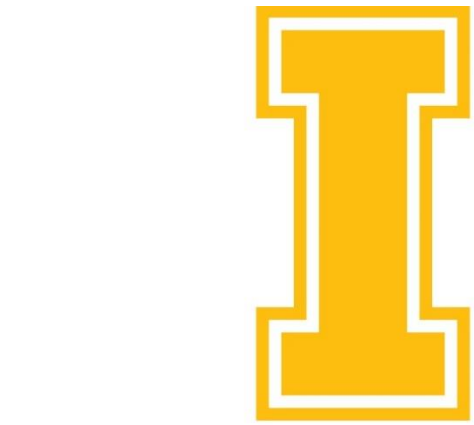

University of Idaho

LANDSCAPE INTEGRATED PEST & POLLINATOR MANAGEMENT PLAN

DECEMBER 2023

Contents

Definitions

Bee Campus USA – An online certification program that provides a framework for university and college campus communities to work together to conserve native pollinators by increasing the abundance of native plants, providing nest sites, and reducing the use of pesticides.

Integrated Pest Management – An Integrated Pest Management Program (IPM) is an ecosystem-based management strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as mechanical control, biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only on targeted species as a "last resort" and as minimally as possible to reach the desired goal. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and nontarget organisms, and the environment.

Landscape IPPM Administrator – The Landscape IPPM administrator will be appointed by the U of I Bee Campus Committee and may be considered the "working arm" of the committee. This individual will have multiple responsibilities related to the implementation of this plan.

Pest – Pests are organisms that damage or interfere with desirable plants in our fields and orchards, landscapes, or wildlands, or damage homes or other structures. Pests also include organisms that impact human or animal health. Pests may transmit disease or may be just a nuisance. A pest can be a plant (weed), vertebrate (bird, rodent, or other mammal), invertebrate (insect, tick, mite, or snail), nematode, pathogen (bacteria, virus, or fungus) that causes disease, or other unwanted organism that may harm water quality, animal life, or other parts of the ecosystem.

Pesticide – Any substance, or mixture of substances, used for defoliating plants, regulating plant growth, or for preventing, destroying, repelling, or mitigating any pest, which may be detrimental to vegetation, humans, or animals.

Pollinator - An insect or other agent that conveys pollen to a plant and so allows fertilization.

Introduction

The University of Idaho is committed to bettering the campus landscape for local, native pollinator health. We recognize that historically pest control actions have had significant adverse effects on pollinator populations. As a Bee Campus USA certified organization, we have chosen to expressly integrate pollinator management into our Integrated Pest Management Plan, hence the document title of Integrated Pest & Pollinator Management Plan (IPPM). Throughout this document the acronym IPPM will be used when referring to this document, and the acronym IPM will be used when referring to the IPM process. Additionally, hyperlinks are utilized throughout this document to link to relevant resources in lieu of including appendices. For the time being, this document is only intended to govern actions relating to landscape management on the main University of Idaho campus in Moscow, Idaho.

Goals

The goals of the IPPM program at U of I are to:

1. Protect human and environmental health by employing a range of preventative strategies and using least-toxic products and methods for pest control and eradication.
2. Inspect and monitor pest populations and locations to enhance control strategies.
3. Protect and enhance pollinator populations on campus using integrated pest management practices including the selection and applications of pesticides that are the least toxic to pollinators.

Process

IPM involves integrating multiple pest control methods based on characteristics of the pest and site. While each situation is different, six major components are common to all IPM programs:

1. **Prevention** – With IPM, the best offense is a good defense. Actions are taken to keep pests from becoming a problem, such as:

    a. Maintaining a healthy landscape that can withstand pest attacks.
    b. Using disease and insect-resistant plants and certified weed-free seed sources.
    c. Using native plants that are adapted to localized environmental conditions such as those found in the University's Native Plants Guide.
    d. Removing conditions that attract pests, such as food, water, and shelter.
    e. Using appropriate irrigation and fertilization practices.
    f. Maintaining mowing, mulching, and pruning best practices.

2. **Pest Identification** – Correctly identifying the pest is key to knowing whether a pest is likely to become a problem and determining the best management strategy. Accurate identification is necessary to make the appropriate decisions. Mobile applications such as

Seek, Picture This, and Picture Insect can be used for general plant and insect identification, and are especially useful when cross referenced against the host plant. If, after utilizing apps and online resources, the identity of a pest is still unclear, The University of Idaho Extension office has a list of Contacts by Specialty that can be reached out to through the Integrated Pest Management Center.

3. **Monitoring and Assessing Pest Numbers and Damage** Routinely check the campus landscape, or other sites to identify what pests and beneficial organisms are present, numbers of each and how extensive the pest damage is.

