregon Department of Agriculture covering pesticide laws, safety, use, IPM, and other subjects. Applicators are legally liable if they apply pesticides contrary to state and federal laws and label directions.

Oregon State Department of Agriculture certified continuing education is provided by PP&R to satisfy state requirements for renewal of employees' applicator licenses. Once licensed, applicators must accumulate forty credit hours of state approved recertification training over a five-year period to maintain their license. PP&R provides sufficient recertification training hours to its employees every year. Class sessions are tailored to provide instruction in diverse aspects of pest management and safety that are relevant to park and natural area IPM.

Applicators are required by law to record specific information when applying pesticides. PP&R has designated forms for this purpose, which are included in this document. Examples of the information recorded are: date of application, time of application, conditions, locations, and formulations and amount applied. Examples of these forms are found in appendices 2 and 3.

### **Agricultural Worker Protection Standard**

The Worker Protection Standard (WPS) are federal regulations designed to protect agricultural workers (people involved in the production of agricultural crops) and agricultural pesticide handlers (agricultural workers mixing, loading, or applying pesticides or tasks involving direct contact with pesticides). These rules apply only to agricultural settings, not park use. However, elements of Portland Parks and Recreation nursery and greenhouse operations may be considered to fall under the scope of these rules. Applications of pesticides in these two areas are governed by the PP&R policy, state and federal law, and the additional rules of the WPS.

These rules require worker training regarding pesticide exposure, protection, and mitigation. They also require specific notification and worker re-entry intervals for pesticide applications in plant production areas. All employees in the nursery and greenhouse operation receive training to satisfy the Worker Protection Standards. All operations carried out in the nursery and greenhouse comply with WPS requirements.

# **Integrated Pest Management Methodology**

## **Approved Pest Management Strategies**

The following summary provides examples of possible management strategies among the many methods available.

Prevention of pest problems through good policy, design, and plant selection are assessed first. Next to be assessed are cultural practices, physical means, mechanical practices, trapping, biological controls, and use of natural and synthetic pesticides. All of these IPM measures are then evaluated and considered together so that the best overall pest problem solutions are chosen and implemented.

### **PEST PREVENTION**

#### **Through policy**

Management of pests through adoption of policy can be highly effective and low in cost. Such policies can often eliminate problems before they begin. Some examples are:

- Prioritization of parks for control measures may be considered. Different park areas may have varying standards of acceptable care and appearance. Determining whether a particular park area requires control of pests and the level of that control must take these differences into account. Careful attention to public desires and needs must be part of this prioritization process.
- Establishment of thresholds for action and the tolerance level for different pests in a general or specific form are parts of the IPM process. These thresholds vary according to plant, pest, and site. Determinations of action thresholds are made on a case-by-case basis.

#### **Through design and plant selection**

Proper park design and plant selection are significant ways to avoid pest problems. While no landscape can be designed to be free of pest management needs, such considerations need to be part of the planning process. Examples are:

- Use of disease or pest resistant or tolerant plant species or varieties.
- Removal of pest-susceptible plants, or replacement with pest resistant plants or varieties.
- Elimination or modification of problematical areas.
- Matching specific plant needs with site conditions to ensure plant health.
- Maintenance of species diversity and elimination of monocultures in plantings where applicable.
- Establishment of overstory plantings, occluding groundcover plantings, and other design techniques benefiting both the establishment of plants and the reduction of weed problems.

## **PEST MANAGEMENT**

### **Through cultural practices**

Proper cultural practices are essential in establishing healthy landscapes and can often help to maintain their resistance to pest problems. Examples are:

- Providing proper specific growing conditions for optimum plant health and pest resistance.
- Adequate site, soil, and grade preparation before landscape installation.
- Use of disease resistant grafting rootstock or scion wood.
- Proper timing and use of water to eliminate over or under watering.
- Proper timing and use of fertilization to eliminate over and under-fertilization.
- Aeration, over-seeding, and top-dressing to improve turf health and suppress weeds.
- Raking and debris removal to remove pest sources.
- Pruning and plant removal to promote optimum conditions for plant health.
- Removal of diseased, infested, damaged, or dead wood.
- Mulching for weed reduction, water retention, winter protection and root zone improvement.

### **Through mechanical and physical controls**

Mechanical and physical methods are often employed to manage pests. Examples are:

- Mechanical clearing of weeds in rough areas.
- Hand weeding in shrub beds.
- Mowing of rough turf areas for vegetation control.
- Traps such as yellow sticky boards for greenhouse insects and traps for mammalian pests.
- String trimming to control unwanted vegetation.

### **Through biological controls**

Where applicable, biological control of pests is often a desirable method. Minimizing disruption of natural pest controls that may be present is typically most important. Examples are:

- Introducing insect or disease parasitoids, predators, and microbial products to control pests.
- Minimizing the use of disruptive techniques and materials in landscapes that may destroy natural pest control organisms.



### **Through naturally derived and synthetically derived pesticides**

Pesticides are derived from many sources, vary widely in their characteristics and must be examined individually to determine their suitability within the IPM approach. Examples are:

- Placement of pheromone traps.
- Disinfecting materials or equipment to prevent spread of pests.
- Application of naturally and synthetically derived pesticides.

### **Criteria for Choosing a Pest Management Method**

When choosing a pest management method or pesticide material from the approved lists located in Appendix 1, all personnel should consider the following, and any additional factors relevant to the selection.

#### **Nature of the site**

- Erosion susceptibility and potential movement of soil through runoff.
- The intended use and function of the landscape.
- The feasibility of the method given the area and scope of the problem.
- The relative importance and public expectation of a site or plantings.
- Site conditions such as soil type, grade, drainage patterns, and presence of surface water.

#### **Possible health and safety effects**

- Consider both short and long term toxicological properties and any other related potential health effects of the materials or methods, both to the applicator and the public.
- Equipment operation safety issues for both the operator and the public.
- Worker safety and worker injury issues involved with carrying out the method.

#### **Possible environmental effects**

- Consider both acute and chronic toxicity and any other related potential effects of the material or method to non-target organisms including mammals, birds, amphibians, fish, invertebrates, pollinators (see Appendix 7) and other organisms.
- Environmental effects from potential bioaccumulation from materials used.
- Potential impacts to non-target plants, forage, and nesting habitat, from materials or methods.
- Potential impacts to federally listed threatened or endangered species.
- Possible introduction or establishment of invasive plants.
- Nesting birds: For natural area invasive plant removal, the presence of nesting birds in area to be treated. See BES TEES document:  
<http://www.portlandonline.com/bes/fish/index.cfm?a=322164&c=31006>
- Pollinator protection: See Appendix 7, Insecticide use and Pollinator Protection.

## **Costs**

Both short and long term costs as they relate to:

- Costs of the material or method.
- Application and labor costs.
- Length and quality of pest control.
- Feasibility of using a particular method or product.

## **Characteristics of the product**

- Target pests and target sites of the product being used.
- Possible residual effect, decomposition pathways, rates, and breakdown products.
- Volatility and flammability.
- Product formulation and package size.
- Leachability, solubility, and surface and soil bonding characteristics of the product.
- Ease of cleaning equipment after use.
- Positive and negative synergistic effects of pesticide combinations.
- Presence of “inert” constituents of the product formulation and their potential effects.

## **Other special considerations**

- Application equipment availability.
- Method of delivery.
- Current and anticipated weather conditions.
- Previous pesticide applications to the site and the interval between treatments.
- Possible development of pest resistance to a particular management method or material.

## **Outline of Policies**

### **Licensing and Training**

1. LICENSING, CERTIFICATION AND CONTINUING EDUCATION OF PEST MANAGEMENT PERSONNEL- Defines the required State of Oregon licensing requirements and recertification obligations and training for PP&R applicator personnel.

### **Pest Management Procedures**

2. MANAGEMENT METHODS FOR PEST PROBLEMS- Establishes the IPM methodology and approved strategies.

3. PESTICIDES APPROVED FOR USE IN PARKS- Describes the approval process for pesticides. Approved product lists for each unit are located in the appendices.

4. NOTIFICATION OF PESTICIDE USE AT THE SITE- Outlines the on-site notification procedures to be used before, during and after applications.

5. PESTICIDE APPLICATION ON PARK PROPERTY AND STREET RIGHTS OF WAY- Establishes procedures on how to apply pesticides on all park lands.

6. PESTICIDE APPLICATION RECORD KEEPING- Outlines record-keeping standards for parks applications. Recording form samples are located in appendices.

### **Pesticide Material Management**

7. USE OF REMAINING PESTICIDE SOLUTIONS AND RINSES- Outlines how residual pesticides and rinsates are handled.

8. STORAGE OF PESTICIDES- Defines methods and procedures for storage of pesticides.

9. DISPOSAL OF EMPTY PESTICIDE CONTAINERS AND UNUSABLE PESTICIDES- Establishes the fate of surplus or contaminated pesticides and empty containers.

### **Safety Measures and Emergency Response**

10. USE OF PROTECTIVE CLOTHING AND EQUIPMENT- Describes appropriate personal protective clothing and equipment for use by PP&R personnel when handling or applying pesticides.

11. EMERGENCY INFORMATION CONCERNING ACCIDENTAL PESTICIDE EXPOSURE- Defines the procedures followed in responding to inquiries from PP&R employees and the public regarding pesticide exposure.

12. PESTICIDE SPILL RESPONSE- A policy dealing with any unintended release of pesticides on or off PP&R properties. Outlines responsibilities, training, reporting, methods, and materials involved.

13. WORKER PROTECTION STANDARD- Outlines the background of the WPS and how it relates to the nursery and greenhouse operations of Parks and Recreation. Establishes training duties and defines those required to receive training.

## **Special Situations**

14. PESTICIDE APPLICATION BY NON-PP&R EMPLOYEES- Establishes the framework for review of all pesticide applications to PP&R property proposed by outside contractors.

15. RAT AND MOUSE MANAGEMENT- Describes approved methods of rodent management by Parks and other personnel.

16. TURF BROADLEAF WEED MANAGEMENT- Describes procedures, rationale, and approval process for management of broadleaf weeds in maintained park turf areas.

17. PESTICIDE USE AROUND WATER BUREAU PROPERTY- Explains the joint policy between Parks and Recreation and the Water Bureau to ensure a safe water delivery system.

18. PESTICIDE USE AROUND COMMUNITY GARDENS- Outlines procedures and limitations of pesticide applications adjacent to PP&R Community Garden sites.

19. WATERWAYS PEST MANAGEMENT- This policy defines specific practices, methods and materials approved for use alongside, and within aquatic sites. This policy, as well as all of the preceding policies, have been specifically referred to in the National Marine Fisheries Service Federal Endangered Species Listing 4(d) rule.

20. VEGETATION MANAGEMENT IN WOOD CHIPPED CHILD PLAYGROUND AREAS - Defines special pest management practices in chip surfaced playground areas.

21. VENOMOUS INSECT MANAGEMENT - Describes how venomous insects such as wasps, bees and hornets on parkland are addressed.

22. DOG OFF LEASH AREA PEST MANAGEMENT - Specifies how pest management in designated dog off leash areas is carried out.

23. NPDES GENERAL PERMIT COMPLIANCE FOR PESTICIDE USE IN OR NEAR WATERWAYS - Allows for compliance with Oregon's general NPDES permit for use of pesticides in, or near water.

24. MOLE AND GOPHER MANAGEMENT - Details how PP&R personnel manage these pests.

25. NEONICOTINOID INSECTICIDE USE ON PP&P PROPERTY – Details implementation of the COP Neonicotinoid Prohibition ordinance and use of these insecticides on PP&R property.

Policy 1:

## **Licensing, Certification, and Continuing Education of Pest Management Personnel**

### **PURPOSE**

This policy defines the education, training, licensing, and certification requirements for applicators who are applying pesticides, or supervising others applying pesticides.

### **BACKGROUND**

State pesticide applicator licensing assures a level of expertise and familiarity with pest management practices and pesticide materials. PP&R is committed to maintaining a high level of expertise in our workforce. The continuing education requirements of state licensing also help to keep personnel up-to-date on pest management theory and practice. Therefore PP&R requires that all personnel applying pesticides on park land maintain an Oregon state applicators license.

### **POLICY**

All Parks and Recreation personnel applying pesticides on park lands shall be certified as state public pesticide applicators by passing the appropriate State Department of Agriculture examinations. In order to maintain a valid license the applicator currently must acquire a minimum of 40 hours of state accredited supplementary education over a five-year period, with no more than 15 hours accumulated in any given year. To maximize the value and relevance of the recertification training, PP&R will recruit qualified speakers and present its own state-certified classes twice yearly. Recertification class hours from other accredited sources may also be used to supplement PP&R classes.

Ultimate responsibility for maintaining a valid license lies with the applicator. PP&R will keep pesticide applicators informed of approved education to meet continuing certification and licensing requirements. Information regarding state licensing requirements and status may be found at the Oregon Department of Agriculture's website: <http://www.oregon.gov/ODA/PEST/>

Unless special arrangements and approvals have been made, all PP&R applicators must be permanent status employees. Regardless of licensing status, no seasonally employed staff members shall apply pesticides on park land without special arrangement. This arrangement shall consist of the consent of the Pest Management Coordinator, and specific approval of a City Nature or Zone manager or program coordinator following a request from the supervisor of the seasonal employee.

## Policy 2:

### **Management Methods for Pest Problems**

#### **PURPOSE**

This policy establishes the principles governing PP&R's approach to pest management for all of its lands.

#### **BACKGROUND**

Portland Parks and Recreation utilizes the principles of Integrated Pest Management in managing land under its care. IPM is a coordinated decision making process that uses the most appropriate management strategy on a site specific basis. The IPM process first determines if a pest needs to be managed, and if so, how best to do it. Key elements of an IPM program are information gathering, well-informed decision making and monitoring of results. Through proper decision making, the IPM process promotes effective, low-risk management strategies to manage pests.

The management techniques used in this program include cultural, physical, mechanical, manual, biological and pesticidal. Often a combination of methods is used. The following terms are used as defined.

*Threshold* is used to describe a level of pest presence above which unacceptable amounts of negative plant health impacts, negative environmental impacts, negative effects on infrastructure and assets, intolerable aesthetic impacts, or undue safety risks are likely to occur. *Action level* is the point at which control measures are necessary to prevent a pest population or its impact from exceeding the threshold.

#### **POLICY**

PP&R shall employ integrated pest management principles in managing pest problems. Managers, Supervisors, Superintendents, Botanic Specialists, Horticulturists, Park Technicians, Tree Inspectors and other licensed applicators shall monitor plant health status, landscape conditions, and the presence of unwanted vegetation. They will assess appropriate thresholds, and determine action levels on a site-by-site basis. All licensed applicators shall use the list of "Approved Management Strategies" to determine an effective, feasible, and economically sound pest management method that does not create undue risk to the public or the environment.

If a pesticide is chosen as the best method for pest management, licensed applicators shall choose appropriate materials only from the list of Approved Pesticides specific to their work unit found in Appendix 1. The suitability of the material, nature of the site, potential health and safety effects, potential environmental effects, overall costs, characteristics of the product and any other special considerations related to the situation shall be taken into account in this process. After control measures have been made, the site should be monitored to assess any impact and the efficacy of the measures taken.

## Policy 3:

# **Pesticides Approved for Use by Portland Parks and Recreation Personnel**

## **PURPOSE**

This policy establishes oversight procedures over all pesticide materials available for use on park land by PP&R personnel. It defines the process of selection of pesticides that are approved for use on PP&R property.

## **BACKGROUND**

Pesticides vary widely in their characteristics and their legally labeled uses. Not every registered pesticide will be appropriate for use within PP&R's IPM program. Also, certain pesticides may be suitable for a particular purpose or site, but be unsuited for another. Each prospective pesticide must be carefully evaluated for their suitability for a specific program use before they are included on an approved list.

IPM program needs for various pesticides change over time as new pest challenges arise. Also, pesticide material availability changes as products, active ingredients, and label uses are added or removed. The knowledge base about pesticides may change over time and this may influence their suitability for IPM program use. For these reasons, approved lists need to be flexible to allow for additions and deletions.

Parks and Recreation experience and IPM principles have demonstrated that it is more desirable to have a larger, more specialized selection of products that target specific pests, rather than a smaller number of general-purpose pesticides. This increase in selection not only allows for targeted use, it can also aid in limiting the effects of the control to the target pest only. It also may aid in reducing the number of resistant pests that can arise from continued use of a small number of controls. It can also lead to an overall reduction of pesticide usage required.

## **POLICY**

The PP&R IPM program coordinator shall maintain work unit/site based lists of pesticides approved for use by PP&R personnel on park property. The lists shall be reviewed by the coordinator no less than annually to assure adequacy, and assure IPM goals are being met. It can be reviewed more frequently, as when new knowledge is obtained, or when new pests are encountered. Requests by staff to add products to the approved lists is made by submission of a request form to the coordinator. This request will include information regarding the product and its characteristics, expected uses, comparative costs, and how the product will improve the IPM program. The Coordinator will then research the product's characteristics, including toxicological, environmental, and physical properties. All aspects of potential use of the product and possible impacts to park users, park infrastructure and the environment will be examined. If the request is found to have merit to improve the IPM program, the Coordinator will then bring the request and associated relevant regulatory and background information to the pesticide approval committee for review. Proposed additions and deletions from the lists shall be approved by a committee consisting of at least three of the following PP&R staff persons: Westside Lands

Stewardship Manager, Eastside Lands Stewardship Manager, an Operations Supervisor, a Golf Course Superintendent, the Irrigation and Turf Supervisor, a Natural Area Supervisor, the Forestry Operations Manager, the Horticultural Services Supervisor, and the IPM Program Coordinator. The pesticide review committee shall be coordinated by the IPM Program Coordinator.

Once approved, the product will be placed on the approved list and affected staff informed. Deletions of products will be made known to staff as soon as practicable. A pesticide deleted from the general approved list but placed on the "Use Up Do Not Restock List" is approved for use within specified units until current supplies are exhausted or unless otherwise noted. All federal and state laws addressing use of pesticides will be upheld. Deletion of a pesticide due to loss of federal or state registration will be upheld without committee approval as per the schedule set by law.

Once approved, the list "Criteria for Choosing a Pest Management Method" shall be used by applicators when determining the proper pesticide for a given purpose, with further consultation with the IPM Coordinator when necessary. Pesticides shall be chosen after assessing toxicological impacts, environmental impacts, efficacy, feasibility, cost, and all other pertinent aspects of their use within an IPM approach. Only pesticides from the approved lists shall be chosen. Special consideration is to be taken when applications covered under the "Waterways Policy" take place. Pesticides allowed for those purposes are specifically defined within that policy. Special consideration of any potential insecticide use must be made to assure it is compatible with and take into account the principles found in the "Insecticide Use and Pollinator Protection" document in the appendices.

**Use of pesticides for unauthorized, unapproved or illegal applications by PP&R staff will be cause for disciplinary action. Parks and Recreation IPM policy expects strict adherence to all pesticide label requirements concerning safe, legal and effective use of pesticides.**



## Policy 4:

### **Notification of Pesticide Use at a Site**

#### **PURPOSE**

This policy establishes procedures for notification of applications for all pesticide materials being applied by PP&R personnel.

#### **BACKGROUND**

PP&R understands that park users may want to be informed of treatments. Label requirements for pesticide applications may also mandate that entry to treated areas be avoided for a specific interval. Park users may also wish to find out further information about pest management activities occurring at a park site. To satisfy these needs, all pesticide applications will be accompanied by on-site notification signage.

#### **POLICY**

It is the policy of the City of Portland to inform park visitors of pesticide application sites through the use of notification signs. These signs are posted before an application begins. They are placed in clearly visible locations such as conspicuous entrances or trail heads, and/or application site perimeters, with a maximum interval of 200 feet between each sign in open areas. The intent of the signs is to ensure that park users will encounter them before they have had an opportunity to enter a treated area during an application. This notification signage will include basic information about the application and appropriate contact numbers for those desiring more details about the pest problem and the approach being used.

Re-entry specifications will be listed if required by the label. Signs shall be removed after the re-entry specification has been met. For most products, this interval is limited to until the liquid application has dried or until any dust has settled from a dry or granular application.

As a convenience for Community Centers and schools in session, these entities should be notified in writing before an application is made to nearby adjacent properties. School or Community Center personnel can then schedule the activities of their users accordingly. The notification letter or its equivalent shall be delivered to the school or Community Center no less than 24 hours before any applications of pesticides are planned to take place. A form letter for this purpose is provided on appendix 4. In addition to this letter, a follow-up call may be helpful to supply the specific or range of dates and locations of any applications, and to answer any questions raised.

In the special case of application of pesticides to right of way or neighborhood parking strip tree canopies, signs will be placed on these street rights-of-way 24-48 hours prior to the application to allow car owners to relocate their parked vehicles if they desire.

Applications by PP&R staff to Portland Public School owned property must adhere to the PPS notification requirements. PP&R will work in cooperation with PPS to ensure notification that satisfies established PPS policy. Any work unit that intends to apply pesticides to PPS property will coordinate with the PPS Manager of Environmental Health and Safety before any application takes place: Patrick Wolfe, 503-916-3449.

## Policy 5:

### **Pesticide Application on Park Property and Street Rights-of-Way**

#### **PURPOSE**

This policy establishes procedures for applications for all pesticide materials being applied by PP&R personnel.

