



THE POLLINATOR TOOLKIT

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WHO IS THIS TOOLKIT FOR?

Environmental students wanting to institute stronger protections for bees and other pollinators on campuses around the country.

WHY?

- Because chemicals commonly used on lawns and gardens are often toxic and hazardous and pose long-term implications for the health of pollinators, people, and the planet.
- If you're a college student, you're most likely exposed to pesticides everyday through your campus green spaces: lawn, gardens, and playing fields and involuntarily through drift and runoff.
- Many of these chemicals not only impact our health and are linked to reproductive and developmental harm, kidney damage or cancer, but are also harmful to wildlife, plants, pollinators, and natural ecosystems.

HOW TO USE THIS HABITAT TOOLKIT

This toolkit provides resources and support for universities and other educational institutions looking to make a difference by protecting species that are vital to our environment and food supply and making campus healthier for students. How? One way is to eliminate the use of bee-toxic pesticides on campus grounds and to foster a healthier habitat by planting pollinator friendly plants. We'll walk you through the steps of how to inform and mobilize students and members of your campus community to achieve toxic, chemical, pesticide-free campus gardens and grounds.

WHAT DOES THIS HABITAT TOOLKIT CONTAIN

- Background information on pollinators and their decline
- A step by step guide on how to transition your campus into a pollinator friendly habitat
- Activities and resources for campus and community engagement
- Information to inspire students, groundskeepers, landscapers, and faculty to transition to chemical, toxic, and pesticide-free lawn and garden management on college campuses.
- We are thrilled that you have decided to take on this habitat challenge and want to be there for you throughout every step of the process. Have questions? Need additional resources?

FEEL FREE TO CONTACT US FOR MORE SUPPORT

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ABOUT POLLINATORS
AND PESTICIDES



BACKGROUND THE HEALTH OF POLLINATORS, SUCH AS BEES, BIRDS, BATS, BUTTERFLIES, AND BEETLES, IS DIRECTLY LINKED TO OUR NATION'S FOOD SECURITY AND ALSO THE HEALTH AND VITALITY OF OUR ECOSYSTEMS. POLLINATORS ARE RESPONSIBLE FOR PROVIDING 1 OUT OF EVERY 3 BITES OF FOOD WE EAT SUCH AS ALMONDS, APPLES, SQUASH, CUCUMBERS, ORANGES, BLUEBERRIES AND PEACHES. UNFORTUNATELY, OVER THE PAST DECADE, POLLINATORS HAVE EXPERIENCED DRAMATIC DECLINES IN POPULATION SIZES AND OVERALL HEALTH. ALTHOUGH THERE ARE MANY CONTRIBUTING FACTORS TO THIS CRISIS (SUCH AS HABITAT LOSS, DISEASES, AND PARASITES), SCIENTISTS INCREASINGLY ATTRIBUTE POOR POLLINATOR HEALTH AND BEE DIE-OFFS TO THE INDISCRIMINATE USE OF SYSTEMIC PESTICIDES, MOST NOTABLY A CLASS OF INSECTICIDES KNOWN AS NEONICOTINOIDS (NEONICS FOR SHORT), USED WIDELY BOTH IN AGRICULTURE AND IN LANDSCAPING.

**FAST FACTS
ABOUT
POLLINATOR
DECLINE**

ECONOMIC IMPORTANCE

- Pollinators provide **\$20-30 billion** to the agricultural economy and honey bees alone account for roughly \$15 billion of that amount.
- Wild and **native pollinators** (such as bumblebees, mason bees, and squash bees) contribute over \$3 billion in pollination services to the U.S. agricultural economy and are estimated to produce between \$937 million and \$2.4 billion to the California economy alone.

