

## **Integrated Pest Management (IPM) Plan Checklist**

Bee City USA and Bee Campus USA affiliates are required to have an Integrated Pest Management (IPM) Plan within the first few years of their initial certification. We don't expect every plan to have every element listed here, and we recognize that it can take years to slowly build up an IPM program. A good IPM plan will change over time, and does not just sit on a shelf. Our IPM guidance is focused on outdoor landscapes, but IPM plans can be comprehensive and cover all portions of a city/campus, from outdoor to indoor/structural pest management, and often also focus on human health and safety.

### **Strong IPM plans combine three components:**

1. Preventing harmful pest levels,
2. Monitoring for pests, and
3. Limiting harm from pesticide use and other actions.

Bee Cities and Bee Campuses' IPM plans should include these three aspects. Below is a checklist of IPM elements and practices that an ideal plan would contain.

### Main IPM Plan Elements

- The IPM plan should be written by an IPM administrator, with input from an IPM committee.
- The length can range from a few pages for a small school or town, while a large city might have over 100 pages or a dedicated website. If your municipality or school does not have an existing IPM framework, this might take several years to fully write and implement. Some affiliates may have statewide plans they can look to, such as the University of California Statewide Integrated Pest Management Program (<https://ipm.ucanr.edu/>).
- The plan should be developed in a transparent manner and posted publicly online.
- The plan should include defined conservation goals.
- Periodically update the plan, including yearly review/evaluation.

### Monitoring

- Compile resources to help staff to identify pests (e.g. books, apps, pocket guides).
- Monitor (scout) landscapes and plants regularly to identify unwanted weeds, insects and other "pests" in a timely manner (e.g. before they establish).

- Monitor natural enemy populations (e.g. lady beetles, lacewings, parasitic wasps).
- Monitor plant health in the landscape (e.g. fungal growth, discolored or wilting leaves).
- Monitor impacts on the system (e.g. soil compaction).
- Establish monitoring protocols (e.g. frequency, where to look for pests, methods to estimate pest numbers). (Example: California Department of Pesticide Regulation: [https://www.cdpr.ca.gov/docs/schoolipm/managing\\_pests/gdebook/part1/monitoring.pdf](https://www.cdpr.ca.gov/docs/schoolipm/managing_pests/gdebook/part1/monitoring.pdf))
- Set threshold levels that trigger management efforts for priority economic pests. Most plants can support many herbivores without harm to their health, so treatment is often not needed.

## Non-Chemical Prevention and Management

Adopt non-chemical prevention and management tools to prevent a pest from arising and to stop pests from reaching harmful levels. Types of non-chemical management to consider include: cultural control (make an area less suitable for pests), mechanical control (physically remove or otherwise stop pests), and biological control (the use of natural enemies to control pest populations).

Effective non-chemical methods include:

- Ensuring conditions help make plants healthy (e.g. appropriate water, space, and nutrients).
- Planting the right types of plants for local conditions (e.g. planting drought tolerant species in sunny, dry locations).
- Sanitation (e.g. the removal of powdery mildew impacted leaves from beneath plants or removal of flowers with larval infestations), or other methods of altering conditions to deter pests.
- Avoiding moving pest species (e.g. weed seeds) to new sites.
- Excluding pests by creating barriers or other physical deterrents.
- Using hand tools to remove weeds.
- Using steam or flame weeders to kill weeds.
- Trapping pests.
- Hand removal of insects.
- Cutting infested/infected plant material.
- Promoting “conservation biological control,” boosting the populations of natural enemies that help control pests via enhancing habitat in your landscape (e.g. add bird-friendly landscape features, plant a diverse range of native plants).

## Pesticide Use and Risk Reduction

If pesticides (even those approved for use in organic production) are used, have a process in place to:

- Consider non-chemical options before using pesticides.
- Ensure any pesticide use is justified via monitoring threshold.

- Create a process to justify use.
- Choose least-toxic options. This option can be met by creating either an approved or banned pesticide list.
- Only use pesticides for economic pests. Prohibit or otherwise limit pesticide use for purely aesthetic damage. We encourage you to prohibit or limit use of pesticides on nuisance pests as well.
- Designate pesticide free zones in priority areas including designated pollinator habitat and other sensitive sites. It may help to include signage on site to prevent pesticide applications.
- Follow up pesticide use with preventative practices (listed above) so the pest is less likely to return. Ideally, pesticide use is a one-time option with other management methods taking over once the concern is addressed.
- Establish an emergency exception process that is public and documented. This would be for instances that pesticides or other methods that fall outside of the approved IPM process are needed. (For example, the arrival of a new invasive species.) The process should be transparent, and locations treated posted online.
- Apply pesticides in the most targeted manner that is feasible and effective.
- Optimize the timing of management to maximize effectiveness and minimize harm (e.g. using a when a target weed species is actively growing and before it has flowered or set seed).
- Choose products with low persistence (length of time it remains active) and tendency to drift.
- Use the lowest effective application rate.
- Follow the instructions on the product to avoid misuse (e.g. over-applying, treating when it's too hot, too windy or too rainy).
- Limit pollinator exposure. Don't apply to plants in bloom or shortly before bloom. Mow flowers before treatment, if unavoidable. Avoid even night sprays during bloom as nocturnal pollinators can be exposed, and still pose direct risks to daytime pollinators since some residues can last on flowers for days). Avoid applications to soil (where some bees nest).

## Administration

- Maintain a reference library of strategies to prevent and manage typical/priority pests.
- Keep records of pest scouting (as well as scouting of beneficial insects, if performed).
- For pesticide applications, follow all state and federal recording and reporting regulations. Best practices include tracking the date and time of each pesticide use with information made public.
- At a minimum, track pounds of each pesticide used (by month and by site). This includes use by contractors as well as staff.
- Train new staff on IPM principles, pest identification, and management techniques.
- Provide continuing education for all staff.
- Communicate expectations clearly with contractors, if used.

- Record non-chemical management efforts, including methods, timing, and results (via follow-up monitoring, post treatment).
- Designate an IPM coordinator.
- Maintain an IPM committee with a variety of stakeholders, including agency staff and public members, to develop and review the plan.
- Establish an inquiries and complaints process for community members with general questions, or complaints about weeds, pests, or management.

## Community Outreach

Providing ongoing education and information for the public is an important way to build community support. This could include:

- Post signage about IPM methods.
- Give public notice before treatment.
- Outreach about the benefits of IPM via BCUSA channels (social media or newsletter).
- Post the IPM plan online (this is a commitment of becoming a Bee City USA or Bee Campus USA affiliate).

## Further Reading

### Xerces Society Resources

- Learn more about Bee City USA and Bee Campus USA: [beecityusa.org](http://beecityusa.org)
- [Smarter Pest Management: Pollinator Protection For Cities And Campuses](#)
- [Supporting Ecologically Sound Mosquito Management](#)
- [Buying Bee Safe Plants](#)
- [Offering Bee Safe Plants](#)
- [Organic Pesticides- Minimizing Risks to Pollinators and Beneficial Insects](#)
- [Protecting Pollinators from Herbicides](#)
- [Rethinking Pest Management in Towns & Cities](#)
- [Bee City USA Webinars and Videos \(Videos at the bottom of this page\)](#)

### External Resources

- [University of California Statewide Integrated Pest Management Program](#)
- [California Department of Pesticide Regulation: Model Program School IPM Guidebook](#)
- [Washington State University Pesticide Resources and Education Program](#)
- [New York State Integrated Pest Management: Community IPM](#)
- [US Environmental Protection Agency: How to Report Pesticide Incidents](#)

### Contact Us

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