#### **BACKGROUND**

It is the policy of Portland Parks and Recreation for their employees to apply pesticides in a legal manner and to adhere strictly to all precautionary requirements for their use. This policy outlines procedures for pesticide application in parks and street rights-of-way that are maintained by PP&R employees. All registered pesticides are accompanied by a legal label specific to each product that defines all legal uses. Pesticides must be used according to these label directions.

#### **POLICY**

The pesticide must be used only on sites and targets specified in the label. Higher dosages, higher concentrations, or more frequent applications than the label allows for are not permitted. Directions for use, safety, mixing, diluting, storage, and disposal, as well as any restrictions on re-entry must be met.

The following criteria shall be met when applying pesticides. Some of these are addressed more specifically in other policies.

- The label is the law.
- Personal Protective Equipment shall be used wherever indicated by the product label and it must be maintained in a workable and safe condition.
- Spray equipment shall be maintained in a safe and useful condition. Where applicable, spray equipment shall be calibrated regularly.
- Anti-siphoning devices shall be used when filling large spray tanks.
- "Criteria for Choosing a Pest Management Method", as outlined on pages 9-10, shall be considered in making choices.
- Pesticides used shall be chosen from the approved lists as provided for the appropriate work units.
- Pesticides shall be applied only when appropriate weather conditions exist.
- Notification signs shall be posted in areas where pesticides are being applied.
- All applications shall be recorded on approved application record forms.

The law does allow an applicator to:

- Apply a pesticide at any dosage, concentration, or frequency less than that listed on the labeling,
- Apply a pesticide on any target pest not listed on the labeling if the application is to a crop, animal, or site that is listed on the label,
- Use any equipment or method of application not prohibited by the labeling,
- Mix a pesticide or pesticides with a fertilizer if the mixture is not prohibited by the labeling,
- Mix two or more pesticides, if all the dosages are at or below the recommended rates and such combinations are not contraindicated on the label.

#### Utilizing Pesticides on park property or Street Rights-of-Way

1. A park employee identifies or is informed of a pest problem.
2. Determine if actions need to take place. Thresholds and action levels are determined by a licensed applicator or supervisor for the specific pest problem in question.
3. Management strategies are determined by a licensed applicator. Special situations may require expertise from outside PP&R such as university diagnostic laboratories.

If pesticides are to be used:

4. Choose the pesticide using the "Criteria for Choosing a Pest Management Method, and "Approved List of Pesticides" for the appropriate work unit.
5. Check application equipment for safety and mechanical problems, calibrate if necessary.
6. Check weather conditions. Applications should be done when calm wind conditions exist to minimize drift. Adjustments should be made for spray droplet size and pressure if when conditions warrant. No application should take place where there is unacceptable drift.
7. Post notification signs before use to inform the public of the application. For specific rules, see the Notification Policy.
8. List re-entry specifications on the signs if required by the label.
9. Apply material according to the label and in accordance with state and federal regulations.
10. Record applications of pesticides on the approved forms. See appendices.
11. Remove signs after the label designated re-entry requirements have been met. This is usually when the liquid pesticide has dried, unless indicated otherwise on the label.
12. Evaluate the results of management measures.

## Policy 6:

### **Pesticide Application Record Keeping**

#### **PURPOSE**

This policy establishes recording and reporting procedures for all pesticide applications taking place on park land by PP&R personnel, or any other agency, bureau, company or individual whether they are acting as a contractor or acting in a voluntary manner.

#### **BACKGROUND**

PP&R finds that detailed record keeping is an essential part of IPM implementation, and is vital in communicating, reporting, and analysis of pest management activities. State law requires that written records be kept for pesticide applications. The law requires that licensed applicators record the details of pesticide applications and keep these records for three years. These records must be stored in a central location and be available for review.

#### **POLICY**

It is the policy of Portland Parks and Recreation to record and retain records of all pesticide applications performed on park land. Appropriate forms for this use will be provided by PP&R. Each application event will require an application form to be completed. Copies of completed application records should be sent to the Pest Management Program Coordinator on a monthly basis. A master file of these records shall be kept at a central location and maintained by the Coordinator. Each operating unit shall keep a record file related to pesticide applications by their own personnel. These records shall be retained for no less than three years.

Information regarding application of pesticides to park lands by non-PP&R personnel shall also be recorded including all information fields required by the ODA. Copies of these records must be provided to the Coordinator.

The following information must be included on the recording forms for each pesticide application by a PP&R employee: Date of application, name of applicator, state license number, work unit, application start and end time, temperature, wind conditions, equipment used, park or site, specific area treated, target pest, total area treated if applicable, names and EPA numbers of all products applied, total amount of dilute pesticide applied, coverage rate where applicable, mix ratio or percentage of dilute mixture, and aquatic buffer designation where applicable.

Applications on different dates or at different locations must have their own application record. They cannot be combined on one record.

(See the appendices for examples of record keeping forms.)

## Policy 7:

# **USE OF REMAINING PESTICIDE SOLUTIONS AND RINSES**

## **PURPOSE**

This policy establishes procedures for the use and disposal of any pesticide remains generated by PP&R applicators. It outlines methods for use of remaining pesticide solutions and rinses in a legal and safe manner.

## **BACKGROUND**

Applicable laws require that all pesticide solutions and rinses be applied to target areas according to label directions. These solutions and rinses may also be disposed of at an authorized pesticide disposal site. It is the goal of PP&R to conduct our pesticide operations so that disposal of remaining material is not necessary.

## **POLICY**

Pesticide solutions and rinses should be applied according to the label directions, and to legal target sites so there are no pesticides remaining. This shall be accomplished by accurately gauging the amount of pesticide needed for the job. PP&R promotes the use of advance planning to minimize the number of times it is necessary to switch pesticides in spray equipment. In order to reduce the amount of excess rinsate, it is the policy of PP&R to rinse equipment only at the end of the spray cycle, or when changing to pesticides that are incompatible with those in the tank. It is a legal requirement to fully and legally label all tanks and sprayers containing leftover pesticides at the end of each day.

## **PROCEDURES**

Following are some considerations to make before beginning an application to assure the proper amount of pesticide is mixed.

Advance considerations

- Weather conditions and predictions.
- Acreage/square footage of the job site.
- Calendar: special events, mowing, irrigation, etc.
- Type and size of the equipment appropriate to do the job.

When applying the pesticide use the following procedures to reduce and safely store the rinse solution. These are secondary to label information and State and Federal regulation.

- Mix only enough pesticide solution to do the job that day.
- Use up all pesticide, applying until the tank is empty, or no more solution is coming through the nozzle.

- If pesticide mix remains, affix to the tank or sprayer all legal labels for the products used. Also mark the current concentration for each product, the date, and the name of the applicator.
- When resuming spray applications at a future date, either use the leftover material, or add dilution water and circulate the mix thoroughly before adding new concentrate.
- If spray tank rinsate is created, store the rinsate as make-up water for the next day. The next day's pesticide should be compatible or the same. The same labeling requirements described above pertain to the rinsate mix as well.

Rinsing and/or cleaning of the sprayer may be necessary if the following conditions apply:

- It is necessary to use a pesticide incompatible with that previously used.
- Before the long term storage of the equipment.

Use the following rinse process:

1. Read the pesticide label. The following should not conflict with label information or State or Federal regulations. Contact your supervisor if you see a conflict or have questions.
2. Wear protective clothing, as listed on the label when handling pesticides, pesticide containers, or pesticide equipment.
3. Fill the spray equipment approximately 1/4 full with clean water. Shake or agitate so that all inside surfaces are washed. If possible use the spray hose to rinse the inside surface of the tank. These procedures should coincide with all labels.
4. Spray the rinse water out of the spray equipment onto an approved target area. Rinse water should be run through all hoses, booms, etc. Filters should be cleaned. Because of the dilute nature of the pesticide in the rinse water, a coarse spray can be used and is recommended to save time. Do not "pond" or saturate the soil.
5. If the tank is to be stored, repeat step 3 and 4 above until the tank is clean.

## Policy 8:

### **STORAGE OF PESTICIDES**

#### **PURPOSE**

This policy defines the method and procedure for storage of pesticide materials for all PP&R locations and personnel.

#### **BACKGROUND**

Attention to the proper storage is vital to assure public and employee safety, as well as to protect the investment in their purchase. Several agencies are involved in regulating aspects of pesticide storage. No single agency has comprehensive authority. Agencies involved include State of Oregon Department of Agriculture, Oregon Department of Environmental Quality, U. S. Environmental Protection Agency, Oregon State Fire Marshall, and the Portland Fire Bureau. Pesticides will be stored and transported in a manner that reduces the risk of spills, exposure, theft, degradation, contamination, or loss.

#### **POLICY**

Pesticides or pesticide containers shall be kept in secure and safe locations in accordance with existing laws. They shall be kept in a secure location and, if possible, in a temperature controlled, well-ventilated area. Areas used for storage shall be labeled and designated for use by work unit supervisors.

Pesticides shall be safeguarded from environmental damage such as extreme temperature, photo-decomposition or moisture. All pesticides in storage shall be inspected regularly and, if necessary, rotated on the shelf to assure that the oldest dated items are used first.

Central warehousing of pesticides shall take place at the Mt. Tabor Yard facility. In the fall of each year, satellite pesticide storage areas for individual zones and work units shall return unused quantities of pesticides to the central warehouse for winter storage unless there is an anticipated need for near term use.

Pesticides being transported shall be appropriately and safely secured in the vehicle. Only licensed applicators shall transport pesticides. Appropriate spill response supplies must be immediately available.

Pesticides shall not be transported in passenger cabs of vehicles where alternatives exist, such as truck beds, truck boxes or vehicle trunks.

## Policy 9:

# **DISPOSAL OF EMPTY PESTICIDE CONTAINERS AND UNUSABLE PESTICIDES**

## **PURPOSE**

This policy defines the method and procedures for the disposal of pesticide containers and unusable pesticides or those pesticides whose registrations have been totally or partially suspended.

## **BACKGROUND**

Portland Parks and Recreation considers proper disposal of unusable pesticides and pesticide containers of the utmost importance to the safety of employees, the public, and the environment. Several governmental agencies regulate pesticide disposal. No one agency has comprehensive authority. Agencies involved include the Oregon State Department of Agriculture, Department of Environmental Quality, Environmental Protection Agency, and Occupational Safety and Health Administration. PP&R will comply with all relevant laws governing the proper disposal of these materials.

## **POLICY**

PP&R shall dispose of pesticides and empty pesticide containers in accordance with all State and Federal regulations and label recommendations. Disposal of pesticide containers and unusable pesticides not in accordance with this policy will be cause for disciplinary action.

## **PROCEDURES**

Read the pesticide label. The following steps should not conflict with label information or state and federal regulations. Contact your supervisor if you determine a conflict or have other questions. Always wear protective clothing when handling pesticides or pesticide containers, as directed on the label.

### **For non-rigid containers including bags, sacks, and boxes**

1. Pesticide material must be emptied into application equipment to the extent made possible by physical agitation of the container.
2. Visually verify that residues have been removed.
3. Multiple-rinse non-rigid containers such as paper lined with plastic or foil.
4. Place in a plastic bag and mark as to contents.

### **For rigid containers such as plastic, glass, or metal**

1. Pesticide material must be emptied into application equipment to the extent possible by pouring, then visually verifying that the residues have been removed.



2. The container must be rinsed with clean water until clean; the rinse water being poured into the spray equipment. Empty the pesticide and all rinsates into the sprayer before the full amount of diluting water is added to the spray equipment.
3. Place in a plastic bag and mark as to contents.

### **Storage of Containers**

1. Containers must be stored in plastic bags in a secure area until they can be taken to a secure collection site. Mt. Tabor Yard is a designated secure collection site.
2. Containers must be transported to, and placed in the designated secure container box at Mt. Tabor Yard storage area. Each container product name and size must be recorded by a licensed applicator on the designated form at that time.
3. For each container, record the date, name of the pesticide, quantity and size of the container, park area used, and the applicator signature. These records shall be maintained at the site, and copies forwarded to the Pest Management Program Coordinator on a twice yearly basis.

### **Disposal of Unusable Pesticides**

Unusable pesticides are ones that: 1) are damaged through vaporization, freezing, infiltration of moisture to containers or photo decomposition; 2) have exceeded their shelf life; or 3) have visually changed their composition or structure in some manner.

1. The Pest Management Program Coordinator should be informed of plans to dispose of pesticides and of results of the disposition.
2. The Coordinator will contact the ODA, the manufacturer or dealer and/or a licensed consultant and find out if the product is still usable.
3. If the pesticide has less activity due to long storage, moisture, or freeze damage, follow the recommendations of the dealer, manufacturer, or licensed consultant and use procedures in this policy as they apply. One option could be to apply the material realizing that full control is not achievable using the damaged pesticide.
4. If this option cannot be followed legally, follow recommendations of the dealer or manufacturer or licensed consultant. It is not legal to transfer damaged or altered pesticides to another party for use. It may be necessary to arrange for disposal of the pesticide in a manner recommended by DEQ.
5. The Pest Management Coordinator is responsible for arranging disposing of pesticides. A record of these disposals should be kept on file for three years.

### **Disposal of Pesticides with Completely or Partially Canceled Registrations** (or those which have been removed from approved use by PP&R.)

1. The coordinator shall keep up-to-date on the pesticide regulatory news and respond to pending actions appropriately to minimize or eliminate stocks of unusable pesticides.
2. If unusable pesticides remain in stock, PP&R will follow recommendations of the regulatory agencies, manufacturer or dealer in finding a legal user for the pesticide. If the pesticide is unopened and/or still retains its integrity it may be possible to transfer the pesticide to a legally registered bureau, agency, or group to use.
3. It may be necessary to dispose of the pesticide in a manner recommended by Oregon DEQ.

Policy 10:

## **USE OF PROTECTIVE CLOTHING AND EQUIPMENT**

### **PURPOSE**

This policy outlines the requirements for the use of protective clothing and equipment by PP&R personnel when undertaking pest management activities.

### **BACKGROUND**

Use of pest management tools, equipment, and materials may require the use of personal protective equipment (PPE). Use of such equipment is necessary to provide an adequate measure of safety for the applicator. This protective equipment may be clearly defined as in legal pesticide label directions or directives in equipment manuals. When such directives exist they must be adhered to. Use of appropriate protective equipment may not be so clearly defined for all pest management methods, and in such cases it is the responsibility of the applicator and the supervisor to determine and employ adequate safety equipment.

### **POLICY**

Personnel engaged in the use of pest management tools, equipment, or materials shall follow all clothing and equipment requirements required to ensure their safety. When using pesticides, the label directives for use of PPE must be adhered to. Use of related power and mechanical equipment must be accompanied by appropriate PPE as determined by equipment manuals or supervisor's directives.

Required personal protective equipment appropriate to satisfy specific pesticide label requirements shall be provided by PP&R to employees for their use. These label mandated PPE may include, but are not limited to: respiratory protection, eye protection, coveralls, rain gear, mixing aprons, chemically resistant boots, and gloves. Time will be made available during the work shift to wash up before lunch and at the end of the work shift. The applicator is responsible for cleaning, storing, and maintaining PPE and equipment in a safe and useful manner. Applicators may also provide their own additional PPE if desired, but only if such equipment and its use has been previously approved by their supervisor.

If applicators apply organophosphate and carbamate insecticides in amounts and frequencies determined by health professionals to require cholinesterase blood tests, PP&R will provide for these tests. This testing monitors the potential depletion of the enzyme cholinesterase in the blood, an indicator of exposure to these materials. PP&R use of these classes of pesticides have been eliminated from general use with only as small set of products left for specific uses if needed. Thresholds requiring testing have not been exceeded in many years.

## Policy 11:

# **EMERGENCY INFORMATION CONCERNING ACCIDENTAL PESTICIDE EXPOSURE**

## **PURPOSE**

This policy establishes procedures for the proper response to employee and citizen inquiries regarding accidental exposure to any pesticide material used by PP&R staff. It defines PP&R's response to inquiries concerning adverse health effects as a possible result of accidental exposure to pesticides.

## **BACKGROUND**

PP&R's handling of public inquiries should be prompt, professional, and well supported. While PP&R can answer general questions, PP&R does not have medical professionals on staff to address specific medical questions relevant to accidental exposure. This expertise is readily available in the health care community. Therefore, concerns of this nature will be referred to qualified medical personnel for resolution.

## **POLICY**

PP&R will inform applicators of proper procedures to be taken in case of pesticide exposure. Anyone inquiring about pesticide exposure will be referred to his or her own personal physician, the Oregon Poison Center (OPC), or the Pesticide and Analytical Response Center (PARC). A list of these authorities and their phone numbers are listed in the appendices.

Material Safety Data Sheet information about all hazardous substances in the workplace is available to all personnel for their own use. This information includes symptoms of exposure, and procedures for handling overexposure to individual pesticides. If symptoms of illness occur during or shortly after applying pesticides, the OPC should be contacted or the individual should receive medical attention immediately.

Non-emergency questions received by PP&R shall be referred to the Pest Management Program Coordinator. The Coordinator will provide information to the questioner or refer them to qualified individuals or sources for further information.

## **PROCEDURES**

- Use planning to avoid emergencies and to expedite aid should an accident occur.
- Be informed of the symptoms of exposure and the decontamination steps necessary in case of accidental exposure.
- Use all safety procedures and protective gear as recommended on the label.
- Have a copy of the appropriate label available when applying or transporting pesticides (concentrated and dilute.)

**In case of a medical emergency related to suspected pesticide exposure**

- Handle any emergency situation as per First Aid instructions, or label and MSDS.
- Call for emergency backup if necessary.
- Refer to Oregon Poison Center. **1-800-222-1222**
- Take a label for reference for medical personnel if it is necessary to leave the site.
- Inform your supervisor as soon as possible.
- Inform the Pest Management Program Coordinator as soon as possible.

**In response to a non-emergency inquiry**

- Respond to questions to the best of your ability.
- Refer detailed or technical questions to the Pest Management Program Coordinator.
- Inform your supervisor.

## Policy 12:

### **PESTICIDE SPILL RESPONSE**

#### **PURPOSE**

This policy outlines the objectives, training requirements and procedures Portland Parks and Recreation personnel should follow in response to an emergency release of pesticides. This applies to all PP&R staff involved in applications of pesticides, handling of pesticides, or acting in a communications response role during a spill incident.

#### **BACKGROUND**

Several state and federal regulations apply to an emergency release of hazardous materials. The Department of Transportation (DOT) and the Public Utilities Commission (PUC) regulate the transport of hazardous waste resulting from a spill and the release of chemicals if it occurs when they are being transported. The Environmental Protection Agency (EPA) and the Oregon Department of Environmental Quality (DEQ) protect the environment through regulation concerning prevention of and response to the contamination of water, land, and air resulting from an emergency release of a hazardous material. They are also concerned with proper disposal of waste generated from a spill. The Coast Guard has jurisdiction over the Willamette and Columbia Rivers, and if a spill should enter either of them or a tributary they should be contacted. The Occupational Safety and Health Administration (OSHA) is concerned with the proper training and protection of workers handling hazardous materials. These regulations are incorporated into the procedures outlined here. Through its Pesticide Spill Response policy, PP&R strives to take a leadership role as a steward of public land and of the environment.

#### **POLICY**

The primary method by which Portland Parks and Recreation reduces pesticide spills is through prevention. Through planning, preparation, adherence to good work practices, and increased awareness of the potential results of a spill, the possibility of a spill occurring is minimized.

Should an emergency release of a pesticide occur, Parks and Recreation personnel will respond in accordance with all governmental regulations, including those of DOT, EPA, DEQ, OSHA, and this policy. In performing emergency activities following a spill, protection of both employees and the public, is of great concern, as is protection of property and the environment.

Anyone liable for a spill shall immediately clean up the spill or release. The cleanup must use the best available methods to achieve the lowest practicable level of contamination.

OSHA, which is concerned with worker protection, has two regulations governing spills. One, Hazard Communication, applies to incidental spills that present a low potential of hazard to the worker, the public and the environment. Included are small spills of dilute pesticides, spills of material with granular formulations, and lower toxicity materials. The other regulation, Emergency Response, applies to incidents with a high degree of hazard such as large spills of dilute material, pesticides with higher toxicity, and concentrates in a confined space.

An incidental spill becomes an Emergency Response when:

1. The release or spill significantly impacts another agency's functions;
2. The incidental spill precipitates evacuation or curtailing of work;
3. The event causes a negative impact on neighboring facilities or the community;
4. The spill involves a coordinated effort by local first responders.

Only licensed pesticide applicators can transport or apply pesticides. They will receive training and equipment that will allow them to respond to incidental spills. Spills that require an Emergency Response will be handled by a local jurisdictional HAZMAT team.

DEQ enforces several regulations pertaining to spill reporting and clean up, and hazardous waste storage and disposal. If a serious emergency occurs and the local fire department has been called in, or if there has been a spill that extends outside Parks facilities or could reach surface water, the National Response Center and the Oregon Emergency Response System (OERS) must be called. If the amount of pesticide spilled exceeds one pound in any 24 hour period the release must be reported to OERS. If it exceeds the amount listed in the Code of Federal Regulations List of Hazardous Substances and Reportable Quantities, the spill must be reported to the National Response Center.

The spill need not be reported immediately if it occurs on a surface impervious to the hazardous material and is fully contained, and if it is completely cleaned up without further incident, including repairing the cause of the spill. The Pest Management Coordinator will determine whether these agencies should be contacted.

Particular attention should be paid to ensure that a pesticide does not pollute the water supply. A primary aim in following the procedures outlined here is to recover and reuse as much of the spilled pesticide as possible. Any absorbent or other contaminated material from which the spilled pesticide cannot be recovered is hazardous waste and must be labeled, stored and disposed of properly.