4. **Acceptable Pest Levels** – Different areas on campus will have different action thresholds based on the functional use classification of the affected area and the pest in question. For example, places of pride such as the Administration Lawn and/or places utilized for sports practice such as Guy Wicks' Field will have different action thresholds for dandelions and thistles than more naturalized and/or less utilized areas such as the Water Tower Hill. Similarly, pests that pose a danger to human health and safety and/or species recognized by the state as noxious weeds will be more likely to warrant the use of pesticides. Action thresholds will be determined on a case by case basis as the site is assessed.

   If action must be taken after site assessment, the emphasis will be on management not eradication. This IPPM plan contends that managing pest populations is a more sustainable approach to pest management.

   For any instance where it is determined that action must be taken and the potential treatments may pose a threat to beneficial pollinator populations on campus such as the application of neonicotinoids (see section addressing neonicotinoid use below), the action must first be approved by the U of I Bee Campus Committee prior to implementation.

5. **Control** – Approaches for managing pests are often grouped in the following categories:

   a. **Cultural Control**: Cultural controls are practices that reduce pest establishment, reproduction, dispersal, and survival. For example, changing irrigation practices can reduce pest problems, since too much water can increase root disease and weeds.

   b. **Biological Control**: Biological control is the use of natural enemies — predators, parasites, pathogens, and competitors to control pests and their damage. Invertebrates, plant pathogens, nematodes, weeds, and vertebrates have many natural enemies.

   c. **Mechanical and Physical Control**: Mechanical and physical controls kill a pest directly, block pests out, or make the environment unsuitable. Physical controls

include mulches for weed management, steam sterilization of the soil for disease management, cold treatments or barriers such as screens to keep birds or insects out, and weeding by hand.

d. **Chemical Control**: Chemical control is the use of pesticides. Pesticides should be used judiciously, always following the pesticide label. Many times, pesticides are most effective when used in combination with other approaches for more effective, long-term control. In each case, managers should use the best available science to select the least-toxic pesticide appropriate for use in the situation and best management practices should be utilized during application. University of Idaho employees who apply pesticides should have the appropriate professional pesticide applicator licensing credentials.

   It is critical to take uninterrupted and undisturbed time to thoroughly read pesticide labels. Pollinator protection statements on the label should assist in pesticide selection and application timing decisions. Most bee poisoning incidents occur when:

   1. Highly toxic (to bees) insecticides are applied
   2. The extended residual toxicity of the product is longer than 8 hours
   3. Insecticides are applied to bee-pollinated plants during bloom

   Resources available to help avoid pesticides that are particularly toxic to bees, as well as to help select least toxic pesticides, include the Pesticide Toxicity to Bees "Traffic Light" and the UC IPM Bee Precaution Pesticide Ratings webpage. Information on residual toxicity times can be found on the EPAs Residual Time to 25% Bee Mortality (RT25) Data webpage.

SPECIAL STATEMENT REGARDING THE USE OF NEONICOTINOIDS:

Neonicotinoids are a group of insecticides that are chemically related to nicotine including acetamiprid, clothianidin, dinotefuran, imidacloprid, and thiamethoxam. Neonicotinoids are widely used on a variety of crops, turf, ornamentals, and pets (for flea treatment). While neonicotinoids are highly effective, it has been shown that these insecticides, when used inappropriately can adversely affect pollinators.

All neonicotinoid use on campus must first be approved by the U of I Bee Campus Committee, who will work together to determine the appropriate action threshold for the situation at hand and consider factors such as whether or not pollinators will be present during the residual toxicity period.

6. **Assessment of the Pest Management Plan** –A fundamental practice of IPM is a strong commitment to the continued evaluation of the plan. Focuses include proper training, up to date applicator licensing and continued educational opportunities. All pest control

activity, including inspections, will be recorded in the IPM Tracking Form. The overall responsible party will record each pest in the IPM Tracking Form. The Spray Technician will record the applicable items from each site visit in the IPM Tracking Form. All pesticide applications will be recorded, as required by state law. On an annual basis, performance will be evaluated against the goals specified above by the Landscape IPPM Administrator and presented to the Bee Campus Committee. This is a living document - if the goals are not being met, adjustments will be made to this plan in order to facilitate goal achievement.

Education

The University of Idaho, as a land-grant university, recognizes the value of making decisions and taking action based on the best currently available science. As such, U of I is committed to providing educational opportunities to stakeholders associated with this IPPM plan. The Landscape IPPM Administrator and all employees who will be applying pesticides on the campus landscape shall be required to hold a professional pesticide applicators license issued by the Idaho State Department of Agriculture.

Additionally, areas that are experiencing less pesticide use and/or areas that have been improved for pollinator habitat may be less conventionally attractive at certain times of year when viewed through a purely landscaping lens. U of I will provide learning opportunities and interpretive signage to help educate students, staff, faculty, and the public about the reason for these changes to the landscape.