DECLINE

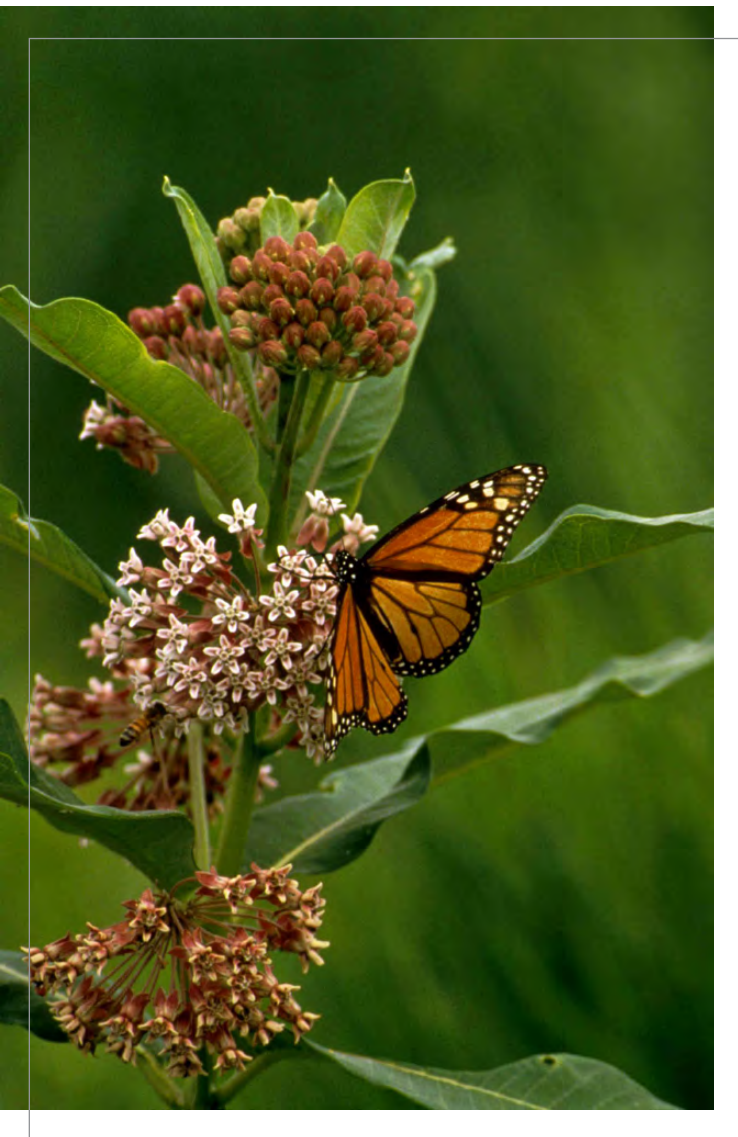
- The number of managed honey bee colonies in the U.S. has dropped from roughly 6 million in 1947 to less than 2.5 million today.
- 4 different bumblebee species have declined by 96% in the last 20 years
- Over the past several years, documented incidents of pollinator declines were at a record high, with some beekeepers repeatedly losing 100% of their operations.
- In the last 20 years, the number of monarchs has declined by 90 percent. They've dropped from a recorded high of 1 billion butterflies in the mid-1990s to less than 35 million last winter. For this year, early reports suggest a 50 percent decline in their numbers from last year.
- The U.S. Fish and Wildlife Service lists nearly 40 pollinator species as threatened or endangered, and several more are currently being considered

DAMAGE FROM BEE-TOXIC NEONICOTINOID PESTICIDES

- Neonicotinoids are the most widely used insecticides in the world. They are a systemic insecticide which means that unlike contact insecticides that only treat the area sprayed, they spread throughout the entire vascular system of the plant rendering the whole plant toxic.
- Neonicotinoids are up to 10,000 times more toxic to bees than other insecticides and their use can have immediate and long-term effects.
- While acute exposure can lead to outright killing, long term chronic exposure to neonicotinoids causes sub-lethal effects including impaired foraging and feeding behavior,

disorientation, delayed larval development, paralysis, and increased susceptibility to viruses, diseases, and parasites.

- Due to neonicotinoids systemic nature, bees and other pollinators visiting treated plants cannot avoid exposure and bring back contaminated pollen and nectar to their hive/nest.
- A study by Friends of the Earth and the Pesticide Research Institute found 51% of bee-friendly garden plants purchased at top garden retailers in 18 cities in the U.S. and Canada contained neonicotinoid pesticides—with no warning to consumers. The plants tested were treated with bee-killing neonicotinoid pesticides at levels that could harm or even kill bees.



MONARCHS AND PLANTING MILKWEED.

- Bees are not the only pollinators in trouble! In the last 20 years monarch butterfly populations have decreased by 90%. This decline is due largely to habitat loss. Across the Midwest, millions of acres of "Roundup® Ready" GMO crops engineered to withstand massive amounts of Monsanto's Roundup® have been planted along the monarch's migration route -- virtually wiping out milkweed, which monarch larvae rely on exclusively to eat. The U.S. Fish and Wildlife Service have the power to help. It could restore essential monarch habitat nationwide -- by giving the monarch butterfly protection under the Endangered Species Act. To help bring back this spectacular species, plant native species of milkweed on campus and in your community. To find out what type of milkweed is best suited to your region please visit this page on [planting milkweed for monarchs](#). If you want to find out more about the decline of the monarch butterfly explore the Center for Food Safety report, [Monarchs in Peril](#).

**PESTICIDES
HARMING
POLLINATORS
AND THE
PLANET**

Neonicotinoid pesticides are acutely toxic to bees, but other pesticides are contributing to pollinator decline and are toxic to the environment and people. Here's a snapshot of other high risk pesticides.