## **Spill Prevention**

PP&R personnel will employ a variety of practices to reduce the potential of a pesticide spill. These will include the following:

### **Purchasing**

When procuring chemicals, a factor in determining which chemical formulation to purchase will be the ease with which it can be cleaned up in the event of a spill. Types of packaging and formulations that may help to prevent a spill from occurring will be factors as well. Characteristics of the pesticide, such as toxicity and reactivity that may affect the seriousness of a spill, will also be considered.

### **Preparation**

Planning, training of personnel, and acquisition and maintenance of equipment and supplies will be done to reduce the risk of a spill occurring, and to minimize damage should one occur. For example, regular preventative maintenance will be done on sprayers, replacing hoses and valves before they wear out.

## **Work Practices**

PP&R personnel will use practices to minimize the potential for a spill to occur, and to ease clean up should one occur. For example, pesticides should be placed in a leak-proof container while being transported.

## **PROCEDURES**

Should a release of a pesticide occur, the following guidelines should be followed. Do not clean up the spill if you are not properly trained, if you don't have proper protective equipment or if doing so would endanger your health or safety.

### **I Assess the Situation**

#### **A. If the release is out of control:**

1. Tell bystanders to remain at a safe distance.
2. Call 911. Ask for fire, describe the situation as a hazardous materials spill. If there are injured people, ask for an ambulance. If chemical injury is involved, be certain that a copy of the label accompanies the victim.
3. Assist injured people. Remove contaminated clothing immediately.
4. Determine whether there is an imminently hazardous situation that you can take steps to correct. (For example it may be appropriate to move the truck away from a waterway or heat source.)
5. Call the Communications Center at Horticultural Services, 823-1636; request any needed resources or assistance. The Communications Center will notify your supervisor and the Pest Management Program Coordinator.
6. If the spill is on a roadway, set up DOT reflectors upwind of spilled materials and divert traffic if possible.
7. Remain on site and update the Communications Center every 15 minutes.

**B. If the release is controllable** and there are no injuries, tell bystanders to remain at a safe distance and initiate control and clean up procedures outlined in **II**.

### **II Control the Spill**

1. Put on protective equipment.
2. Do not allow the material to enter a drain. Survey the area to see if there is a need to place a dam to protect a sewer drain or other waterway. If the pesticide does enter a drain, reduce the flow as much as possible, and call DEQ's Northwest Regional Office 503-229-4263, immediately.
3. Stop the flow of the chemical.

If the spill is from a leaky container, position the container to prevent additional spillage.

If the spill is from a leaky valve, isolate the valve and depressurize the tank.

If the spill is from a broken hose shut off valve or pump it may help to loop the hose back into the tank.

If there is a rupture, use duct tape or any other material (such as rags or a patch) to stop the flow of a chemical.

4. Contain the spill using absorbent material. Call the Communications Center to request additional supplies, resources, and assistance if needed.

5. Change or add to your protective equipment as necessary. Put contaminated protective equipment in a plastic bag to transport to your work unit for cleaning. Follow proper decontamination procedures for protective equipment.

### **III Clean Up the Spill**

1. For dry material, sweep up the pesticide.

2. For a liquid spill, remove material using a wet vacuum where possible. Other useful materials include absorbent dikes, pillows, and towels.

3. For concentrate spills on pavement, after picking up as much as possible, contain the area and wash the pavement with a small amount of water. Absorb or vacuum this diluted pesticide and reclaim it.

4. If the soil has been contaminated, contact the Communications Center. The Pest Management Coordinator, your supervisor, and you will determine to what degree cleanup should proceed using park staff. You may be asked to remove the contaminated soil. If so, scoop up enough soil to completely remove the pesticide. Place unusable material in a container labeled "Hazardous Waste". Up to 220 pounds, about half a barrel, of hazardous waste resulting from a spill can be transported by the applicator or transporter to their unit base. The Pest Management Coordinator may sample the soil on site to determine if it has been sufficiently cleaned up.

5. Contact the Communications Center if it has not been done already. Have the Spill Incident Report ready so that your supervisor and the Pest Management Program Coordinator can evaluate the situation.

### **IV Reclaim the Pesticides**

1. Reclaim the chemical on site if possible. Sift dried material to remove debris and return it to its proper packaging. Reclaim liquid material that has been absorbed through rinsing the absorbent material. Use the rinsate on a target site, or properly label and store it for future application.

2. Any pesticide recovered but not reclaimed on site will be processed at the work unit base. The absorbent material will be dried and reused.

3. Hazardous waste must be stored in a labeled container at the work unit headquarters. It will be transported to a waste management facility for disposal, arranged for by the Pest Management Coordinator.



## **V Document the Incident**

1. Complete a Pesticide Spill Incident Report.
2. File one copy of the report with the Pest Management Program Coordinator, one copy with your unit headquarters, and keep one copy for your personal records.
3. All Pesticide Spill Incident Reports will be reviewed by the Loss Control Committee.

## **VI Restock the Spill Kit**

The Pest Management Program Coordinator will go to all problem spill sites, supplying materials requested by the crew. He/she will assist in cleanup, if it has not yet been completed, ensure that the site has been cleaned up completely, help recover the pesticide and arrange for disposal. He/she will document the scene, talk to homeowners and emergency response crews, and photograph the site.

### **Communication Center Procedures**

Should a crew member call the Communication Center at City Nature-Forestry or City Nature-Horticultural Services to report an emergency release of a pesticide, it is a priority call. Use the top part of the Pesticide Spill Incident Report to gather information on the release.

#### **A. If the incident is under control:**

1. Ask the caller what assistance he or she needs.
2. Contact the Pest Management Program Coordinator and supervisor of the applicator or transporter and relay the information.

#### **B. If the incident is out of control:**

1. Ask the caller to call back every 15 minutes to update the situation.
2. Ask the caller what assistance he or she needs.
3. Immediately contact the Pest Management Program Coordinator, then the supervisor of the applicator or transporter and relay the information.
4. You may be asked to call other emergency response services. To ensure continuity, the person who took the original call must remain available until the incident is concluded.

### **Pesticide Spill Kit Response Equipment**

The following items must be immediately available to all persons applying or transporting pesticides:

1. A binder that includes:
  - Chemical labels for materials being transported

- MSDS for chemicals being transported clipped to front of binder
  - Shipping papers when necessary
  - Pesticide Spill Response Procedures and Incident Report
  - A DOT Emergency Response Guidebook
  - Emergency phone numbers
2. A cellular phone, if there is the potential of a spill occurring that would require assistance.
  3. Personal protective equipment appropriate for handling the pesticides being applied or transported in the event of a spill.
  4. An eyewash either on the truck or on site and immediately available in the case of an emergency.
  5. Tools and supplies to make repairs to the application equipment and to stop leaks.
  6. A means of picking up spilled material. Depending on the formulation this may include absorbent material, broom and dustpan, or shovel.
  7. Plastic recovery bags and ties for the material and for contaminated personal protective equipment.
  8. A jug of water and detergent.

Following is a list of equipment and supplies that may be necessary to carry depending on the type of pesticide and its volume:

An extra protective suit  
 Extra gloves  
 An extra set of clothing  
 Waterless soap  
 Absorbent dikes, pillows and towels  
 Squeegee  
 Whisk broom  
 Dust pan  
 Hard bristle brush to loosen material  
 Duct tape for temporary repair  
 Patching material  
 Quill and hose  
 2 freestanding signs warning of danger  
 Warning tape  
 DOT reflectors or flares  
 Strainers

Bucket

Flat and pointed shovels

It is the responsibility of the applicator or transporter to ensure that he/she is carrying the items necessary should there be a spill.

**Materials for the Communication Center**

Binders that include:

Spill Incident Reports

MSDS for all materials used

Labels for all materials used

Emergency phone numbers

Communication Center Procedure sheet

Current phone numbers of supervisors

# PESTICIDE SPILL INCIDENT REPORT

Name \_\_\_\_\_ Date \_\_\_\_\_ Phone number \_\_\_\_\_

Location of incident \_\_\_\_\_

Time release occurred \_\_\_\_\_ Temperature \_\_\_\_\_ Weather \_\_\_\_\_

Chemical(s) \_\_\_\_\_ Dilute \_\_\_\_\_ Concentrate \_\_\_\_\_

Approximate amount released \_\_\_\_\_

What caused the release? \_\_\_\_\_

Are there any injuries or chemical exposures? Y/N \_\_\_\_\_ Has 911 been called? Y/N \_\_\_\_\_

Are there any emergency response personnel on the scene? Y/N \_\_\_\_\_

Who? Fire \_\_\_\_\_ Police \_\_\_\_\_ Ambulance \_\_\_\_\_ HAZMAT \_\_\_\_\_

Is the pesticide near a drain or other waterway? Y/N \_\_\_\_\_ Is the drain protected? Y/N \_\_\_\_\_

Surface spilled on (soil, asphalt etc.) \_\_\_\_\_

Are there any special problems? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Other applicators/transporters on site? \_\_\_\_\_

Approximate amount recovered \_\_\_\_\_

## Witnesses

Name \_\_\_\_\_ Address \_\_\_\_\_ Phone \_\_\_\_\_

Name \_\_\_\_\_ Address \_\_\_\_\_ Phone \_\_\_\_\_

Name \_\_\_\_\_ Address \_\_\_\_\_ Phone \_\_\_\_\_

## Injuries or exposures

Name \_\_\_\_\_ Address \_\_\_\_\_ Phone \_\_\_\_\_

Name \_\_\_\_\_ Address \_\_\_\_\_ Phone \_\_\_\_\_

Name \_\_\_\_\_ Address \_\_\_\_\_ Phone \_\_\_\_\_

Has an accident report been filled out? Y/N \_\_\_\_\_ Type \_\_\_\_\_

Other \_\_\_\_\_

Name of person filing this report \_\_\_\_\_ Date \_\_\_\_\_

## Policy 13:

### **WORKER PROTECTION STANDARD**

#### **PURPOSE**

This policy covers appropriate standards for Federal Agricultural Worker Protection Standard compliance for the nursery and greenhouse facilities and their associated personnel within PP&R only, and does not apply to pesticide applications outside of these areas.

#### **BACKGROUND**

The Worker Protection Standard (WPS) is a regulation issued by the US Environmental Protection Agency. It covers pesticide application and notification issues for agricultural and commercial nursery and greenhouse operations. Training, protection, and mitigation standards have been adopted to reduce the risk of pesticide related illness and injury in workers. As they are currently operated, the nursery and greenhouse operations of the PP&R may fall under the scope of these standards. PP&R employs seasonal workers as well as licensed pesticide applicators. All of these workers may work in and around the greenhouse and nursery areas where pesticides may be applied. In the scope of this policy, the WPS term “Employer” refers to PP&R, the term “Handlers” refers to state licensed pesticide applicators, and “Workers” refer to seasonal maintenance workers without an applicator license.

#### **POLICY**

The WPS require that steps are taken to reduce the potential risk of pesticide-related illness and injury to handlers and workers with possible exposure to pesticides. It is therefore essential that all WPS requirements be satisfied for all City Nature-Horticultural Services employees involved with entry into nursery and greenhouse areas where pesticides may be applied.

This is accomplished by the following:

#### **Training**

- Pesticide safety training.
- Display of WPS safety poster.
- Access to labeling information.
- Access to application records.

#### **Practices**

- Proper pesticide applications.
- Exclusion of workers from areas being treated.
- Adherence to the WPS Restricted-entry Interval (REI).

- Notification of treatments.
- Provision and use of Personal Protective Equipment (PPE).

### **Mitigation**

- Provision of decontamination sites for handlers and workers.
- Emergency medical and transportation assistance availability.

### **Training and Resources**

All City Nature-Horticultural Services employees that work in or around a nursery or greenhouse area where pesticides are applied must receive the following:

- Employees without pesticide applicator licenses will receive approved WPS training within the time prescribed by WPS regulations. They will be afforded all the WPS worker protections.
- Employees with pesticide applicator licenses need not receive the entire special WPS training. However they should be familiarized with all special WPS requirements and be aware of locations of all the elements required to satisfy the standards. They must also to be afforded all the WPS handler protections.
- The Pest Management Program Coordinator will maintain complete WPS records and keep them up to date. The Coordinator will also conduct WPS training for City Nature-Horticultural Services personnel.
- Resource material regarding the WPS standards shall be maintained by the Pest Management Program Coordinator. This material will be available for reference at the City Nature-Horticultural Services Unit.

Policy 14:

## **PESTICIDE APPLICATIONS BY NON-PARKS AND RECREATION EMPLOYEES**

### **PURPOSE**

This policy establishes oversight procedures over all pesticide applications taking place on park land carried out by non-PP&R personnel, such as other city bureaus, private companies or individuals. Anticipated applications by these entities must undergo a special approval process to satisfy certain licensing and other requirements before the work can take place. This oversight is essential to ensure that all pest management activities occurring on park land adhere to established IPM based goals and principles and address environmental and safety concerns.

### **BACKGROUND**

Without proper oversight, pest management activities undertaken by non-PP&R personnel may lead to regulatory, environmental or safety problems. Park infrastructure, landscapes, and the public may be put at risk, or IPM principles may not be adequately adhered to. The approval process within this policy is not intended to be a hindrance to appropriate and timely work. These procedures are intended to ensure that the best practices are used and problems avoided.

### **POLICY**

Contractors, other city bureaus, partner organizations, state and county agencies desiring to apply pesticides to park property shall submit a completed *Application for Pesticide Use on Park Land* form to the IPM Program Coordinator for evaluation before any pesticide application takes place. This form can be found at in Program appendix 5 at:

<http://www.portlandonline.com/shared/cfm/image.cfm?id=103892>

or it can be obtained by contacting the coordinator at 503-823-1636. Required information details license numbers, materials, methods, equipment, purpose, notification, reporting, and more.

After receiving the completed form, the coordinator shall review the proposal, contact any affected PP&R staff, and approve or deny the request based on PP&R IPM program principles.

Details of the required licensing and bureau oversight for various categories follow.

#### **Employees from other city bureaus with an adopted IPM program:**

Full time employees of other city bureaus possessing valid state pesticide applicator licenses will be considered for approval to apply pesticides to PP&R property. The applicators license in the state-defined category appropriate for the particular application is required.

#### **Employees of commercial pesticide operator companies:**

Employees of commercial pesticide operator companies possessing valid state pesticide applicator licenses will be considered for approval to apply pesticides to PP&R property. The applicator license in the state-defined category appropriate for the particular application is required. A "Trainee License" is not sufficient licensing for park applications except for specially approved projects involving the removal of invasive plants as part of natural lands restoration

management. Furthermore, use of “Trainee” licensed applicators for these special projects will be approved only when all of the following conditions are met:

- The licensing variance must be specifically approved by PP&R IPM Coordinator.
- The work must occur under the direction of a contractor-supplied, fully licensed supervisor.
- There must be direct on-site supervision from a fully licensed city bureau representative for the duration of the application, e.g. PP&R or Bureau of Environmental Services staff.
- Before approval, there must be evidence that all trainee licensed applicators have sufficient previous pesticide application experience and a safety record to satisfy the PP&R approval process. Acceptable application experience may vary, but will be of sufficient assurance to PP&R of employee competence and knowledge of safe work practices. Three to five months is a likely minimum experience interval for approval. Inexperienced trainee licensed applicators will not be allowed to apply pesticides to park land.

Contractors must satisfy all of the standard applicable city contractual language pertaining to pesticide applications. These subjects may include safety precautions, liability issues, and other responsibilities. These issues are dealt with in the contract language agreed to before the project commences by both city representatives and the contractor.

The performance record of contracting businesses applying pesticides to PP&R lands shall also be regularly reviewed by PP&R and any other city bureaus involved. This review shall include an examination of past work and safety performance. All involved bureaus will disclose pertinent information regarding any performance or safety issues raised from prior projects.

**Employees of partner organizations:**

Full time employees of partner organizations possessing valid state pesticide applicator licenses will be considered for approval to apply pesticides to PP&R property. The applicator license in the state-defined category appropriate for the particular site is required and trainee license designations are not sufficient. There must also be direct on-site supervision from a fully licensed city bureau representative for the duration of the application, e.g. PP&R staff.

**Employees of state agencies:**

PP&R understands that there may be situations where state agencies need to apply pesticides to city property as part of their mandate to perform early detection and control of invasive species. PP&R is supportive of early detection and rapid response to serious invasive species threats, and communications from the state regarding their need for pesticide use for these purposes on park land will be responded to by the coordinator in a timely manner.

**Employees of the county vector and nuisance control agency:**

PP&R understands that there may be situations where the county vector and nuisance control agency has the need to apply pesticides to city property as part of their mandate to further public health goals. Communications from this agency stating their need for pesticide use for these purposes on park land will be responded to by the coordinator in a timely manner. Licensed public health endorsed applicators will be considered for approval to apply pesticides to PP&R property. PP&R and the county will work together to arrive at mutual agreements for activities that address public health goals and good environmental stewardship.



Policy 15:

## **RAT AND MOUSE PEST MANAGEMENT**

### **PURPOSE**

This policy establishes management procedures for rodents such as Norway rats, roof rats and house mice. Management of these pests differs greatly from typical landscape pest management and brings with it a specific set of issues that must be addressed.

### **BACKGROUND**

The presence of rats and mice in park structures and landscapes is considered a health and safety problem. These rodents can vector diseases to humans, damage park infrastructure and create other intolerable conditions.

### **BACKGROUND**

Rat and mouse control within structures such as community centers should be carried out by a qualified, licensed, structural pest management contractor that utilizes sound IPM principles. Where there is a need for rat and mouse control in areas adjacent to park structures or their landscapes, PP&R shall first refer to the primary responsible regional vector response agency which is Multnomah County Vector and Nuisance Control (MCVNC). Any further control methods employed by specially licensed PP&R personnel or contractors must be arranged through the Service Zone or Unit Supervisor.

Rodent IPM is best addressed through reduction in available food and harborage, however there may be situations where other measures are necessary. Use of rodenticides for rodents must occur within an IPM framework and employ materials and methods established and approved by the program coordinator. Rodenticides and other vertebrate pesticides may have potential for secondary toxicity to non-target organisms and may pose a potential threat to park users with access to baited areas. Therefore, if rodenticides are used by PP&R it will occur only through means such as locked bait boxes and not through general or rodent burrow distribution. If PP&R employees wish to utilize rodenticides, they must maintain a valid Oregon Public Health pesticide license certification endorsement.

## Policy 16:

### **TURF BROADLEAF WEED MANAGEMENT**

#### **PURPOSE**

This policy defines the management of weeds in the managed turf areas in Portland Parks and the use of any selective turf herbicides by any applicator.

#### **BACKGROUND**

For turf to function in the manner it was intended, appropriate maintenance standards may require management of weeds within these sites. While the subject of overall turf health is a topic too complex to cover in detail within this policy, the management of weeds is designated turf sites shall be regulated by this policy.

The establishment and maintenance of quality turf requires a proper site, good root zone conditions, optimum fertility levels, adequate irrigation, correct mowing practices, and other factors. PP&R relies primarily on attention to these siting and cultural factors in maintaining turf and minimizing the density of weeds. Adherence to good cultural practices aids in development of healthy stands of turf which resist establishment of weeds. PP&R has found that in most general park turf areas, tolerance of weed presence is possible, and precludes the need for further intervention, such as applying selective herbicides. However, these materials can be effective tools to reduce or eliminate populations of weeds in turf as part of an overall program of turf health maintenance in special areas where higher quality of turf is required.

Examples of turf health practices currently employed by PP&R:

- Proper siting
- Site and soil preparation
- Drainage improvements
- Pruning of adjacent plants for increased sunlight penetration
- Proper selection of grass seed varieties
- Core aeration
- Overseeding
- Mulch mowing to leave clippings on site
- Mowing at the proper height and frequency
- Proper irrigation practices
- Proper fertilization
- Application of selective broadleaf herbicides

## **POLICY**

Turf plays various important functions in our parks. When an area has been determined to be maintained as turf, it is the policy of PP&R to do so primarily through the implementation of proper planning, cultural, and mechanical practices. These practices are generally adequate to keep the population of turf broadleaf weeds at acceptable levels. At certain sites these practices alone may not be adequate to keep broadleaf weeds at acceptable levels. An acceptable level of turf quality and tolerance of weed infestation varies with the site. The threshold at which controls may be necessary shall be determined on a case-by-case basis taking into consideration such factors as location, public expectation, the manner of activities taking place on the turf, the history of previous control attempts, and stresses placed upon the site. Before applications of broadleaf herbicides take place at a general park or athletic field turf site, a Turf Broadleaf Herbicide Application Approval Request form must be submitted by the requestor to the appropriate manager or supervisor listed in the procedures section of this policy. The supervisor will then consult with the IPM coordinator to assess the proposed application for program compliance. All related turf maintenance issues must be considered by the supervisor and coordinator during this approval process. The management effort must consider and employ all applicable cultural and mechanical methods as components of a plan to return the turf to an acceptable level of quality. Goals of these methods may include reducing soil compaction, improving soil structure, seeding, increasing drainage capacity, and encouraging healthy and vigorous turf growth through proper fertilization.

Once an application is approved, only turf labeled herbicides on the approved list for a given unit may be utilized.

## **PROCEDURES**

For proper IPM, it is essential that there be proper coordination between all the components of turf health management. To ensure this coordination, all applicators must first obtain authorization from the appropriate supervisor listed below before broadleaf herbicides are used. The supervisor will assure compliance with the IPM program by consulting with the IPM Coordinator as part of the approval process. The coordinator will also consult with the Turf Manager as part of the process. In addition, the Service Zone Manager must be notified of all planned turf broadleaf applications before they occur.

Zones and Services Zone applicators: Zones and Services Zone Manager  
City Nature-Horticultural Services applicators: City Nature Zone Manager  
Delta Sports Complex applicators: Supervisor  
City Nature applicators: City Nature Zone Manager  
Golf course applicators: Course Superintendent  
Portland International Raceway: Facilities and Maintenance Supervisor

## **Special Considerations**

By its nature, the use of broadleaf herbicides in turf requires their application to sites that have varied and direct public uses, often involving children and pets. These applications must be carefully planned to allow for careful adherence to the pesticide label directives, and to minimize any potential impacts on these users.

## **Time of Day**

Applications should be made during the best time of day to avoid public use, high temperatures, and wind. For most situations this requires applications to be made as early in the day as possible. Applicators should consider off schedule timing, such as shifting work hours to begin several hours early so that spraying can be completed before conditions and park use makes applications problematical. Applications may also need to take place over several days to avoid spraying too late in the day. Minimizing public inconvenience and public concern should be of paramount importance and should supersede other considerations.

## **Scheduling Conflicts**

Any proposed applications should take into account the expected use of the area for that date and time, such as nearby school activities, recreation activities, athletic field scheduling, and all other anticipated uses. Applicators must contact these schools and departments when scheduling treatments.

## **Signage**

Notification signage is of utmost importance in turf applications. The nature of a typical turf site is open and with easy public access. This may necessitate the placement of many notification signs around the perimeter. As stated in the Pest Management Program *Notification of Pesticide Use at a Site* policy, signage should be adequate to inform any park user approaching the area. Applications of herbicides to our park turf sites are uncommon and may not be anticipated by park users. They should receive adequate notice that an application is taking place before they reach the site. Signs must remain in place and the public must be kept out of treated areas until the sprayed surfaces are completely dry. This may take a considerable amount of time but this effort must be made by the applicators to inform and keep people and their pets out of these treated areas until these reentry requirements have been met.

## **Seasonal Timing**

Wherever possible, applications should be timed to coincide with the ideal time for turf weed control. This is typically during the spring and fall months, where weed growth is active and conditions leading to turf stress, such as dry and hot weather, are not present.

## **Drift**

Minimizing drift is critical in turf broadleaf weed applications. Use of boom sprayers instead of backpack sprayers may increase the potential for drift. Great care should be taken to minimize any possible drift. Applications should cease if any drift inducing condition becomes apparent. Use of appropriate pressure, correct nozzles and other techniques should be employed to minimize creation of small spray particles that may drift.

## **Targeted applications**

Where warranted, spot spraying for turf weeds should be employed. While there are sites that will require an overall broadcast application, there are sites where only certain areas will require treatment. Applications should be focused on the target weed as much as practicable.

Policy 17:

## **PESTICIDE USE AROUND WATER BUREAU PROPERTY AND OPEN RESERVOIRS**

### **PURPOSE**

This policy establishes procedures for use of any pesticide materials being applied by PP&R personnel adjacent to, or upon Water Bureau Property.

### **BACKGROUND**

This policy was written in conjunction with Water Bureau personnel. It is the intent of PP&R to cooperate with the Water Bureau to ensure a safe drinking water supply. This policy is written to help explain and more fully establish procedures for the "Joint Water Bureau - Parks and Recreation Pesticide Use Policy."

### **POLICY**

It is the policy of PP&R to use all measures to protect the city water supply from contamination through pesticides. PP&R employees will provide any information needed by the Water Bureau to test the water for the presence of pesticides. Park employees will follow all the regulations and policies set out in the "Joint Water Bureau -Parks and Recreation Pesticide Use Policy". Some of the regulations in the policy deal with the following:

- No pesticide applications will be made in the "No Pesticide Use Zone" as listed in the spray maps of Washington and Mount Tabor Parks.
- Applications of pesticides will not be made if there is unacceptable drift.
- The Water Bureau will be notified if there is a spill or accident that causes unplanned release of pesticides into the environment in Mount Tabor or Washington Parks. Refer to the Parks and Recreation Spill Policy for appropriate response actions.
- Spray Program plans will be sent to the Water Bureau Water Quality Department for known pesticide applications made to areas in the Pesticide Use Notification Zone or the Special Precautions Zone. These plans will describe the pesticides expected to be used, the locations of use, and the frequencies of application.
- Any emergency or unplanned pesticide application needs to have prior approval from the Water Bureau Water Quality Department. These notifications must be made at least 48 hours before the planned application.

Policy 18:

## **PESTICIDE APPLICATIONS AROUND COMMUNITY GARDENS**

### **PURPOSE**

This policy defines acceptable and unacceptable use of pesticides within and near park areas designated as community gardens.

### **BACKGROUND**

Pest management in or near park areas designated as community gardens necessitates special considerations. Community Gardens program participants have varying levels of knowledge about pest management methods, and have differing views about the use of pest management materials. Community Gardens plots are in close proximity to one another and may change ownership from year to year. Plots also produce edible crops that necessitate special constraints in managing pests. For these reasons a special policy defines acceptable use of pesticides within and near Community Gardens.

### **POLICY**

- The Community Gardens program has established internal guidelines regarding pesticide use by participants of the program. One of these guidelines states that no herbicides can be used on Community Garden sites. This specifically refers to garden plots, pathways, fence lines, and any areas within the garden boundary. Spraying perimeters of the gardens from outside the fence is not permitted
- Park employees are asked to keep low pressure, spot directed applications of all pesticides at least 25 feet from the outside perimeter of Community Garden sites. Applications of herbicides to turf by boom sprayer equipment shall be kept at least 50 feet from Community Garden plots. Special circumstances requiring the applications of pesticides inside these limits will be made only through mutual agreement of Community Garden staff.
- Mechanical and cultural means, such as cutting, hoeing and mulching, can be used to remove or control weeds in the Community Garden sites and perimeters.
- Any pesticide applications, public or private, that may affect the gardens will be of concern to the Community Gardens Director, staff, and participants of the program.

## Policy 19:

# **WATERWAYS PEST MANAGEMENT**

## **GENERAL GOALS AND PHILOSOPHY**

(Note: Since the adoption of this policy as part of PP&R's inclusion into the ESA 4(d) for endangered salmonids in the region, the bureau has added additional IPM oversight and decision making processes for waterway pest management. Please contact the IPM coordinator when planning any work covered by the scope of this policy.)

Portland Parks and Recreation recognizes the special importance of the rivers, streams, ponds, water quality facilities and wetlands that fall under our stewardship. The sensitive nature of such habitats, their plant and animal communities, and their direct link with other waterways require that we establish specific policies to ensure their health. This addition to the PP&R Pest Management Program outlines this special treatment. It establishes clear guidelines and limitations regarding maintenance methods and materials for both these waterways and the park lands adjacent to them.

As in the rest of the Pest Management Program, Integrated Pest Management principles will be employed in all landscape management decision making. Management of unwanted vegetation, diseases, and pests will follow the IPM decision making rationale.

- Proper planning and management decisions begin the IPM process.
- Cultural methods of vegetation and pest management are preferred and will next be employed.
- Mechanical means of vegetation and pest management are next in line of preference, and will be utilized where feasible.
- Biological methods of vegetation and pest management are to be considered before chemical means, where they are feasible.
- Botanical and synthetic pesticides will be used only when no other feasible methods exist.

## **MANAGEMENT PRACTICES, MATERIALS AND LIMITATIONS FOR PARKS WATERWAYS AND BUFFERS**

### **Definitions**

The *buffer zone* referred to in this policy is defined as a corridor of land that is 25 feet in width on the sides of a stream or other body of water. Measurement of this buffer zone begins at the edge of the water line at the time of application. Anticipated seasonal or weather related changes affecting water level will be included in the decision making process when dealing with buffer zones. The *high water line* as defined in this policy refers to the highest possible water level that would be expected in a given body of water during a 5-year period.

### **Application Equipment Used**

Pesticide delivery for all listed areas in this policy will be carried out by hand with directed, low volume, single wand sprayers, wiping, daubing and painting equipment, injections systems, or drop spreaders. Typically this is done by backpack sprayers, but may also include sprayers with larger fill tanks as long as the same kind of hand application methods are used. These methods of delivery result in low volume applications and low pressure spraying. This minimizes the formation of fine mists that might be carried off target. These practices ensure that applied materials will reach targeted plants or targeted soil surfaces.

### **Pesticide Drift**

When applications of pesticides are being made within the buffer zone, great care will be exercised in the process. Managing drift is of particular importance when surface waters are nearby. Equipment used in the application shall employ all necessary methods to limit drift. Nozzle size, pressure regulation, droplet size, and height of spray wand, are all techniques that can be modified to reduce unwanted drift of pesticides.

Spray applications will not be allowed in the buffer area when:

Wind speed is above 5 mph

Wind direction or activity would carry pesticides toward, or deposit them upon open water

### **Pesticides Available**

To more clearly regulate any possible aquatic impacts, the pesticides available for use in buffers and aquatic sites will be reduced in scope from the general park list. Only the pesticides specifically listed within this policy may be used within buffer zones or waterways. Choice of pesticides utilized take into account any possible effects on aquatic life as well as tendencies to move in the environment.

### **Materials allowed in certain circumstances (see matrix) in buffer zones:**

#### Post emergent herbicides:

Glyphosate products: Roundup Pro, Rodeo

Triclopyr products: Garlon 3A, Brush and Vine, or other amine formulations only

Surfactant (i.e. LI 700)

#### Pre-emergent herbicides:

Devrinol WP (napropamide)

### **Materials allowed in certain circumstances in aquatic sites, aquatic labeled only:**

Glyphosate (Rodeo)

Approved surfactant (R-11 or equivalent-contact IPM coordinator for best aquatic choices)

Copper (Cutrine Plus)

Aquashade (acid blue 9, acid yellow 23)



### **Materials available for tree injections in buffer zones:**

In the event a pest or disease threatens the health of important and valuable trees within a buffer zone, there may be a need to treat them. Instances of this occurring are rare. However, in these special cases, the use of injectable pesticides may be employed when necessary, with the following limitations. The pesticide applied must be delivered by methods that inject or otherwise distribute the material entirely within interior tree tissues. Pesticides will not be injected into the soil surrounding the tree. Tree surfaces will not be sprayed or treated with pesticides. The insecticides and fungicides used in these injection systems shall be approved by the PP&R Pesticide Approval Committee. The intent and limit of this exception to the approved buffer zone pesticide list is to allow only the insecticides or fungicides necessary to combat direct threats to the health of valuable trees.

### **Materials for all other areas:**

PP&R general Pest Management Policy approved pesticides may be used outside the waterway and buffer zones, where not otherwise prohibited by this policy.

### **Record Keeping Requirements**

All regular application record keeping requirements will be adhered to for all pesticide applications. This includes date and the time intervals of the application, temperature and wind conditions, location of application, materials used, concentrations used, amount applied, coverage rate, equipment used, applicator information and license number.

Additionally, record keeping requirements will be amended for applications within the buffer zone or for aquatic situations. Standard application record forms will have space added to denote these special treatments. These special treatments will then be separately tracked and monitored by the Pest Management Program Coordinator. An annual report will be made summarizing all applications to these special areas. This report will be made available to agencies such as National Marine Fisheries Service and Bureau of Environmental Services.

### **Personnel Requirements**

All those applying pesticides to PP&R lands must be Oregon Department of Agriculture licensed applicators. Application of pesticides to aquatic sites will only be done by licensed personnel who have received an additional aquatics license certification.

### **Changes to the Policy**

A need may arise for modifications or additions to the PP&R Waterways Policy. There are several methods available to accomplish this.

### **Formal review process**

A review process will be conducted one year from the initial adoption of this policy. This review process will involve PP&R and National Marine Fisheries Service representatives. Subsequent reviews will take place every two years. Adjustments and changes to the policy can be made during this process.

### **Emergency/Short term process**

There may be situations where PP&R cannot wait for the formal review process to take place. An example is the unlikely, but possible introduction of a new and destructive pest that needs to be treated within a short time frame. In such a case, PP&R representatives will develop an IPM strategy to deal with the threat. If this strategy involves the need for any pesticide applications within buffer zones or waterways that are not already outlined in the current policy, PP&R will contact NMFS representatives for approval before implementing the plan.

A similar need for short time frame changes would occur when a new product might appear on the market that is demonstrably safer and more efficacious. It would therefore make sense to add this new material to the list of approved Waterways Policy pesticides. PP&R representatives will contact NMFS representatives for approval before addition of new pesticides to the buffer zone/waterways approved list.

## **PP&R Buffer Zone Landscape Classification and Practices**

### **Classification of Buffer Zone Landscapes Near Waterways, Lakes and Ponds**

Park landscapes near waterways, lakes and ponds are divided into four classifications (A,B,C,D) that describe their current features, as well as define the differing objectives and maintenance rationales of their care.

#### **A. Highly Managed Areas**

Examples: Cathedral, Waterfront.

##### *Features of Highly Managed Areas:*

Ornamental landscape

Public access and activity

High public use

Mowing of turf, sometimes to edge of waterway

May have facilities adjacent to water

May have highly modified stream banks

Often limited plantings in buffer

*Objectives for Highly Managed Areas:*

Healthy plants and turf  
Maintain ability to handle high use  
Minimize need for chemical intervention  
Control invasive plants  
Safe access  
No bare soil areas  
Low tolerance for weeds  
May have high expectation for aesthetics in general

**B. Intermediate Managed Areas**

Examples: Gabriel Park, Johnson Creek, Arboretum Sellwood Riverfront Pond.

*Features of Intermediate Areas:*

Stream banks have some buffering with predominately native plants  
Some impacts from use and park development apparent  
Managed landscapes may be nearby  
Stream bank erosion may be occurring due to use

*Objectives for Intermediate Areas:*

Maintain healthy plant buffers  
Minimize need for chemical intervention  
Control invasive plants where feasible  
Minimize impact on buffer  
No bare soil areas  
Tolerance for natural appearance and weeds

**C. Impacted Natural Areas**

Examples: Powell Butte, Macleay, Tideman Johnson, Foley Balmer, Woods, Taylor Woods, Johnson Lake, Force lake, Whitaker Ponds, Mays Lake, Powell Butte Pond, Errol Heights Pond.

*Features of Impacted Areas:*

Very limited impact to these areas.  
Stream banks have buffering with predominately native plants  
Limited impacts from use and park development apparent

Managed landscapes are not nearby

*Objectives for Impacted Areas:*

Maintain healthy plant buffers

Minimize need for chemical intervention

Lower tolerance of invasive plants, non- natives

Minimize any impacts on buffer

No bare soil areas

**D. Intact Natural Areas**

Examples: Miller Creek

*Features of Intact Natural Areas:*

Very limited visitor impact

Native plant communities exist

No nearby developed park areas

*Objectives for Intact Natural Areas:*

Maintain healthy plant buffers

No tolerance of invasive plants, non-natives

Minimize any impacts from activities

**Management Practices for Buffer Zones of Waterways, Lakes and Ponds**

The following matrix gives specific guidelines for use of pesticides and fertilizers in the buffer zones of waterways that have varying levels of management Use of pesticides and fertilizers also vary depending on whether they are being used for routine maintenance or for restoration and construction projects.

Chemical used	Activity	D Areas	C Areas	B Areas	A Areas
Pre-emergent herbicide use possible?	Routine Maintenance	No	No	No	Only in shrub beds above high water line
	During Construction/Restoration	No	No	No	Only in shrub beds above high water line
Glyphosate use possible?	Routine Maintenance	<i>Spot spray for target list weeds only*</i>	Spot spray and broadcast spray	Spot spray and broadcast spray	Spot spray and broadcast spray
	During Construction/Restoration	<i>Spot spray and broadcast spray for non-natives*</i>	Spot spray and broadcast spray	Spot spray and broadcast spray	Spot spray and broadcast spray
Triclopyr use possible?	Routine Maintenance	No	Cut and treat stems.	Cut and treat stems.	Cut and treat stems. Spot spray
	During Construction/Restoration	No	<i>Spot spray to establish monocots*</i> Cut and treat stems. <i>Spot spray/broadcast to establish monocots*</i>	Spot spray  Cut and treat stems.  <i>Broadcast spray*</i>	Cut and treat stems. <i>Broadcast spray*</i>
Fertilizer Used					
Slow release fertilizer use possible?	Routine Maintenance	No	No	No	Directed applications to shrub beds if no flooding possible
	During Construction/Restoration	Directed applications if no flooding possible	Directed applications if no flooding possible	Directed applications if no flooding possible	Directed applications if no flooding possible

\* requires approval of City Nature Zone Manager

## **Use of Mulches**

Mulches and other ground coverings are often employed during the installation and restoration of landscapes as well as their ongoing maintenance. They are utilized for a variety of reasons. Mulches suppress weeds, help to retain moisture around plants, reduce possible erosion, and provide visual enhancement.

Use of landscape mulches in buffer areas should take into account any possible impacts to the buffer as well as nearby waterways. These impacts may include:

- Inadvertent introduction of non-native weeds to the site.
- Leaching of substances such as tannins from the mulch into nearby waterways.
- Migration of mulch material into waterways.
- Nutrient leaching into waterways.

Choices of mulches should take these concerns into account. Routine maintenance in A, B, and C class area buffers should minimize the use of mulches. Class D area buffers should use mulches only as a part of restoration activity. Mulching in areas that are below typical high water lines is discouraged in any buffer areas. Seeding of cover crops for erosion control is allowed in buffer zones. Use of cover crops in class D areas should never introduce any persistent non-native plant species.

## **Management Practices Within Bodies of Water, Biofilters and Wetlands**

**The following describes specific practices that may be used within the actual bodies of water.**

### **Within Streams**

In the rare need for control of noxious weeds and invasive non-native plants within a stream itself, mechanical and biological means will be utilized where possible. When these methods are not feasible, emergent weeds only may be controlled with Rodeo and an approved surfactant if needed. Although rare, control of noxious and invasive weeds such as Japanese knotweed, yellow iris, and purple loosestrife may be needed to maintain a healthy environment. These treatments will take place at mid-summer. Frequency of these treatments shall not exceed once a year even in the worst of infestations. Applicable permits from appropriate outside agencies will be obtained before this kind of treatment takes place. Submerged weeds will not be controlled by chemical means in streams and rivers or other moving waters.

### **Within Pond and Lake Areas**

Within the pond or lake itself, herbicides will be used only for the control of noxious weeds and non-natives that threaten the health of the habitat. A list of these potential target weed species shall be developed by the City Nature Zone Managers, or be qualified as circumstances warrant. When chemical methods are necessary within the pond itself, only Rodeo (glyphosate) and an approved aquatically labeled surfactant shall be employed.

In the event an emergency situation arises where habitat is endangered by non-native invasive submerged weeds in ponds and lakes, City Nature Zone Managers and the IPM program

Coordinator may approve the use of an appropriate herbicide for control as a last resort. This will only be allowed where there is no direct outflow of the treated water to fish bearing streams or waterways. The herbicide utilized shall be of very low toxicity to aquatic organisms, and be applied in such a way that there are no appreciable negative effects on the health of the aquatic environment.

### **Within Wetland Areas**

Examples: Oaks Bottom, small wetlands at numerous sites.

Within the wetland itself, herbicides will be used only for the control of noxious weeds, and non-natives that threaten the health of the habitat. A list of these potential target weed species shall be developed by the City Nature Zone Managers, or be qualified as circumstances warrant. When chemical methods are necessary within the wetland itself, only Rodeo (glyphosate) and an approved aquatic surfactant (such as R-11) shall be employed.

### **Within Biofilters and Pollution Reduction Facilities (PRFs)**

Examples: Delta Sports Complex, Gabriel.

Biofilters and PRFs intercept storm water run-off of surfaces before it reaches the waste water system or other drainages. Pre-emergent herbicides will be allowed where necessary only in shrub beds above the high water line. For post emergent applications, PRF buffers will be treated as a class B streamside buffer.

### **Within Bioswales**

Bioswales are planted areas consisting primarily of grasses that act as a filter for run off water moving towards a body of water or drainage system. If bioswales lie within the buffer area of any of the above listed waterways, they will have the same maintenance restrictions upon them as any other buffer zone. If the bioswale has an outlet to any surface water, its treatment will follow the same restrictions as a B class streamside buffer. If there is no outlet to surface water, the buffer may receive the same treatment as general park lands.

## **Special Exception Areas**

Special exception areas not covered under the preceding descriptions are: Waterfront Park seawall area, Westmoreland Casting Pond, Laurelhurst Pond, and the four municipal golf courses.

### **Waterfront Park Seawall Area**

This area, being very different than other water frontage areas, will have special options available to it. The distance and nature of the river interface is such that the buffer as defined elsewhere in the policy is not applicable to this area. Fertigation delivery systems are used in this area. Plant nutrients are monitored and sampled to maintain an optimum level for turf vigor and to reduce waste. Broadleaf weed control may be used within the IPM guidelines for maintaining turf health in this zone.