SYSTEMIC INSECTICIDES

- Neonicotinoids's systemic nature is what makes them particularly harmful to bees. In the last few years other new non-neonicotinoid systemic insecticides such as flupyradifurone have been registered for a variety of uses. These systemic insecticides are also toxic to pollinators and harm the environment.

SYNTHETIC PYRETHROIDS

- This chemical family of pesticides are often labeled as a safer alternative despite being very harmful to bees and other non-target insects.

GLYPHOSATE

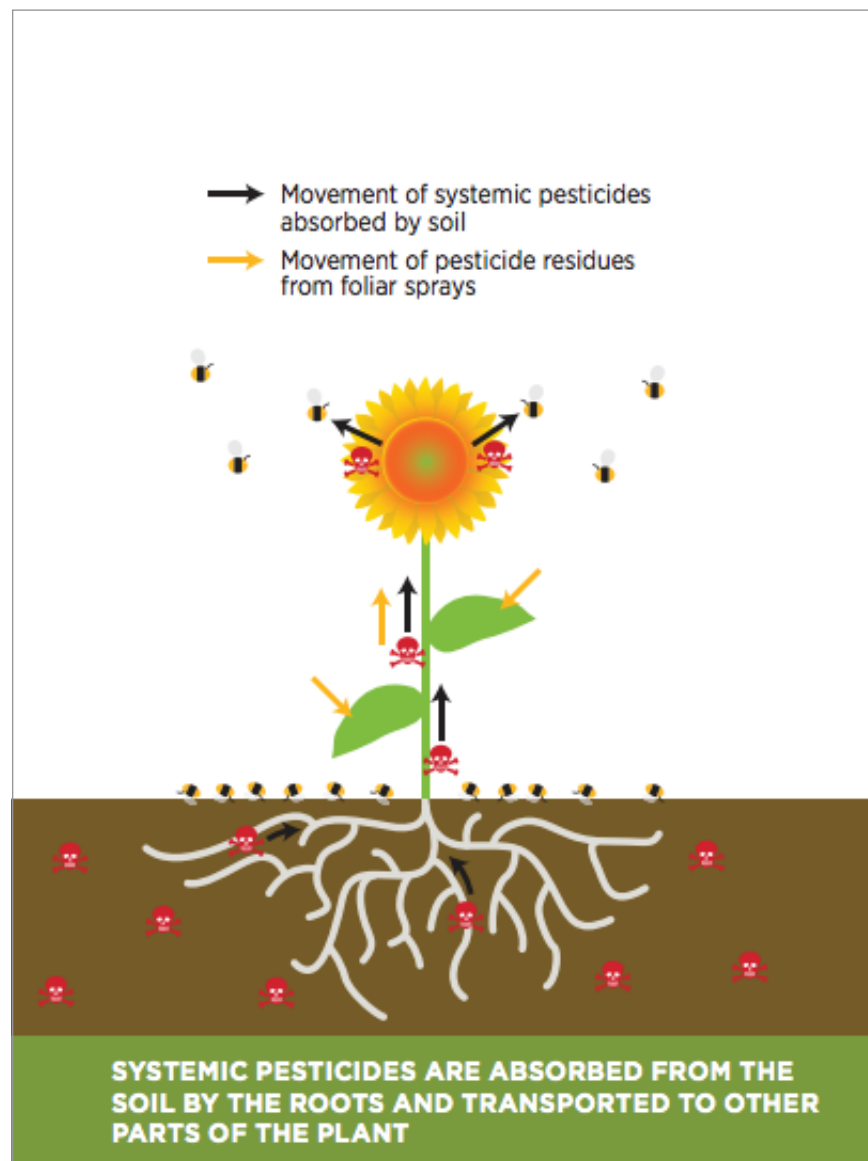
- This pesticide is commonly found in products like Roundup and is linked to declining monarch populations. Not only is it toxic to monarchs, it is linked to health effects like non-Hodgkin's lymphoma, nausea, headaches, and chest pain. The World Health Organization's International Agency for Research on Cancer classified it as "probably carcinogenic to humans."

2, 4-D

- A key component in the Vietnam War defoliant Agent Orange, 2,4-D is terrible news for the planet and people. All 2,4-D products are required to carry the DANGER signal word on product labels because it receives the highest toxicity rating possible by EPA. It has been linked to serious health issues including cancer, Parkinson's disease, and reproductive harm.

ORGANOPHOSPHATE

- Organophosphates are a group of chemicals used in domestic and industrial settings. Examples of organophosphates include **chlorpyrifos** and **acephate**. Originally developed in the 1940's as highly toxic biological warfare agents, these chemicals are linked to health effects such as high blood pressure, abdominal pain, nausea, vomiting, diarrhea, learning impairments, and behavioral disorders.