### **Westmoreland Casting Pond**

Algae control in this body of water shall be allowed when necessary to maintain its usability for public events. Application of labeled elemental copper products such as Cutrine Plus will be allowed with the following limitations. Concentrations of copper shall not exceed 0.4 ppm in the retained pond water during treatment. No water undergoing copper treatment will be released to Crystal Springs. After the treatment period, copper levels will be ascertained before any water is allowed to flow into Crystal Springs. Water must contain less than 0.007 ppm of copper before it will be allowed to overflow into Crystal Springs. Treatments to precipitate copper out of the

effluent water prior to release may be carried out to ensure this level is not exceeded. Outflow of water from the casting pond shall not exceed 100 gallons per minute. Any accumulated pond sludge will be removed mechanically or drained only to the sewer system during pond cleaning or draining. Use of Aquashade dye is also allowed to prevent algal bloom.

**Laurelhurst Pond (drains to sewer system), Golf Course Ponds (no direct outflow to streams)**

Algae control in these bodies of water will be allowed when necessary to maintain usability. Application of labeled elemental copper products such as Cutrine Plus will be allowed. Concentrations of copper shall not exceed 0.4 ppm in pond water. Use of Aquashade dye is also allowed to prevent algal bloom.

**Golf Course Streams, Lakes and Their Buffers**

The nature of the current layout of the golf courses places golf greens and other finely manicured areas near to waterways in some limited instances. In these specific areas, the buffers are variable in width, and may be smaller than 25 feet. In limited areas, buffers may be reduced to as little as 10 feet due to proximity of golf greens to waterways. Special golf course buffer widths shall never be less than 10 feet. Locations of these variances will be mapped and recorded. These variance areas are few in number and amount to a very small percentage of overall water frontage. In new construction and design of golf courses, placement of greens to allow establishment of standard width buffers is encouraged where feasible. Incorporation of intercepting buffers will also be encouraged where feasible. These intercepting buffers can be situated so that any possible runoff flowing towards open water is diverted into planted drainage systems and biofilters.

**Golf Course Waterways Testing**

Waters adjacent to treated areas within the golf courses shall be tested on a regular basis for both fertilizer and pesticide levels. Frequency of the testing will depend upon the scheduling of applications, but shall occur no less than twice per year. This testing shall follow applications, irrigation or rain events, and/or be timed to best to detect any potential leaching or run-off problems. The Bureau of Environmental Services will recommend an adequate regimen of testing that is sufficient to monitor levels of potential concern. PP&R and BES will work in conjunction in this testing process.

**Routine Golf Buffer Maintenance Practices**

There will be no fertilizer application to turf in buffer. Only directed, slow release fertilizer may be applied to shrub beds in buffer areas.

There will be no application of broadleaf herbicides to turf in buffer. Use of pre-emergent herbicides is acceptable in shrub beds above high water line. Use of glyphosate and triclopyr will follow the same limits as "C" areas in the matrix.

**Golf Buffer Construction/Establishment Practices**

Pre-emergents are allowed only in shrub beds above high water line. Use of glyphosate and triclopyr will follow the same limits as "C" areas in the matrix. Only slow release fertilizer using a directed application method can be used.



Policy 20:

## **VEGETATION MANAGEMENT IN WOOD CHIPPED CHILD PLAYGROUND AREAS**

### **PURPOSE**

This policy defines acceptable practices for managing vegetation in specially designated child play areas in developed parks. Consisting of play structures underlaid by deep wood chip surfaces, these playground areas function in special roles that heighten sensitivity to our pest management practices and materials. This policy addresses approved vegetation management methods and materials in these specific areas.

### **BACKGROUND**

In all of our IPM activities, PP&R seeks to minimize any potential impacts to our park users while still providing responsible, effective, and efficient care for our facilities. Chipped playground areas in particular focus attention on our activities and require a special set of best management practices to benefit both PP&R and park users.

### **POLICY**

All PP&R personnel are required to adhere to this policy when they are undertaking weed management activities in chipped playground areas and their immediate borders or margins.

The deep chip layers that serve as a safety cushion for falls also act as an effective weed control mulch and reduce the need for other active weed control measures. Herbicides will not be used to control vegetation in chipped play areas or their margins. Weed control in these play areas will be accomplished primarily through the use of the wood chip mulch itself. To function as both a safe surface for play and as an effective weed barrier, this chip layer should be kept at the established minimum depth for playgrounds. If the mulch layer is not adequate for weed control it should be amended as soon as is practicable. Mulch layers that have broken down over time and provide a medium for good weed growth should be replaced or amended with fresh chips.

Manual weeding is usually adequate to keep weeds from establishing within the chipped areas. Effort shall be made to respond quickly to weed presence so that this kind of control will be feasible and efficacious.

Use of powered weed control equipment, such as line trimmers and tillers, may be used in chipped areas to control weeds, but careful attention to the dangers they present must be taken. This kind of equipment should not be used when nearby park users may be put at risk.

Playground/turf interface borders will be maintained by hand or mechanical means. Establishment of a structured border is preferred and encouraged for installation where possible as it provides a lower maintenance interface between play areas and turf. These structures also reduce weed and turf infiltration.

The only pests that will be regularly controlled in wood chipped play areas are weeds and other unwanted vegetation. The need to control other pests, such as insects or diseases, is not expected. One exception would be the presence of venomous stinging insects such as yellow jackets in the play area. In these circumstances the use of a targeted insecticide to eliminate the immediate safety hazard may be required. All other applicable PP&R Pest Management Program policies and approved pesticide lists apply in this case.

## Policy 21:

# Venomous Insect Management

### **PURPOSE**

This policy defines acceptable practices for managing venomous insects such as hornets, wasps, yellow jackets, and honeybees in PP&R park landscapes and grounds. While these insects will not always cause problems, their presence in some locations can create immediate and serious public and staff safety issues. Most importantly, individuals with bee and wasp venom allergies may be presented with life threatening situations if they are stung. To properly address these safety concerns, park employees may be faced with the need to apply insecticides within a short time frame. These control activities and use of insecticide require adherence to the special rules outlined in this policy.

### **BACKGROUND**

Wasps, hornets and yellow jackets may quickly establish nests above and below ground in both natural areas and in developed parks. European honeybees form above ground nests, and may also form swarms when seeking new nest sites. Not every wasp or bee nest creates a problem for our users or staff. Public threat is dependent on insect species, nest location, time of year and other factors.

Yellow jackets and some wasp species can be particularly aggressive towards people, especially near their nests. Other wasps, such as paper wasps are less aggressive and are more benign depending on location of their nest. Honeybee swarms generally do not create a large stinging potential as bee behavior is altered during this time. Nest location is also important when determining threat. Nests located near walkways, buildings, playgrounds or similar sites are more problematic than those located in remote areas. Nests in areas where vegetation management or restoration planting is being carried out can also create problems. Wasp behavior may also vary with the time of year. Yellow jackets in particular will exhibit increased defensive behavior as the season progresses. Normally, yellow jacket and paper wasp colonies only live one season. Honeybee nests usually persist from year to year.

### **POLICY**

#### **Evaluation**

When wasp or bee nests are discovered on PP&R property, staff should evaluate the safety threat they pose. If the nest is considered to create a safety hazard for park users or staff, demarcation and control measures should take place. Nests that create an immediate hazard, such as those near playgrounds, community centers, walkways, trails and work sites, should be addressed as soon as possible. Other criteria that may constitute a hazard are nests that have been disturbed and nests sites with aggressive individuals. Nests occurring within inhabited structures such as community centers create an immediate safety hazard and control of these should be immediately referred to a qualified professional contractor.

### **Demarcating nests or swarms**

Where possible, nests or swarms that present an immediate public hazard should be demarcated by either signage, cones, taping, flagging or by other means so that the area of danger can be avoided by park users. This demarcation should stay in place until the nest is eliminated or the swarm is removed.

### **Honeybee swarms and nests**

When discovered, honeybee swarms should be marked as described above until the bees have been collected. Qualified bee removal businesses should be contacted to collect the swarm. Honeybee swarms should not be sprayed with insecticides. Unless location of the nest presents a hazard, honeybee nests should be tolerated where possible. If removal is required, qualified contractors should physically remove nests when feasible. Spraying of honeybee nests should be a last resort.

### **Spraying wasp and hornet nests**

Aerosol jet stream products labeled for use on wasp and hornet nests can be effective against both yellow jackets and paper wasps, but they must be used with extreme caution. Wasps will attack when they sense an application to their nests, and even freeze-type products are not guaranteed to stop every individual. For this reason extreme caution must be used when nest applications are taking place. The following practices should be adhered to:

- Nests should be sprayed at night or before dawn, when all members of the hive are present and most docile. Daytime spraying is not recommended except in certain emergency cases where the public is not placed at risk from resultant increased hive activity.
- Nests should not be disturbed before treatment. Disturbed nests should not be approached.
- Nest location should be demarcated as described above. Demarcation must be left up until the nest has been eradicated.
- Nests that are situated high in trees, or in otherwise difficult to access locations should be treated by professional contractors, or by qualified staff in the Urban Forestry unit. Do not attempt to control a nest if you cannot easily do so.
- Nests in structures, building voids etc., should be treated by professional contractors only.
- Approved PP&R staff may use wasp and hornet jet sprays available at Park Stores. Approved sprays will contain synthetic pyrethroids as their active ingredient. Products with other active ingredients are not approved for use by PP&R staff.
- Pesticide application notification signage must be placed as per the *PP&R Notification Policy*.
- All applications shall be documented as per the *PP&R IPM Program Record Keeping Policy*.

### **Approved applicators**

In general, park staff with valid ODA pesticide applicator licenses with an insecticide category endorsement should be the designated employees carrying out applications. However, there may be instances where these employees are not available and a nest presents an immediate health and safety threat to the public or staff. In these instances, available personnel with ODA pesticide applicator licenses of any category are approved to use jet spray wasp and hornet products to treat nests. In rare emergency safety situations where no licensed personnel are able to respond in a timely fashion, other personnel may be approved to carry out an application, but only if they have had prior supervisor approval, prior training in the safe use of these sprays, and instruction in the

proper management of wasps and bees. Staff members with known wasp or bee allergies will not carry out any wasp or bee control.

**Use of traps**

When yellow jackets are a continuing serious problem at a site from year to year, use of commercial traps to target emerging queens in the spring can be considered. Trapping queens during the 30- to 45-day emergence period has the potential to provide an overall reduction in the yellow jacket population for the season. The more traps put out in spring on an area-wide basis, the greater the likelihood of reducing the number of nests later in the summer. Usually one trap per acre is adequate in spring for depletion trapping of queens. Use of traps to reduce yellow jacket numbers later in the season is considered ineffective.

## Policy 22:

# **DESIGNATED DOG OFF LEASH AREA PEST MANAGEMENT**

## **PURPOSE**

This policy defines acceptable practices for managing pests in the designated *Dog Off Leash Areas* (DOLAs) in Portland's parks. Park users are invited to bring their dogs to recreate in these sites and with less direct control than in other park areas, therefore pest management in these areas needs to reflect this special use. Pest management decisions, methods, and material use should be carried out in a way that maintains public and dog safety and allows for responsible stewardship of park property.

## **BACKGROUND**

There are many off leash sites in Portland parks. Some are fenced, all-day areas. A larger number are unfenced, with seasonal hours compatible with traditional park use patterns and adjacent uses. All sites are signed, and boundary markers are in place at the unfenced sites. For the purposes of this policy, DOLA sites consist of:

1. An officially designated fenced dog off leash area, including the fence line.
2. An officially designated unfenced dog off leash area within the boundary markers.

By their nature, and from the impact of concentrated dog activity, DOLAs can create pest management problems such as increased weeds in turf and the need to control weeds along boundary fence lines. Other pest issues that arise in DOLAs are the presence of noxious, poisonous, allergenic, or otherwise incompatible weeds, and venomous insects and their nests. Proper management of these pests needs to be clearly defined to minimize any potential risks to dogs and their owners and to minimize interference with DOLA use by the public.

## **POLICY**

Expected pest management issues arising in the DOLAs consist of:

- Weeds along fence lines, in tree circles, in shrub beds, around park structures, and in turf.
- Management of allergenic or poisonous weeds such as poison oak.
- Venomous insect management.

DOLAs may need to be closed temporarily so that necessary maintenance work does not impact pets and their owners. To the extent possible, temporary signage will be located outside DOLA boundaries or fencing to alert users in advance of such closures. Pesticide applications will be further accompanied by notification signage and mandated reentry intervals as defined in IPM policy #4.

### **Herbicide use in fenced DOLAs**

When it is necessary to apply herbicides within fenced DOLAs, great care should be used to time and locate the application to minimize interference with public use. Ideally herbicide use should

be as infrequent as possible, and would take place when dogs are not present. When herbicides are to be used inside fenced DOLAs or along the interior or immediate exterior of their fence lines, the DOLA should be closed and dogs excluded. Closure should be maintained until the reentry requirements as mandated on the product label have been satisfied. This interval typically requires that people and pets be kept out of the area until the sprayed surface has dried. Normal application notification signage as mandated in Policy #4 should be used. To the extent possible, additional temporary signage will be located outside DOLA fencing to alert users in advance of closures.

### **Herbicide use in unfenced DOLAs**

When it is necessary to apply herbicides within unfenced DOLAs, great care should be used to time and locate the application to minimize interference with public use. Ideally herbicide use should be as infrequent as possible, and would take place when dogs are not present. Standard notification as mandated in Policy #4 must be employed. Label directives for reentry must be adhered to, and dogs and people must be excluded from application areas until the interval has been satisfied. Since unleashed dogs are difficult to exclude from large areas, this may necessitate applications that are small in scope to allow for this level of oversight. To the extent possible, additional temporary signage will be located outside DOLA boundaries to alert users in advance of closures.

### **Turf broadleaf control**

No turf will be sprayed for broadleaf weed control in currently active DOLAs. In unusual circumstances DOLAs taken out of service may receive selective herbicides as part of an overall turf renovation program but only within the oversight of the PP&R Turf Weed Policy and the specific approval process it requires.

### **Use of preemergent herbicides**

To be an effective barrier to weed seed germination, preemergent herbicide sites need to be left undisturbed after they are applied. Since the activity of dogs in a DOLA disturbs soil surfaces and reduces or eliminates the effectiveness of a preemergent application, their use in areas of concentrated disturbance sites, such as fenced DOLAs, is often not effective. However there may be need for preemergent use in less intensively impacted areas.

### **Insecticide use**

As is the case at most park properties, general insecticide use is not expected in DOLAs. However there may be emergency situations created by the presence of venomous insects such as yellow jackets, wasps, bees and their nests. These insects can create serious safety issues for people and their pets. Control of these insects and any use of insecticides must take place as described in the Venomous Insect Management Policy. Nest demarcation guidelines and the response process as described in that policy are of heightened importance in DOLAs since dogs not in control by their owners may be at increased risk from an active nest site.

### **Mechanical equipment**

All aspects of park user safety and dog safety should be considered when determining a particular weed control method for a given site. Mechanized weed control equipment such as string trimmers can create hazards such as flying rocks and debris. Off leash dogs may be at risk when they approach the work area. Care should be exercised when using this equipment.

PP&R Dog Off Leash Program:

<http://www.portlandonline.com/parks/index.cfm?c=38287>

Policy 23:

## **NPDES GENERAL PERMIT COMPLIANCE FOR PESTICIDE USE IN OR NEAR WATERWAYS**

### **PURPOSE**

Adherence to this policy ensures compliance with the requirements of Oregon's general National Pollutant Discharge Elimination System (NPDES) waste discharge permit as it relates to pesticide use and their residues in surface water. This permit, issued by Oregon Department of Environmental Quality pursuant to ORS 468B.050 and the Federal Clean Water Act, applies to an application of any registered pesticide to surface water, or an application within 3 feet of the water's edge, or use of any registered pesticide in or near water that leads to a post application residue in water. Specific compliance requirements under this permit are based on the nature of the pest control activities, including pesticide use and scope. This policy and its compliance requirements are in addition to, and do not supplant PP&R's IPM program *Waterways Policy* and its requirements. Further, this NPDES permitting policy refers only to weed and algae control. Control of pests such as mosquitoes or nuisance animals, and aerial pesticide use, is not covered by this policy.

### **BACKGROUND**

As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Certain legal decisions have determined that aquatic pesticide applications can be considered point sources of pollution to water. Therefore, use of pesticides in these sites requires permitting under NPDES. In Oregon, this permitting is administered by the state Department of Environmental Quality (DEQ). DEQ issued an NPDES general permit on October 31, 2011. This permit provides the way to comply with the requirements of state and federal law. The state permit applies to all operators that conduct pesticide applications that reach waters of the state or their margins. Operators include entities such as Portland Parks and Recreation and other city bureaus. Waters of the state include lakes, ponds, springs, rivers, streams, creeks, and marshes, whether natural or artificial. All park bodies of water with hydrologic connection, whether direct or through groundwater, can be considered as within the scope of this permit.

**Application of pesticides by any entity to park waterways, to emergent plants in waterways, or applications within 3 feet of the water's edge must be preapproved through the process defined in this policy.**

There are varying levels of requirements under the state permit that are dependent on the treatment area and extent of the application. The permit sets a threshold that, when exceeded, requires pesticide users to submit an application to the state for registration and pay fees among other requirements. For weed and algae control in water, these large scale exceedance thresholds are set at 20 acres of surface treatment area or 20 linear miles of treatment area at water's edge. These thresholds refer to the annual treatment area under the responsibility of a single landowner, (such as park land cared for by PP&R) and combine any applications performed by any agency



on that land. Therefore PP&R and other agencies and contractors applying pesticides on park land must be included in any calculations assessing threshold. Treatments that do not exceed these thresholds result in more limited requirements, and do not need individual permit applications to the state. The complete state permit is located at:

<http://www.deq.state.or.us/wq/wqpermit/docs/general/npdes2300a/2300aPermit.pdf>

The permit is a source for definitions of terms, and other important information. All applicants must read the permit and understand the requirements of the permitted party before they submit their application for approval.

## **POLICY**

To satisfy compliance with Oregon NPDES permit requirements, all entities or persons desiring to perform applications of pesticides to control weeds or algae in state waters and/or their margins on PP&R property must receive prior approval through the oversight of the PP&R Integrated Pest Management program. This approval process shall consist of the following:

Submission of a completed approval form (see Appendix 8) detailing the application parameters. The completed form must be submitted to the PP&R IPM coordinator for review no less than 30 days before the anticipated work start date. The PP&R IPM coordinator will assess the request for compliance with both state NPDES requirements as well as PP&R IPM policies, including its Waterways Policy. The coordinator will inform the applicant of the application's approval status within 15 days of the work start date. In the unlikely event that the scope of the anticipated pesticide application triggers need for a special permit application to DEQ, the applicant will be notified and advised of the additional steps needed.

The applicant will be responsible for all ongoing permit requirements for the application as described below. Any required written documentation will be copied and submitted to the coordinator once project work has been completed.

Once approved, those applying pesticides must:

1. Read and maintain a copy of the state permit.
2. Ensure that the pesticide use or discharge does not cause or contribute to the violation of water quality standards. If the operator becomes aware of a violation, corrective action must be taken. This can be accomplished by revising pest management measures and ensuring that the following are eliminated and are not repeated:
  - (a.) Spills, leaks, or unpermitted discharges
  - (b) Discharges that cause or contribute to water quality standard violations
  - (c) Failures to follow pest management measures
  - (d) Pest management measures insufficient to meet discharge limitations in the state permit
  - (e) Reportable adverse incidents (see definition below).

Upon becoming aware of any leak, spill, or adverse incident, the operator must take immediate corrective action.

3. Ensure the optimal amount of pesticide consistent with the label be used to reduce the potential for development of pest resistance and to minimize the frequency of applications necessary to control the target pest.

4. Carry out regular maintenance activities to reduce leaks, spills, and other unintended discharges during use and mixing and loading must take place.
5. Maintain pesticide application equipment in proper operating condition by calibrating, cleaning and repairing as necessary to ensure effective and accurate applications.
6. Assess weather conditions in the treatment area to ensure the application is consistent with all application pesticide application requirements.
7. Use pest management measures as an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices as follows:
  - a. Use current, comprehensive information on the life cycles of pests and their interaction with the environment to manage pests with the least possible hazard to the environment, property and people, while keeping under consideration the most economical means to achieve the pest control.
  - b. Monitor and identify pests. Consider that not all insects, weeds, and other living organisms require control.
  - c. Consider action thresholds before taking any pest control action. Pest Management Measures first sets an action threshold, a point at which pest populations or environmental conditions indicate that pest control action must be taken. Detecting a single pest does not always mean control is needed.
  - d. Consider alternative pest management options, such as,
    - i. Preventative measures to prevent pests from becoming a problem.
    - ii. When monitoring, identification, and action thresholds indicate that pest control is required, and preventive methods are no longer effective or available, evaluate and use the appropriate control method(s) by considering cultural mechanical or physical methods and biological control methods, or other pest control methods.

***Adverse Incident*** – means an unusual or unexpected incident that you have observed upon inspection or of which you otherwise become aware, in which:

- (1) A person or non-target organism has likely been exposed to a pesticide residue, (e.g. direct contact or through drinking water) and
- (2) The non-target organism suffered a toxic or adverse effect.

The phrase “toxic or adverse effect” includes effects that occur within waters of the state on non-target plants, fish or wildlife that are unusual or unexpected (e.g., non-target organisms are those not described on the pesticide product label or otherwise not expected to be present) as a result of exposure to a pesticide residue, and may include:

- Distressed or dead juvenile and small fishes
- Washed up or floating fish
- Fish swimming abnormally or erratically
- Fish lying lethargically at water surface or in shallow water
- Fish that are listless or nonresponsive to disturbance
- Stunting, wilting, or desiccation of non-target submerged or emergent aquatic plants
- Other dead or visibly distressed non-target aquatic organisms (amphibians, turtles, invertebrates, etc.)

The phrase, “toxic or adverse effects,” also includes any adverse effects to humans (e.g., skin rashes), or animals that occur either from direct contact with or as a secondary effect (e.g., sickness from consumption of plants or animals containing pesticides) from a discharge to waters of the state and that are temporally and spatially related to exposure to a pesticide residue (e.g. vomiting, lethargy).

## Policy 24:

# **MOLE AND GOPHER MANAGEMENT**

## **PURPOSE**

This policy establishes management procedures for burrowing rodents such as moles and gophers. Management of these pests differs greatly from typical landscape pest management and brings with it a specific set of issues that must be addressed to ensure park visitor and employee safety.

## **BACKGROUND**

Moles and gophers can create turf and landscape problems due to their tunneling and mounding activities. While tunneling and mounding can be tolerated in many park areas, in some sites the aesthetic damage from these activities cannot be tolerated. This soil disturbance can also present trip hazards for park users, particularly in turf areas. Mounds can also create problems for mowers. And trapping activities raise their own safety issues that must be addressed to ensure park users and employees are not put at risk.

## **POLICY**

Mechanical control of burrowing rodents such as moles and gophers is allowed with an Ornamentals and Turf category endorsement of the Oregon Public Pesticide Applicators license currently held by our staff licensees. Where a demonstrated need exists, and supervisors have directed that control actions should take place, then gophers and moles may be mechanically trapped in tunnels by these licensed PP&R personnel. To ensure that park visitors are not put at risk by trap placement, the following rules must be adhered to for all trap uses.

1. Trap type must be of the scissor, loop, hoop and cinch types. Spike, spear or harpoon traps are not approved.
2. Once placed, traps shall not be visible to park visitors. A soil covering must be in place over the set trap, which is typically placed under a cardboard or wood barrier beneath the soil. Traps shall not protrude from the soil, nor should they be marked by any means, such as signs, cones, stakes, or pots.
3. Traps shall be placed early in the morning, and removed by noon. In no instance shall traps be left in place overnight.
4. No traps shall be placed in, or adjacent to playgrounds.
5. Setting levers must be used to compress scissor type trap springs.
6. Only Public Pesticide Applicator licensees may carry out trapping.

PP&R IPM Program approved commercial mole repellents containing castor oil are also available for trial use. These granular products may provide some efficacy in certain turf situations, although the expected level of their effectiveness has not been established. Consult the approved product list for park units in the appendices for more product details. No other mole controlling chemicals or baits are approved for use.

## Policy 25:

# NEONICOTINOID INSECTICIDE USE ON PP&R PROPERTY

## PURPOSE

This policy defines the protocols for use of any neonicotinoid class insecticides on PP&R property. While insecticide use within PP&R's IPM program is already very limited in scope, the characteristics of this particular class of insecticides necessitate special consideration and a need for specific policy guidelines. Additionally, as of April 1, 2015, City of Portland's Ordinance 187078 specifically bans the use of neonicotinoid insecticides on city property and eliminates the purchase of plants treated with these insecticides, with allowable exceptions only as prescribed in Exhibit A of the ordinance. Therefore, all use of neonicotinoid insecticides on PP&R property shall take place only within strict compliance with the provisions of this policy and Ordinance 187078 to ensure conservation and protection of pollinators and wise stewardship of park lands. Additionally, special considerations as detailed in part 2 of this policy shall be taken when purchasing commercial nursery stock, trees and other plants for installation on PP&R property.

## BACKGROUND

Neonicotinoids are a class of insecticides with a similar chemistry and mode of action. Commercially available products contain the following active ingredients: clothianidin, dinotefuran, imidacloprid and thiamethoxam. The characteristics of these insecticides vary, but all exhibit traits such as relatively long persistence in the environment, a systemic action when applied to plants, and effectiveness at low rates of use. While they tend to be less toxic to mammals, fish and other wildlife compared to some older insecticide chemistries, neonicotinoids are still highly toxic to most insects, including bees and other insect pollinators. And similar to some other insecticides, neonicotinoids can be applied to act systemically, i.e. within plants. The insecticide moves through the plant vascular system and into plant parts such as stems and leaves in varying amounts. It is also possible that the insecticide can be found in the nectar and pollen of treated flowering plants. Neonicotinoid expression in this nectar and pollen are cause for great concern since pollinators feeding on these treated plants can be exposed to the insecticide. Not only is acute toxicity to these pollinators of concern, but potential sub-lethal effects are troubling as well. Even small doses of neonicotinoids can affect important insect behaviors and compromise their ability to survive and reproduce. Honeybees, bumblebees, and other pollinators play a vital function in both agricultural and natural systems. It is estimated that bumble bees, honey bees, mason bees, and other insects are responsible for pollinating 30% of the world's food supply. Without a presence of a healthy pollinator community, food production and natural ecosystem functioning is harmed. Pollinator conservation is an important element in the PP&R IPM program. The details of this policy define a conservative, protective approach to ensure PP&R actions are not detrimental to the health and successful stewardship of bees and other pollinators.

## POLICY

1. As of April 1, 2015, all use of neonicotinoid class insecticides on city property by city staff or contractors shall not take place unless it strictly adheres to the allowable exceptions as defined by City of Portland Ordinance 187078 and its Exhibit A. PP&R

pesticide applicators shall assume all neonicotinoid class insecticide use is disallowed unless they have been given specific instruction by the IPM Coordinator that the use is part of the special exemptions as defined in Appendix A. In addition, no contractor use of this class of insecticide is allowed for any city property including landscapes, buildings or other sites.

Link to Ordinance 187078 and Exhibit A:

<http://www.portlandonline.com/auditor/index.cfm?a=527264&c=36767>

2. As of April 1, 2015, PP&R will eliminate all uses of neonicotinoid insecticides when growing plant materials in city greenhouse and nursery operations. Additionally, purchase of neonicotinoid treated plant materials for use on Portland Parks and Recreation property is restricted as defined by Appendix A and its required phase out plan.

## REFERENCES and RESOURCES

1. American Phytopathological Society. Compendiums: Flowering Potted Plant Diseases, Ornamental Foliage Plant Diseases, Rhododendron and Azaleas Diseases, Rose Diseases. APS Press, 1983-1995.
2. Dreistadt, S.H., J.K. Clark, and M.L. Flint. Pests of Landscape Trees and Shrubs: An Integrated Pest Management Guide. 2004. University of California Press. 2nd edition. Oakland, CA.
3. Bragg, Dave, et al. Pacific Northwest Insect Control Handbook, revised annually. Extension Services of Oregon State University, Washington State University, and University of Idaho.
4. Johnson, W. T., Lyon, H. H., Insects That Feed on Trees and Shrubs. Cornell University Press, 1988.
5. Pscheidt, Jay W. et al. Pacific Northwest Plant Disease Control Handbook, revised annually. Extension Services of Oregon State University, Washington State University, and University of Idaho.
6. McDonald, Sally A., Applying Pesticides Correctly. North Carolina State University, US Department of Agriculture, and US Environmental Protection Agency.
7. Pirone, Pascal P., Diseases and Pests of Ornamental Plants. John Wiley & Sons, 1978.
9. Sinclair, W. A., Lyon, H. H., and Johnson, W. T. Diseases of Trees and Shrubs, 1987. Cornell University Press.
10. Williams Ray D. et al, Pacific Northwest Weed Management Handbook, revised annually, Extension Services of Oregon State University, Washington State University, and University of Idaho.
11. Bobbitt, Van M. et al. Pacific Northwest Landscape Integrated Pest Management Manual. Washington State University, 1999.
12. Byther, Ralph S. et al. Landscape Plant Problems Washington State University, 2000.
13. Fisher, G., J. DeAngelis, C. Baird, R. Stoltz, L. Sandvol, A. Antonelli, E. Beers, and D. Mayer (eds.). Pacific Northwest Insect Management Handbook. Cooperative Extension Services of Washington, Oregon, and Idaho. Revised annually.
14. Sinclair, W.A., H.H. Lyon, and W.T. Johnson. Diseases of Trees and Shrubs. 2005. Cornell University Press. 2nd edition. Ithaca, NY. ISBN: 0-8014-1517-9.
15. Costello, L.R., E.J. Perry, N.P. Matheny, J.M. Henry, and P.M. Geisel. Abiotic Disorders of Landscape Plants: A Diagnostic Guide. 2003. Regents of the University of California, Division of Agriculture and Natural Resources. Publication 3420.
16. L. Burrill, S. Dewey, D. Cudney, B. Nelson, R. Lee, and R. Parker. Weeds of the West. 1996. Whitson, T. (Editor). Washington State University Cooperative Extension. WYWSWS001.
17. Disease Compendia of American Phytopathological Society  
Compendium of Apple and Pear Diseases. 1990. Jones, A.L. and H.S. Aldwinckle (eds.). APS Press. St. Paul, MN.  
Compendium of Conifer Diseases. 1997. Hansen, E.M. (ed.) and K.L. Lewis. APS Press. St. Paul, MN.

Compendium of Flowering Potted Plant Diseases. 1994. Daughtrey, M.L., R.L. Wick, and J.L. Peterson. APS Press. St. Paul, MN.

Compendium of Rhododendron and Azalea Diseases. 1986. Coyier, C.L. and M.K. Roane (eds.). APS Press, St. Paul, MN.

Compendium of Rose Diseases and Pests, 2nd Edition. 2007. Horst, R.K. APS Press. St. Paul, MN.

## **Internet Links**

### **Pesticide Information**

California Department of Pesticide Regulation  
<http://www.cdpr.ca.gov>

CDMS Label and MSDS site  
<http://www.cdms.net/manuf/manuf.asp>

EPA Pesticides Program  
<http://www.epa.gov/pesticides/>

EPA Pesticide registration documents  
<http://www.epa.gov/pesticides/reregistration/status.htm>

EPA Inerts Program  
<http://www.epa.gov/opprd001/inerts/>

EXTOXNET, an Internet based pesticide informational site maintained by O.S.U.  
<http://ace.orst.edu/info/extoxnet/>

National Pesticide Information Center  
<http://npic.orst.edu/index.html>

Oregon Dept. of Agriculture Pesticides Division  
<http://www.oregon.gov/ODA/PEST/>

### **Integrated Pest Management Information**

Integrated Plant Protection Center (IPPC) Oregon State University:  
<http://ippc.orst.edu/dir/>

IPM & Related Sites in Oregon and Pacific Northwest  
<http://ippc.orst.edu/oregonIPM.html>

IPPC- PNW Handbooks, weather data, IPM links  
<http://pnwpest.org/>

National Integrated Pest Management Network  
<http://www.reeusda.gov/nipmn/>



OSU Pacific Northwest Nursery IPM website  
<http://oregonstate.edu/Dept/nurspest/index.htm>

PP&R IPM Program website  
<http://www.parks.ci.portland.or.us/IPM/ipm.htm>

Washington State Pest Management Resource Service  
<http://wsprs.wsu>

**DISCLAIMER**

The use of pesticide trade names in this document does not constitute an endorsement by the City of Portland. Descriptions of pesticide use and management practices are provided in this program for PP&R employee use, and are not intended as public recommendations.

## Appendix 1

### Approved Pesticide Lists

Following are lists of pesticides that are approved for use in specific work units in parks. A good IPM approach allows for the choice of ideal materials for specific needs. IPM also anticipates the need to managing pest resistance with rotations of products with differing modes of action rather than relying on a "one material fits all" approach. Despite the lengthy appearance of these approved lists, most of these pesticides are not used in a typical year, or are used in a very minor way.

It is also important to understand that pesticide applications are used after many other IPM strategies have first been either employed, or considered. The vast majority of PP&R pest management practices never involve the use of pesticides. Similarly, the vast majority of park acreage never receives any kind of pesticide application. Other IPM strategies PP&R employs include prevention of pests through policy, design and selection, and management of pests through cultural practices, physical means, and mechanical methods.

All pesticides available for use within parks must first be placed upon an approved list after undergoing a review process that carefully examines the individual characteristics of the product and whether it would be an appropriate addition within our program. Issues of efficacy, public health and safety, potential environmental impacts, overall plant health requirements, land management needs, and other concerns are taken into account during this process. Applicators within a specific work unit must then make their choices of materials from their own approved list. Individual work units have different responsibilities and pest management requirements for the lands under their care. The individually tailored approved lists reflect these differences. Occasionally, subsets of work units may receive approval for certain materials that are not on their general approved list. For example, trial uses of products may be focused on a single golf course for demonstration purposes.

All applicators in each work unit are limited to the pesticides appearing on their specific approved list. Pesticides not appearing on their particular list are not available for their use. Careful attention should be paid to the further limitations of pesticides available for use within waterway buffer zones and aquatic sites as outlined and defined in the Waterways Pest Management Policy.

Additions to the approved lists must follow the process as described in the "Pesticides Approved for Use in Parks" Policy.

The following lists of approved pesticide materials are specific to each work unit. PP&R applicators must choose only from currently listed products. Only state licensed applicators may apply pesticides in Portland Parks. Use of pesticides must occur under adherence to the PP&R Integrated Pest Management Program policies and oversight. Pesticides use must adhere to all product label directions.

Format:

**Product trade name** (active ingredient) Description of purpose and use within IPM program.

## **PARK SERVICE ZONES APPROVED LIST**

Areas of pest management: General community, neighborhood, regional, and urban parks.

### **HERBICIDES**

#### **Primary choices:**

**Gallery 75 DF** (isoxaben) Used on shrub beds, tree circles, and other areas. Can be used in combination or rotation with oryzalin to broaden the spectrum of weeds prevented.

**Garlon 3A, Lilly Miller Brush and Vine** (triclopyr amine) Selective products for woody, difficult to control perennials. Used in spray and cut-stem applications, also for invasives and habitat restoration.

**Ranger Pro, Roundup Pro Concentrate, RU ProDry, Rodeo, Aquaneat, Aquamaster** (glyphosate) Primary vegetation control product used with other methods in shrub beds, tree circles, bare ground, and on invasive weeds.

**Surflan AS** (oryzalin) Used in shrub beds, tree circles, fence lines and other park areas for weed control. A primary liquid form preemergent product.

**XL 2G** (benefin+oryzalin) Combination product for wider spectrum weed control. Useful in sites where liquid products are more difficult to apply. This is a primary granular preemergent product.

#### **Specialty uses:**

**DeMoss, Garden Safe Moss and Algae Killer, others** (fatty acids) Moss control desiccant. For structures and non-vegetated surfaces. Not typically used, but possible sporadic use.

**Scythe** (pelargonic fatty acid) Minor use desiccant used for top-kill of early-stage, easily killed weeds.

### **INSECTICIDES**

**Aerosol Wasp Sprays** (pyrethroids only) Directed jet sprays used for individual wasp and hornet nest treatments posing health and safety threats to park users.

**Azatin XL** (azadirachtin) Neem tree extract used for control through growth regulating and anti-feeding effects. Specialty use product. Typically not used in park zones, but retained for unusual circumstances.

**Bacillus thuringiensis** Primarily for lepidopterous insects, although subspecies can be used for other targets. Typically not used in park zones, but retained for unusual circumstances.

## **PARK SERVICE ZONES APPROVED LIST (cont.)**

**Beneficial nematodes** Predatory nematodes for insect control treatments for susceptible targets where needed. Typically not used in park zones, but retained for unusual circumstances.

**M-Pede, Safer Insecticidal Soap, others** (soaps) General soft body insect control. Typically not used in park zones, but retained for unusual circumstances. Note pollinator protection guidelines.

**Sunspray, others** (horticultural oils) General insect control both for dormant and growing season use. Typically not used in park zones, but retained for unusual circumstances. Note pollinator protection guidelines.

### **MISCELLANEOUS**

**Agridex, Competitor, Syl-Tac, Phase, LI 700, others** (spray adjuvant-not a pesticide) Surfactants used to enhance spray coverage and increase efficacy.

**Contra Blox** (bromadiolone) Rodent bait for use only under the parameters of Policy 15. Used by Public Health category licensed applicators only. Used only when placed in locked, tamper resistant bait boxes. Used only as part of an approved IPM approach for rat control in specific, non-interior locations.

**Deer-Off** (putrescent egg and capsaicin) Deer foliage repellent.

**No Foam** (anti-foaming agent) Silicon based, reduces foaming, used in large agitated spray tanks.

**Sluggo, Escargo** (iron phosphate) Slug and snail bait for specialty areas susceptible to unacceptable damage, such as certain perennials, annuals. Not typically used, but retained on list for use if plant loss is unacceptable.

**Tanglefoot** (barrier product) Physical sticky barrier for crawling insect pests. Not typically used, but retained on list for use if loss is unacceptable.

**Terro Ant Bait stations, others** (borax) Borax bait stations for problems ant nests.

**Turf Trax, Signal, others** (marker colorant) Used in spray solutions to temporarily mark area of application.

**Wasp/yellow jacket traps** (pheromone trap) Yellowjacket trap for certain areas. Not typically used, but retained on list for use if safety issues are created by wasp and yellow jacket presence.

**SPECIAL APPROVAL:** Requires manager/coordinator/policy approval prior to use.

**Aquashade** (acid blue 9, acid yellow 23) Blue colorant used to suppress algae growth in certain ponds in developed parks. Used only within approved framework for noxious invasive weeds and algae as part of weed management strategy specific to site as outlined in Waterways Policy.

**Citrine Plus** (chelated elemental copper) Aquatic algae control. Used only within approved framework for noxious invasive weeds and algae as part of weed management strategy specific to site as outlined in Waterways Policy. Minor to zero use material retained on list for specific situations.

**Horsepower**(MCPA, triclopyr, dicamba) Selective weed control in turf. Used for turf renovation as part of overall IPM approach. Turf broadleaf herbicide use must be pre-approved per Turf Broadleaf Weed policy. Used very rarely, primarily for athletic field surface renovation. Not for general use on park turf.

**Sonar AS** (fluridone) For control of noxious invasive weeds that threaten the health of an aquatic system as part of approved overall IPM management plan specific to site; potential sites and uses outlined in Waterways Policy. Minor to zero use material retained on list for specific situations.

**Spotlight** (fluroxypyr) Selective weed control in turf. Used for turf renovation as part of overall IPM approach. Turf broadleaf herbicide use must be pre-approved per Turf Broadleaf Weed policy. Used very rarely, primarily for athletic field surface renovation. Not for general use on park turf.

## SPECIALTY ROSE GARDEN APPROVED LIST

Areas of pest management relating to this list: Three specialty rose gardens: International Rose Test Gardens, Peninsula Rose Gardens, Ladd's Addition Rose Blocks. This list does not apply to general parks in service zones. (Specialty Rose Garden sites are also approved for use of Service Zone listed pesticides.)

Integrated pest management activities in rose gardens on park land are highly dependent on factors such as garden location, intent and use of the planting, rose varietal choice, site conditions, and public expectations. Tolerance of disease and insect presence, and intensity of pest control activities and inputs will vary with these factors. PP&R IPM inputs at rose garden sites, including the use of pesticides, will reflect these factors and take place only under a carefully considered and planned approach.

### FUNGICIDES

**Banner Maxx II, Fertlome Liquid Systemic Fungicide** (propiconazole) For disease control in rotation with other materials on specialty rose gardens.

**Bayleton** (triadimefon) For disease control in rotation with other materials on specialty rose gardens.

**Carbamate 75 WDG** (ferbam) For disease control in rotation with other materials on specialty rose gardens.

**Clearys 3336** (thiophanate) For disease control in rotation with other materials on specialty rose gardens.

**Compass** (trifloxystrobin) For disease control in rotation with other materials on specialty rose gardens.

**Daconil** (chlorothalonil) For control of diseases in rotation with other materials primarily on golf greens, specialty rose gardens, and special situations.

**Microcop** (copper sulfate) **Copper soap** (copper octanoate) Unlikely, but potential use in cases of clear benefit from dormant season application in special need situations in rose gardens.

**Norbac 84c** (Agrobacterium radiobacter) Beneficial bacteria for prevention of crown gall disease.

**Pageant** (pyraclostobin, boscalid) For disease control in rotation for specialty rose gardens.

**Zyban WP** (thiophanate methyl+zinc and maneb) For disease control in rotation with other materials on specialty rose gardens.

### INSECTICIDES and MITICIDES

**Acelepryn** (chlorantraniliprole) Specialty use product for unacceptable insect damage in high value plantings. Also trial use for rose midge management.

**Avid 1.5 EC** (abamectin) Miticide for use as part of a carefully implemented plan to keep mite levels at a non-injurious level in specialty rose gardens. Note pollinator protection guidelines.

**Azatin XL** (azadirachtin) Neem tree extract used for control through growth regulating and anti-feeding effects. Specialty use product. Note pollinator protection guidelines.

**Conserve** (spinosad) Material for specialty rose gardens. Minor use specialty product, not typically used. Note pollinator protection guidelines.

**Distance** (pyriproxyfen) Insect growth regulator for rose midge management trial use.

**Floramite** (bifenazate) Miticide for use as part of a carefully implemented plan to keep mite levels at a non-injurious level in specialty rose gardens. Note pollinator protection guidelines.

**Hexygon** (hexythiozox) Miticide for use as part of a carefully implemented plan to keep mite levels at a non-injurious level in specialty rose gardens. Note pollinator protection guidelines.

**Merit, Mallet etc.** (imidacloprid) Product used for soil stage rose midge control. Highly restricted uses only, to protect pollinators. See Neonicotinoid policy and City Council Ordinance 187078 and consult with IPM coordinator for acceptable uses. Note pollinator protection guidelines.

## ATHLETIC FIELD SERVICES APPROVED LIST

Areas of pest management: Athletic fields such as softball, baseball, football and soccer fields.

### HERBICIDES

**Ranger Pro, Roundup Pro Concentrate, RU ProDry, Rodeo, Aquaneat, Aquamaster** (glyphosate) Primary vegetation control product used with other methods in shrub beds, tree circles, bare ground, and on invasive weeds.

**Scythe** (pelargonic fatty acid) Minor use contact herbicide used for top-kill of easily controlled weeds.

### MISCELLANEOUS

**Agri-dex, Competitor, Syl-Tac, Phase, LI 700, others** (spray adjuvant-not a pesticide)

Surfactants used to enhance spray coverage and increase efficacy.

**Armorex** (garlic, sesame oil, white pepper) Goose repellent for stadium turf. Trial use.

**Turf Trax, Signal, others** (marker colorant) Used in spray solutions to temporarily mark area of application.

**SPECIAL APPROVAL:** Requires manager/coordinator/policy approval prior to use.

**Acelepryn** (chlorantraniliprole) Specialty use product for unacceptable insect damage in high value specialty turf. Specialty use product for stadium turf, very limited need. Note pollinator protection guidelines.

**Azatin XL** (azadirachtin) Neem tree extract used for control through insect growth regulating and anti-feeding effects. Specialty use product for stadium turf. Note pollinator protection guidelines.

**Horsepower**(MCPA, triclopyr, dicamba) Selective weed control in turf. Used for turf renovation as part of overall IPM approach. Turf broadleaf herbicide use must be pre-approved per Turf Broadleaf Weed policy. Used very rarely, primarily for athletic field surface renovation. Not for general use on park turf.

**Spotlight** (fluroxypyr) Selective weed control in turf. Used for turf renovation as part of overall IPM approach. Turf broadleaf herbicide use must be pre-approved per Turf Broadleaf Weed policy. Used very rarely, primarily for athletic field surface renovation. Not for general use on park turf.

## CITY NATURE-URBAN FORESTRY APPROVED LIST

Areas of pest management: trees on streets, parks, other city property, and UF nursery operations.

### HERBICIDES

(Urban Forestry herbicide use mainly confined to nursery sites.)

**Garlon 3A, Lilly Miller Brush and Vine** (triclopyr amine) Selective products for woody, difficult to control perennials, also for invasives and habitat restoration.

**Garlon 4 Ultra** (triclopyr ester) For basal and cut-stem applications during tree removal for view corridor establishment and maintenance.

**Ranger Pro, Roundup Pro Concentrate, RU ProDry, Rodeo, Aquaneat, Aquamaster** (glyphosate) Primary vegetation control product used with other methods in shrub beds, tree circles, bare ground, and on invasive weeds.

**Scythe** (pelargonic fatty acid) Minor use desiccant used for top-kill of early-stage, easily killed weeds.

**Surflan AS** (oryzalin) Used in nursery, shrub beds, tree circles, fence lines and other park areas for weed control. A primary liquid form preemergent product.

### FUNGICIDES

**Alamo** (propiconazole) Trunk injection product for certain high value elms.

**Arbotect** (thiabendazole) Trunk injection product for certain high value elms.

**Daconil** (chlorothalonil) Disease control on high value trees in special situations. Typically not used, but retained for unusual, short term use where long term plant health is affected.

### INSECTICIDES and MITICIDES

(Street trees do not routinely receive scheduled insecticide or miticide treatments. Note pollinator protection guidelines.)

**Aerosol Wasp Sprays** (pyrethroids only) Directed jet sprays used for individual wasp and hornet nest treatments posing health and safety threats to park users.

**Azatin XL** (azadirachtin) Neem tree extract used for insect growth regulating and anti-feeding effects. Typically not used, but retained for unusual, short term use where long term plant health is affected.

**Bacillus thuringiensis** Primarily for lepidopterous insects, although subspecies can be used for other targets. Typically not used, but retained for unusual, short term use where long term plant health is affected.

**Beneficial nematodes** Predatory nematodes for susceptible targets where needed. Typically not used, but retained for unusual, short term use where long term plant health is affected.

**Conserve** (spinosad) Typically not used, but retained for unusual, short term use where long term plant health is affected.

**Floramite** (bifenazate) Miticide as part of a carefully implemented plan to keep mites at non-injurious levels. Typically not used, but retained for unusual, short term use where long term plant health is affected.

**M-Pede, Safer Insecticidal Soap, others** (soaps) General soft body insect control. Typically not used, but retained for unusual, short term use where long term plant health is affected.

**Sunspray, others** (horticultural oils) General insect control both for dormant and growing season use. Not typically used in general parks. Typically not used, but retained for unusual, short term use where long term plant health is affected.

**Tempo SC Ultra** (cyfluthrin) Contact product for special or high value plant material. Typically not used, but retained for unusual, short term use where long term plant health is affected.

### MISCELLANEOUS

**AgriDex, Competitor, Syl-Tac, Phase, LI 700, others** (spray adjuvant-not a pesticide) Surfactants used to enhance spray coverage and increase efficacy.

**No Foam** (anti-foaming agent) Silicon based, reduces foaming, used in large agitated spray tanks.

**Turf Trax, Signal, others** (marker colorant) Used in spray solutions to temporarily mark area of application.

## CITY NATURE-HORTICULTURAL SERVICES APPROVED LIST

Areas of pest management: greenhouse management, nursery management, interagency agreement landscape management.

### HERBICIDES

#### Primary choices:

**Gallery 75 DF** (isoxaben) Used on shrub beds, tree circles, and other areas. Can be used in combination or rotation with oryzalin to broaden the spectrum of weeds prevented.

**Garlon 3A, 4 Ultra, Greenlight Tough Brush Killer**, (triclopyr) Selective products for woody and other difficult to control broadleaf weeds. For spray and cut-stem applications.

**Ranger Pro, Roundup Pro Concentrate, RU ProDry, Rodeo, Aquaneat, Aquamaster** (glyphosate) Primary vegetation control product used with other methods in shrub beds, tree circles, bare ground, and on invasive weeds.

**Surflan AS** (oryzalin) Used in nursery, shrub beds, tree circles, fence lines and other park areas for weed control. A primary liquid form preemergent product.

**XL 2G** (benfen+oryzalin) Combination product for wider spectrum weed control. Useful in sites where liquid products are more difficult to apply. This is a primary granular preemergent product.

#### Specialty uses:

**Arsenal** (imazapyr) Used only for non-landscaped, non-park, intergovernmental contract sites for total vegetation control.

**DeMoss, Garden Safe Moss and Algae Killer, others** (fatty acids) Moss control desiccant. For structures and non-vegetated surfaces. Not typically used, but possible targeted use.

**Scythe** (pelargonic fatty acid) Minor use desiccant used for top-kill of early-stage, easily killed weeds.

**Milestone** (aminopyralid) Invasive broadleaf weed and woody plant control for natural areas.

### FUNGICIDES

**Microcop** (copper sulfate) **Copper soap** (copper octanoate) Possible use for high value plants. Typically not used but retained on approved list for use where other materials are not appropriate or different mode of action is required.

### INSECTICIDES and MITICIDES

Note pollinator protection guidelines.

**Aerosol Wasp Sprays** (pyrethroids only) Directed jet sprays used for individual wasp and hornet nest treatments posing health and safety threats to park users.

**Azatin XL** (azadirachtin) Neem tree extract used for insect growth regulating and anti-feeding effects. Typically not used, but retained for unusual, short term use where long term plant health is affected.

**Bacillus thuringiensis** Primarily for lepidopterous insects, although subspecies can be used for other targets. Insect control not usually done in general parks.

**Beneficial nematodes** Predatory nematodes for insect control treatments for susceptible targets where needed. Insect control not usually done in general parks.

**Conserve** (spinosad) Material derived from a bacterial fermentation, for specialty rose gardens. Minor use specialty product, typically not used.

**Floramite** (bifenazate) Miticide for use as part of a carefully implemented plan to keep mite levels at a non-injurious level in specialty rose gardens and special areas. Not typically used in general parks.

**Hexygon** (hexythiozox) Miticide, with ovacidal and larvacidal action used as part of a carefully implemented plan to keep mite levels at a non-injurious level in specialty rose gardens.

**M-Pede, Safer Insecticidal Soap, others** (soaps) General soft body insect control. Not typically used in general parks. Minor use material.

**Sunspray, others** (horticultural oils) General insect control both for dormant and growing season use. Not typically used in general parks. Minor use material.

**Tempo SC Ultra** (cyfluthrin) Contact product for specialty rose gardens or for special needs. Minor use material for potential rotational needs.



## CITY NATURE-HORTICULTURAL SERVICES APPROVED LIST cont.

### MISCELLANEOUS

**Agridex, Competitor, Syl-Tac, Phase, LI 700, others** (spray adjuvant-not a pesticide)

Surfactants used to enhance spray coverage and increase efficacy.

**Contra Blox** (bromadiolone) Rodent bait for use only under the parameters of Policy 15. Used by Public Health category licensed applicators only. Used only when placed in locked, tamper resistant bait boxes. Used only as part of an approved IPM approach for rat control in specific, non-interior locations.

**Deer-Off** (putrescent egg and capsaicin) Deer foliage repellent.

**Green Clean** (sodium carbonate peroxyhydrate) Algae control on surfaces in greenhouse and nursery.

**No Foam** (anti-foaming agent) Silicon based, reduces foaming, used in large agitated spray tanks.

**PT 2000** (quaternary ammonium chloride salts) Disinfectant for use in greenhouse and propagation.

**Slug baits, various** (metaldehyde) For nursery canyand areas susceptible to unacceptable damage. Not typically used, but retained on list for use if loss is unacceptable or for invasive species.

**Sluggo, Escargo** (iron phosphate) For specialty areas susceptible to unacceptable damage, such as in some annual flower beds. Not typically used, but retained on list for use if loss is unacceptable.

**Tanglefoot** (barrier product) Physical sticky barrier for crawling insect pests.

**Terro Ant Bait stations, others** (borax) Borax bait stations for problems ant nests.

**Turf Trax, Signal, others** (marker colorant) Used in spray solutions to mark area of application.

**Wasp/yellow jacket traps** (pheromone trap) Yellowjacket trap for certain areas. Not typically used, but retained on list for use if safety issues are created by wasp and yellow jacket presence.

**SPECIAL APPROVAL:** Requires manager/coordinator/policy approval prior to use.

**Arsenal** (imazapyr) Herbicide for evaluation purposes at Portland International Raceway and other non-landscaped, non-park areas only as per labeled site directives.

**Horsepower**(MCPA, triclopyr, dicamba) Selective weed control in turf. Used for turf renovation as part of overall IPM approach. Turf broadleaf herbicide use must be pre-approved per Turf Broadleaf Weed policy. Used very rarely, primarily for athletic field surface renovation. Not for general use on park turf.

**Spotlight** (fluroxypyr) Selective weed control in turf. Used for turf renovation as part of overall IPM approach. Turf broadleaf herbicide use must be pre-approved per Turf Broadleaf Weed policy. Used very rarely, primarily for athletic field surface renovation. Not for general use on park turf.

### Greenhouse production use only:

#### INSECTICIDES

**Distance** (pyriproxyfen) Insect growth regulator for greenhouse use only.

**Floramite SC** (bifenazate) Mite control for greenhouse use.

**Margosan-O** (azadirachtin) Contact product for greenhouse use.

**Orthene** (acephate) Systemic product for greenhouse use.

**Precision** (fenoxycarb) Insect growth regulator for greenhouse use only.

**Resmethrin EC 26** (resmethrin) Contact product for greenhouse use only.

**Talstar** (bifenthrin) Contact product for greenhouse use only.

#### FUNGICIDES

**Chipco 26019** (iprodione) For control of diseases in rotation for greenhouse use only.

**Domain** (thiophanate) For control of diseases in rotation for greenhouse use only.

## CITY NATURE- CENTRAL IPM AND ROSE IPM PROGRAM APPROVED LIST

Areas of pest management: specialty rose and botanic gardens, turf renovation, other specialized pest management needs in all park areas.

### HERBICIDES

#### Primary choices:

**Gallery 75 DF** (isoxaben) Used on shrub beds, tree circles, and other areas. Can be used in combination or rotation with oryzalin to broaden the spectrum of weeds prevented.

**Garlon 3A, 4 Ultra, Lilly Miller Brush and Vine**, (triclopyr) Selective products for woody and other difficult to control broadleaf weeds. For spray and cut-stem applications.

**Ranger Pro, Roundup Pro Concentrate, RU ProDry, Rodeo, Aquaneat, Aquamaster** (glyphosate) Primary vegetation control product used with other methods in shrub beds, tree circles, bare ground, and on invasive weeds.

**Surflan AS, WDG** (oryzalin) Used in nursery, shrub beds, tree circles, fence lines and other park areas for weed control. A primary liquid form preemergent product.

**XL 2G** (benfen+oryzalin) Combination product for wider spectrum weed control. Useful in sites where liquid products are more difficult to apply. This is a primary granular preemergent product.

#### Specialty uses:

**Arsenal** (imazapyr) Used only for non-landscaped, non-park, intergovernmental contract sites for total vegetation control.

**DeMoss, Garden Safe Moss and Algae Killer, others** (fatty acids) Moss control desiccant. For structures and non-vegetated surfaces. Not typically used, but possible targeted use.

**Fusilade II** (fluazifop) Trial use. Selective post emergent for invasive grass species in natural areas only.

**Scythe** (pelargonic fatty acid) Minor use desiccant used for top-kill of early-stage, easily killed weeds.

**Milestone, Milestone VM** (aminopyralid) Invasive broadleaf weed and woody plant control for natural areas.

**Milestone VM+, Capstone** (aminopyralid, triclopyr amine) Invasive broadleaf weed, woody plant, cut stump control for natural areas.

### FUNGICIDES

**Banner Maxx II, Fertlome Liquid Systemic Fungicide** (propiconazole) For control of diseases in rotation with other materials primarily in specialty rose gardens. Not typically used in general parks.

**Bayleton** (triadimefon) For control of diseases in rotation with other materials primarily in specialty rose gardens and special situations. Not typically used in general parks.

**Carbamate 75 WDG** (ferbam) For control of diseases in rotation with other materials primarily in specialty rose gardens. Not typically used in general parks.

**Clearys 3336** (thiophanate) For control of diseases in rotation with other materials primarily in greenhouse and specialty rose gardens. Not typically used in general parks.

**Compass** (trifloxystrobin) For control of diseases in rotation with other materials primarily in specialty rose gardens. Not typically used in general parks.

**Daconil** (chlorothalonil) For control of diseases in rotation with other materials primarily in specialty rose gardens, and special situations. Not typically used in general parks.

**Microcop** (copper sulfate) **Copper soap** (copper octanoate) Possible use for high value plants. Typically not used but retained on approved list for use where other materials are not appropriate or different mode of action is required.

**Norbac 84c** (Agrobacterium radiobacter) Beneficial bacteria for prevention of crown gall disease.

**Pageant** (pyraclostobin, boscalid) For disease control in rotation with other materials on specialty rose gardens.

**Subdue Maxx** (metalaxyl) For control of diseases primarily in special situations. Not typically used.

**Sythane** (myclobutanil) For control of certain diseases, initial use for Rhod. powdery mildew control. Not typically used.

## CITY NATURE- CENTRAL IPM AND ROSE IPM PROGRAM APPROVED LIST

**Zyban WP** (thiophanate methyl, + zinc and maneb) For control of diseases in rotation with other materials primarily in specialty rose gardens. Not typically used in general parks.

### INSECTICIDES and MITICIDES

Note pollinator protection guidelines.

**Acelepryn** (chlorantraniliprole) Specialty use product for unacceptable insect damage in high value plantings. Also trial use for rose midge management.

**Aerosol Wasp Sprays** (pyrethroids only) Directed jet sprays used for individual wasp and hornet nest treatments posing health and safety threats to park users.

**Avid 1.5 EC** (abamectin) Miticide for use as part of a carefully implemented plan to keep mite levels at a non-injurious level in specialty rose gardens, greenhouse. Not typically used in general parks.

**Azatin XL** (azadirachtin) Neem tree extract used for insect growth regulating and anti-feeding effects. Typically not used, but retained for unusual, short term use where long term plant health is affected.

**Bacillus thuringiensis** Primarily for lepidopterous insects, although subspecies can be used for other targets. Insect control not usually done in general parks.

**Beneficial nematodes** Predatory nematodes for insect control treatments for susceptible targets where needed. Insect control not usually done in general parks.

**Conserve** (spinosad) Material derived from a bacterial fermentation, for specialty rose gardens. Minor use specialty product, typically not used.

**Distance** (pyriproxyfen) Insect growth regulator for rose midge management trial use.

**Floramite** (bifenazate) Miticide for use as part of a carefully implemented plan to keep mite levels at a non-injurious level in specialty rose gardens and special areas. Not typically used in general parks.

**Hexygon** (hexythiozox) Miticide, with ovacidal and larvacidal action used as part of a carefully implemented plan to keep mite levels at a non-injurious level in specialty rose gardens.

**M-Pede, Safer Insecticidal Soap, others** (soaps) General soft body insect control. Not typically used in general parks. Minor use material.

**Sunspray, others** (horticultural oils) General insect control both for dormant and growing season use. Not typically used in general parks. Minor use material.

**Tempo SC Ultra** (cyfluthrin) Contact product for specialty rose gardens or for special needs. Minor use material for potential rotational needs.

### MISCELLANEOUS

**Agridex, Competitor, Syl-Tac, Phase, LI 700, others** (spray adjuvant-not a pesticide)

Surfactants used to enhance spray coverage and increase efficacy.

**Aquashade** (acid blue 9, acid yellow 23) Blue colorant used to suppress algae growth in certain ponds in developed parks and golf courses.

**Contrac Blox** (bromadiolone) Rodent bait for use only under the parameters of Policy 15. Used by Public Health category licensed applicators only. Used only when placed in locked, tamper resistant bait boxes. Used only as part of an approved IPM approach for rat control in specific, non-interior locations.

**Deer-Off** (putrescent egg and capsaicin) Deer foliage repellent.

**No Foam** (anti-foaming agent) Silicon based, reduces foaming, used in large agitated spray tanks.

**Sluggo, Escargo** (iron phosphate) For specialty areas susceptible to unacceptable damage, such as in some annual flower beds. Not typically used, but retained on list for use if loss is unacceptable.

**Tanglefoot** (barrier product) Physical sticky barrier for crawling insect pests.

**Terro Ant Bait stations, others** (borax) Borax bait stations for problems ant nests.

**Turf Trax, Signal, others** (marker colorant) Used in spray solutions to temporarily mark area of application.

**Wasp/yellow jacket traps** (pheromone trap) Yellowjacket trap for certain areas. Not typically used, but retained on list for use if safety issues are created by wasp and yellow jacket presence.

## **CITY NATURE- CENTRAL IPM AND ROSE IPM PROGRAM APPROVED LIST (cont.)**

**SPECIAL APPROVAL:** Requires manager/coordinator/policy approval prior to use.

**Arsenal** (imazapyr) Herbicide for evaluation purposes at Portland International Raceway and other non-landscaped, non-park areas only as per labeled site directives.

**Cutrine Plus** (chelated elemental copper) Used only within approved framework for noxious invasive weeds and algae as part of weed management strategy specific to site as outlined in Waterways Policy, as in contained bodies of water. Highly restricted use for unusual circumstances.

**Merit, Mallet etc.** (imidacloprid) Product used for soil stage rose midge control. Highly restricted uses only, to protect pollinators. See Neonicotinoid policy and City Council Ordinance 187078 and consult with IPM coordinator for acceptable uses.

**Horsepower**(MCPA,triclopyr,dicamba) Selective weed control in turf. Used for turf renovation as part of overall IPM approach. Turf broadleaf herbicide use must be pre-approved per Turf Broadleaf Weed policy. Used very rarely, primarily for athletic field surface renovation. Not for general use on park turf.

**Sonar AS** (fluridone) For control of noxious invasive weeds threatening the health of an aquatic system. Used as part of approved overall weed management plan specific to site; potential sites and uses outlined in Waterways Policy. Minor to zero use material retained on list for specific situations.

**Spotlight** (fluroxypyr) Selective weed control in turf. Used for turf renovation as part of overall IPM approach. Turf broadleaf herbicide use must be pre-approved per Turf Broadleaf Weed policy. Used very rarely, primarily for athletic field surface renovation. Not for general use on park turf.

## GOLF COURSES APPROVED LIST

Areas of pest management: Five PP&R municipal golf courses.

### FUNGICIDES

All golf course fungicide use is focused on greens, not fairways or rough. All fungicide products are used to target various green diseases, and are used in rotation to reduce resistance issues.

Fungicide materials for Golf Courses are listed by active ingredient with an example of an approved product. Equivalent products must be similar to example product in ingredient strength and the same or lower in signal words.

**propiconazole** - Banner Maxx II or equivalent

**triadimefon** - Bayleton, Andersons VII

**thiophanate methyl** - Clearys 3336, Fungo Flo, Sc. Systemic, Systec 1998 or equivalent

**trifloxystrobin** - Compass or equivalent

**chlorothalonil** - Daconil or equivalent

**mancozeb** - Dithane, Fore or equivalent

**polyoxin D zinc salt** - Endorse or equivalent

**azoxystrobin** - Heritage or equivalent

**pyraclostrobin + boscolid** - Honor (or equivalent combination product only)

**pyraclostrobin** - Insignia or equivalent

**fludioxonil** - Medallion or equivalent

**PCNB** - Penstar Flo, Proscap+PCNB, FFII, TeeTime or equivalent

**flutolanil** - Prostar

**thiophanate methyl+iprodione** - Andersons Fluid Fungicide, Andersons VIII or equivalent

**triadimefon+metalaxyl** - Andersons Fluid Fung. II or equivalent

**chloroneb** - Andersons V, Tersan or equivalent

**metalaxyl** - Subdue Maxx or equivalent

**chloroneb+thiophanate methyl** - Andersons IX or equivalent

**iprodione** - Andersons X, Chipco 26019 or equivalent

**cyazofamid** - Segway or equivalent

**triticonazole** - Trinity or equivalent

**mineral oil** - Civitas or equivalent

### INSECTICIDES

**Aerosol Wasp Sprays** (pyrethroids only) Directed jet sprays used for individual wasp and hornet nest treatments posing health and safety threats to park users.

**Azatin XL** (azadirachtin) Neem tree extract product used for control through growth regulating and anti-feeding effects. Specialty use product for unacceptable insect damage in turf.

**Maxforce Fine Granule Insect Bait** (hyramethylnon) For spot use on golf green ant control only.

**Terro Ant Bait stations, others** (borax) Borax bait stations for problems ant nests.

### HERBICIDES

**Primary choices:**

**Garlon 3A, Lilly Miller Brush and Vine**, (triclopyr amine) Selective products for woody and other difficult to control broadleaf weeds. For spray and cut-stem applications.

**Ranger Pro, Roundup Pro Concentrate, RU ProDry, Rodeo, Aquaneat, Aquamaster** (glyphosate) Primary vegetation control product used with other methods in shrub beds, tree circles, bare ground, and on invasive weeds.

**Scythe** (pelargonic fatty acid) Minor use contact herbicide used for top-kill of easily controlled weeds.

**Surflan AS, WDG** (oryzalin) Used in shrub beds, tree circles, fence lines and other areas for preemergent weed control.

## **GOLF COURSES APPROVED LIST (cont.)**

**XL 2G** (benefin+oryzalin) Combination product for wider spectrum weed control. Useful in sites where liquid products are more difficult to apply. This is a primary granular preemergent product.

### **MISCELLANEOUS**

**Agridex, Competitor, Syl-Tac, Phase, LI 700, others** (spray adjuvant-not a pesticide)

Surfactants used to enhance spray coverage and increase efficacy.

**Deer-Off** (putrescent egg and capsaicin) Deer foliage repellent.

**Dragonfire CPP** (sesame oil) For nematode control.

**No Foam** (anti-foaming agent) Silicon based, reduces foaming, used in large agitated spray tanks.

**Primo Maxx** (trinexapac-ethyl) Trial use turf growth regulator at Heron Lakes.

**Sluggo, Escargo** (iron phosphate) For specialty areas susceptible to unacceptable damage, such as in some annual flower beds. Not typically used, but retained on list for use if loss is unacceptable.

**Turf Enhancer 2SC, Trimit 2SC, Teetime w/TGR** (paclobutrazol) Growth regulator for control of *Poa annua* on bentgrass greens.

**Turf Trax, Signal, others** (marker colorant) Used in spray solutions to temporarily mark area of application.

**SPECIAL USE PRODUCTS:** Requires Golf Manager/Coordinator/policy approval prior to use.

**Acelepryn** (chlorantraniliprole) Specialty use product for unacceptable insect damage in turf.

**Aquashade** (acid blue 9, acid yellow 23) Blue colorant used to suppress algae growth in certain ponds in developed parks and golf courses. Use only as allowed in Waterways Policy.

**Confront** (triclopyr+clopyralid) Broadleaf weed control in fairways as per Turf Weed Control policy.

**Citrine Plus** (chelated elemental copper) Aquatic algae control. Used only within approved framework for noxious invasive weeds and algae as part of weed management strategy specific to site as outlined in Waterways Policy, as in contained bodies of water. Highly restricted use for unusual circumstances.

**Horsepower**(MCPA, triclopyr, dicamba) Broadleaf weed control in fairways as per Turf Weed Control policy.

**Sapphire** (penoxsulam) Primarily for English lawn daisy control as per Turf Weed Control policy.

**Spotlight** (fluroxypyr) Broadleaf weed control in fairways as per Turf Weed Control policy

## CITY NATURE-NATURAL AREAS APPROVED LIST

Areas of pest management: natural area parks, e.g. Forest Park, and natural areas of “hybrid” parks; e.g. portions of Gabriel Park. Also includes Hoyt Arboretum; see subset list below.

### INSECTICIDES

**Aerosol Wasp Sprays** (pyrethroids only) Directed jet sprays used for individual wasp and hornet nest treatments posing health and safety threats to park or natural area users.

### HERBICIDES

**Fusilade II** (fluzifop) Trial use. Selective post emergent for invasive grass species in natural areas only.

**Garlon 3A, Garlon 4 Ultra** (triclopyr) Selective products for woody, difficult to control perennials. Used both in spray and cut-stem applications, also for invasives and habitat restoration.

**Ranger Pro, Roundup Pro Concentrate, RU ProDry, Rodeo, Aquaneat, Aquamaster** (glyphosate) Primary vegetation control product used with other methods in shrub beds, tree circles, bare ground, and on invasive weeds.

**Surflan AS** (oryzalin) Used in some shrub beds, tree circles, and potentially in restoration.

**Milestone, Milestone VM** (aminopyralid) Invasive broadleaf weed and woody plant control for natural areas.

**Milestone VM+, Capstone** (aminopyralid, triclopyr amine) Invasive broadleaf weed, woody plant, cut stump control for natural areas.

### MISCELLANEOUS

**Agridex, Competitor, SylTac, Phase, LI 700, others** (spray adjuvant-not a pesticide) Surfactants used to enhance spray coverage and increase efficacy.

**Deer-Off** (putrescent egg and capsaicin) Deer foliage repellent.

**No Foam** (anti-foaming agent) Silicon based, reduces foaming, used in large agitated spray tanks.

**Turf Trax, Signal, others** (marker colorant) Used to temporarily mark area of application.

**Terro Ant Bait stations, others** (borax) Borax bait stations for problems ant nests.

**Wasp/yellow jacket traps** (pheromone trap) Yellowjacket trap for certain areas. Not typically used.

**Hoyt Arboretum Only:** (Hoyt Arboretum is approved for the list below in addition to the regular City Nature-Natural Areas approved list.)

### INSECTICIDES

**Note pollinator protection guidelines.**

**Azatin XL** (azadirachtin) Neem tree extract used for insect growth regulating and anti-feeding effects. Typically not used, but retained for unusual, short term use where long term plant health is affected.

**Bacillus thuringiensis** Primarily for lepidopterous insects, although subspecies can be used for other targets. Typically not used, but retained for unusual, short term use where long term plant health is affected.

**Beneficial nematodes** Predatory nematodes for susceptible targets where needed. Typically not used, but retained for unusual, short term use where long term plant health is affected.

**M-Pede, Safer Insecticidal Soap, others** (soaps) General soft body insect control. Typically not used, but retained for unusual, short term use where long term plant health is affected.

**Sunspray, others** (horticultural oils) General insect control both for dormant and growing season use. Typically not used, but retained for unusual, short term use where long term plant health is affected.

**Terro Pantry Moth traps** (pheromones) For use in herbarium collection areas.

## **FUNGICIDES**

**Fertilome Liquid Systemic Fungicide** (propiconazole) For control of diseases in rotation with other materials in special situations in high value plants or specialty plantings. Not typically used.

**Microcop** (copper sulfate) For control of diseases in rotation with other materials in special situations in high value plants or specialty plantings. Not typically used.

## **HERBICIDES**

**XL 2G** (benefin+oryzalin) Combination product for wider spectrum weed control. Useful in sites where liquid products are more difficult to apply. This is a primary granular preemergent product.

## **USE UP AND DO NOT RESTOCK (UUDNR) LIST**

The listed materials are to be used until remaining stocks are gone and are not to be restocked.

### Material

Manage (halosulfuron methyl)

### Unit approved for UUDNR

Service Zones



**Appendix 2**

Portland Parks and Recreation / Urban Forestry Pest Management Program      Equipment \_\_\_\_\_  
 10910 N Denver, Portland, Oregon 97217      503-823-4489

Supervisor \_\_\_\_\_

Applicator \_\_\_\_\_ / \_\_\_\_\_ Material(s) \_\_\_\_\_ (in container)

Helper \_\_\_\_\_ Manufacturer(s) \_\_\_\_\_

Helper \_\_\_\_\_ Mix \_\_\_\_\_

Helper \_\_\_\_\_ Weather \_\_\_\_\_ Pesticide \_\_\_\_\_

DATE POSTED	DATE SPRAYED	TIME IN/TIME OUT	Gallons applied	LOCATION PARK OR ADDRESS	SPECIFIC AREA/TREES TREATED	PEST CONTROLLED	AMOUNT APPLIED

Nursery Use Only : Re-entry interval \_\_\_\_\_ Do not enter until \_\_\_\_\_ Carrier is water unless noted





**PORTLAND PARKS & RECREATION**

Healthy Parks, Healthy Portland



To: \_\_\_\_\_

Date: \_\_\_\_\_

Of: \_\_\_\_\_  
(name of organization)

From : \_\_\_\_\_  
Portland Parks and Recreation  
6437 SE Division  
Portland, OR 97206

Hello!

To keep public landscapes in your area useful and enjoyable, Portland Parks and Recreation will be applying approved herbicides products to control weeds in park land adjacent to your property. The materials to be used have been carefully selected on the basis of low toxicity and environmental impact and will be applied by a trained, licensed, state certified applicator.

You will receive a phone call prior to applications being made in your vicinity to make you aware of specific dates and locations. Please look for our notification signs to tell you that an application is taking place, or will be taking place soon. Please restrict activities in the area of application until the applied materials have dried and the signs have been removed.

If you wish more information please call:

(name) \_\_\_\_\_ (phone) \_\_\_\_\_

or call John Reed, Pest Management Program Coordinator, 823-1991.

**City Nature- IPM Program**  
6437 S.E. Division St.  
Portland, OR 97206  
Tel: (503) 823-1991 Fax: (503) 823-2246

**Administration**  
1120 S.W. 5th Ave., Suite 1302  
Portland, OR 97204  
Tel: (503) 823-7529 Fax: (503) 823-6007

*Sustaining a healthy park and recreation system to make Portland a great place to live, work and play.*  
www.PortlandParks.org • Nick Fish, Commissioner • Mike Abbaté, Director



## APPLICATION FOR PESTICIDE USE ON PP&R PROPERTY

business or organization		commercial operator license number:	
address		applicator(s) name(s) and license number(s):	
city	state	zip	
phone	fax		
contact individual(s)			
name/address of park or site:	specific area treated (attach map):	area treated (sq.ft etc.):	date(s) of application:
Purpose of application:			
Method of treatment: include pesticide formulations, dilutions, and type of equipment used:			
Treatment notification procedures: describe signage, fencing, or other public notification plans:			
Does any part of application take place within an aquatic site, or within 25 feet of a body of water? if so, describe:			

**NOTE: PESTICIDE APPLICATION RECORDS MUST BE SUBMITTED TO PP&R WITHIN 48 HOURS AFTER AN APPLICATION**

Submit to:  
**Portland Parks and Recreation**  
**Attention: John Reed**  
**6437 SE Division**  
**Portland, OR 97206**  
 John.Reed@portlandoregon.gov  
 503-823-1991



**PORTLAND PARKS  
& RECREATION**

**APPENDIX 5**

This application is: APPROVED  DENIED   
 with the following stipulations/explanation: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ by: \_\_\_\_\_



**Turf Broadleaf Weed Herbicide Application Approval Request**

Requester name: \_\_\_\_\_ Work Unit: \_\_\_\_\_ Park or site name: \_\_\_\_\_  
Specific area to be treated: \_\_\_\_\_

**Management**

State reason for application. Include all applicable turf IPM methods that have and will be used on site:

Weeds to be controlled:

Estimated percentage of weed coverage in turf:

Herbicide(s) to be used: \_\_\_\_\_ Application rate: \_\_\_\_\_

**Timing of application**

Expected date(s) of application: \_\_\_\_\_

Expected time interval needed for application: \_\_\_\_\_ hours

Expected start of application at: \_\_\_\_\_:\_\_\_\_ Complete application at \_\_\_\_\_:\_\_\_\_

Expected post application time interval until re-entry is allowed: \_\_\_\_\_ hours.

**Site and scheduling considerations**

List nearby schools, community centers, dog OLAs, playgrounds and other considerations:

State any potential conflicts with this scheduling:

**Notification**

List all contact persons needed for notification, such as community center, schools etc.:

Describe planned notification signage for site:

Describe on- site notification personnel and locations planned for application:

**Drift**

What herbicide drift precautions will be taken?:

Approved by Supervisor for Work Unit (see Policy) \_\_\_\_\_

Date: \_\_\_\_\_

## **Insecticide Use and Pollinator Protection**

Pollinators, including bees and other insects, play a vital function in both agricultural and natural systems. Their conservation is an important element in the PP&R IPM program. Use of any insecticide in the landscape has the potential to impact pollinators in both direct and indirect ways, therefore great care must be taken when considering the use of any insecticide. In most cases, insects do not threaten the long term health or viability of park turf, trees and shrubs and do not require active management. This appendix provides a process to begin to determine if an insect pest should be managed, and if so, what method or material is the most responsible choice. Do not embark on any insect management activity without following this process. Any significant insect management activity should be a collaborative and informed process with involvement from park supervisory personnel and the IPM coordinator.

### **Insect management decision making elements:**

#### **A. Assess insect impact and significance**

The significance of problematic insect impacts must be determined before active management is considered. PP&R's primary IPM approach to insect management is to tolerate the presence of the insect where possible. The vast majority of insect infestations do not threaten the long term health or viability of park trees and shrubs. Many are simple nuisance infestations, or cause only marginal harm. Others may present only short term impacts or are merely unsightly. These kinds of insect problems do not threaten the intended function of the green asset to a significant degree. Examples include transient aphid infestations on trees such as *Betula*, *Tilia*, and *Liriodendron*, or leafhoppers on shrubs. The proper IPM approach for these pests is tolerance of the pest, or replacement of the plant with a non-susceptible plant when possible. Therefore in these instances, insecticide use is not warranted.

Insecticide use can be considered for pests that present significant risks to the long term viability or essential function of important plant assets. They can also be considered for use in the case of insects that threaten the health and safety of park users. These instances are expected to be rare although PP&R response may need to be rapid and effective. One example is for Rose midge insect management in rose gardens which, if left unchecked, can decimate floral displays. Another is in the response to the potential introduction of certain highly destructive invasive insects, such as the Emerald ash borer, Japanese beetle, and Asian longhorn beetle. And the presence of venomous insects in frequented public areas may require intervention (see Policy 21). Although these serious pests may warrant use of insecticides, the manner in which these insecticides are chosen and employed must adhere to the careful pollinator stewardship practices detailed within this policy.

#### **B. Evaluate all IPM methods and materials**

If insect control interventions are determined to be required, insecticides may still not be the best choice. All IPM approaches must first be evaluated for suitability. These include:

1. Planning/Design: Where feasible, eliminate the problematic plants and replace them with naturally resistant plants. If a plant is unsuitable for the conditions at a particular

site, it may increase its susceptibility to a specific insect problem. The best long term IPM approach is to employ plants suited to the existing growing conditions.

2. Cultural: Cultural practices that either improve the growing conditions or are protective of the planting can be important elements in the management of some kinds of insects.
3. Physical: Various physical approaches such as the use of barriers are generally minimal in impact to non-targets and may offer adequate control of certain pests.
4. Biological: For certain insect pests, a reliance on biological controls may be possible. Where feasible, this can offer the ideal long term solution to pest problems. Special attention to good stewardship of naturally occurring insect predators should be made. There are also instances where commercially reared insect predators can be released to combat a specific pest.
5. Natural and synthetically derived insecticides: Insecticides can be part of an IPM approach but careful attention must be made in choice and use. In general, the least ecologically disruptive and lowest risk materials should be favored but the full complexity of IPM assessment rationale must be considered before choice and use. These considerations include but are not limited to:

- a. Potential safety and health risks of the product as it will be applied, both in the short and long term.
- b. Potential environmental risks, including risks to non-target organisms including bees and pollinators.
- c. Potential disruption of the landscape, garden, natural area, and urban forest ecosystems including impacts on natural insect predators.
- d. Individual insecticide characteristics such as toxicity, persistence, bioavailability, break down products, volatility, inert ingredients, and environmental movement.
- e. Differing application methods, such as injections, sprays, and drenches.
- f. Efficacy of the insecticide, and the need for repeated treatments.
- g. Feasibility of use to address a specific pest.

All of the above considerations require substantial understanding of pesticide characteristics and their potential interactions. Consult with the IPM coordinator to ensure all appropriate information has been included in the management plan.

## **Appendix 7**

**Appendix 8**  
**Application to apply weed and algae controlling pesticides to waterways  
and their margins on Portland Parks and Recreation property**

Submission date: \_\_\_\_\_ Applicant name: \_\_\_\_\_

Governmental body: P&RR \_\_\_\_ Other: \_\_\_\_\_

Work Unit: \_\_\_\_\_ Email: \_\_\_\_\_ Phone: \_\_\_\_\_

Park to be treated: \_\_\_\_\_ Date(s) of expected treatment(s): \_\_\_\_\_

Description of treatment area: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Application to water: Total surface area of water body to be treated: \_\_\_\_\_

Application to waterway margins (emergent and marginal weeds): Total linear miles of treatment: \_\_\_\_\_

\_\_\_\_\_

Pesticide materials (including adjuvants) to be applied: \_\_\_\_\_

\_\_\_\_\_

Pesticide concentration applied: \_\_\_\_\_ Expected application frequency: \_\_\_\_\_

Target weed(s): \_\_\_\_\_

Reasons for application: \_\_\_\_\_

\_\_\_\_\_

IPM considerations- Outline IPM measures considered for this project, using the DEQ NPDES permit, page 12, section 4 as a template. These include considerations for: reducing impacts to non-targets, action threshold establishment, alternative pest management options, applicable preventative measures taken, etc.:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_ Approved/denied/more information needed:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**Follow up requirements for NPDES permit areas  
(in addition to regular Pesticide Application Record keeping)**

Work Unit: \_\_\_\_\_ Park treated \_\_\_\_\_

Date(s) actually treated: \_\_\_\_\_

Description of treatment area if different from original description \_\_\_\_\_

\_\_\_\_\_

Application to water: Total surface area of water body treated: \_\_\_\_\_

Application to waterway margins (emergent and marginal weeds): Total linear miles of treated \_\_\_\_\_

\_\_\_\_\_

Pesticide materials (including adjuvants) applied if different from original description \_\_\_\_\_

\_\_\_\_\_

Pesticide concentration as applied \_\_\_\_\_ Actual application frequency \_\_\_\_\_

Target weed(s) if different from original description \_\_\_\_\_

Did you note any adverse incidents as described on page three of the NPDES General Permit?  
Adverse effects may include: Distressed or dead juvenile and small fishes: Washed up or floating fish; Fish swimming abnormally or erratically; Fish lying lethargically at water surface or in shallow water; Fish that are listless or nonresponsive to disturbance; Stunting, wilting, or desiccation of non-target submerged or emergent aquatic plants; Other dead or visibly distressed non-target aquatic organisms (amphibians, turtles, invertebrates, etc.) Any adverse effects to humans (e.g., skin rashes), or animals that occur either from direct contact with or as a secondary effect (e.g., sickness from consumption of plants or animals containing pesticides)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Applicators must retain this completed form for a minimum of 3 years. Submit a copy of this completed form to the IPM Coordinator, 416/John Reed, by the end of the calendar year.

**Appendix 8**

## CONTACT PHONE NUMBERS

### Emergency Phone Numbers

Fire, Ambulance, HAZMAT	911
For Medical Emergencies & Immediate Health Concerns:	
Oregon Poison Center- 24 hours Daily- Portland Area	503-494-8968
Outside Portland Area	1-800-222-1222
DEQ Northwest Regional Office	503-229-4263
Horticultural Services Communication Center	503-823-1636
Oregon Emergency Response System	1-800-452-0311
National Response Center	1-800-424-8802
CHEMTREK: an industry emergency spill information service	1-800-424-9300
PP&R Program Coordinator number: (emergencies only)	503-823-8906

### Informational Phone Numbers

PP&R Pest Management Program Coordinator	503-823-1991
The City Nature Unit of Portland Parks and Recreation maintains this program. Inquiries regarding this program and its policies can be directed to this number, or e-mailed to <a href="mailto:John.Reed@portlandoregon.gov">John.Reed@portlandoregon.gov</a>	
NPIC - National Pesticide Information Center	1-800-858-7378
Provides general information on pesticide products, including safety, health, environmental effects, clean up and disposal. 6:30 am - 4:30 PM PDT 7 days a week excluding holidays	
Oregon Department of Agriculture	503-986-4635
Provides information on pesticide products and registration, conducts pesticide use investigations, and applicator licensing and certification. Weekdays 8:00 AM - 5:00 PM.	
To Report Pesticide Exposures:	
Pesticide Analytical and Response Center (PARC)	503-731-4025
Provides confidential investigations, consults with health care providers and provides clean up and exposure prevention information. Weekdays 8:00 AM - 5:00 PM.	

## Appendix 9