**STEPS FOR A GREENER,
POLLINATOR-FRIENDLY
CAMPUS**

You have the power to take action and build momentum for a safe, healthy, and pollinator-friendly campus environment. Here are steps you can take to green your campus and transition from the use of toxic chemicals to safe and healthy alternatives.

1. GET THE FACTS

The first goal is to create pollinator friendly habitats free from bee-harmful neonicotinoid insecticides. Neonicotinoids are used primarily in the form of seed coatings for major agricultural operations, but they are also commonly used for ornamental purposes on lawns, fields, and gardens. Not only do these products pose a great risk to bees but they also can leach into soil and ground water and contaminate surrounding areas and water bodies. As a student of your university, you have a right to know what chemicals you may or may not be exposed to. In order to find out what your campus is using:

- Find out if your university has a current Integrated Pest Management (IPM), toxic reduction policy, green purchasing and/ or a grounds management policy and who administers it -- a certain department, a contractor, or another entity.
 - Who makes the purchasing decisions? Does the provider have a history of giving a preference to certain products? Who is involved with the decisions?
 - Find out if the school has its own grounds management department or has service contracts with other landscaping and grounds management services.
- Ask for a list of any products used on campus, copies of current contracts for all relevant products, and a list of what problem these products are used to address
 - Make sure that the list is year round as the product list may change depending on the season.
 - It is important to find out what the targeted pest is so that alternatives can be properly assessed
- Learn as much as you can about your school and its grounds management practices.

2. ASSES THE ISSUE AND EVALUATE THE PROGRAM

- Look at all pesticides in use on your campus. Is your university using highly toxic pesticides such as neonicotinoids, pyrethroids, glyphosate, or 2, 4-D? All of these pesticides are harmful to pollinators, people, and the environment. It's important you assess what chemicals are currently being used by your university.
- Compare the list of products given to you by the grounds crew to this list of bee-toxic **products to avoid**. You can also check the label of the product used (all labels are available **online**) and check the active ingredients. If imidacloprid, clothianidin, thiamethoxam, acetamiprid, dinotefuran, or thiacloprid are listed as an active ingredient, it's a neonicotinoid and should be phased out!

3. CONSIDER BEST ALTERNATIVES

- Learn about the hazards of pesticide exposure and the benefits of drastically reducing or eliminating pesticide use and incorporating organic management practices for pest control. Check out the resources guide in this toolkit to get started.
- Using this information as a foundation, identify what the best option is for your school and steps your university should take for an effective policy and program. The first milestone to becoming a pollinator-friendly campus is to get rid of certain high risk pollinator-toxic pesticides such as neonicotinoids by amending your current IPM, toxic reduction, green purchasing, or campus grounds management policy or adopting a specific pollinator protection commitment. Be sure the commitment includes that commercial pest service providers or university workers provide landscape services that encourage pollinator populations and support pollinator services. This includes a guarantee that all habitat space is built using only native, drought tolerant, pollinator-friendly plants that are free of bee-toxic pesticides.
- You can also work with your university toward going completely organic.
- Look through the resources section of this toolkit to consider best alternatives. Make sure that the university is replacing chemicals they are phasing out with the least toxic alternatives that are good for pollinators, people, and the environment.

4. SET UP A MEETING with the head of the grounds or maintenance crew or whoever is responsible for the upkeep of the university landscape.

- Present your proposal about what pesticides you'd like the campus to eliminate, what policy you'd like them to adopt, and what alternatives you'd like them to use. Be prepared to discuss with university grounds department what the best option is for your university.

5. ORGANIZE YOUR CAMPUS

- Sometimes having the idea to green your campus is not enough to win, but having student power will be! It's important that you start building a large and broad coalition of student groups and members of your community to push your campus to adopt a pollinator-friendly, sustainable, and environmentally sound garden and grounds management policy.

6. GET STARTED

- Contact other student groups who care about pollinator protection or are affected by your university's pesticide use and begin forming a coalition of these allied groups. Contact appropriate school official(s) and ask for an endorsement.

- Write a letter to your school decision maker requesting the school adopt a pollinator protection commitment, IPM, or organic management policy and request a meeting to discuss the issue further. Provide examples of other universities and explain why it makes sense for the health of the campus community, pollinators, and the environment. Ask all of your allies and endorsers to sign the letter. (sample letter)
- Organize a letter delivery with all of the signers of the letter to the decision maker at your university. Try to have a brief conversation with the decision maker and try to set-up a meeting with the decision maker and all of your allies.

7. MAKE YOUR CASE

- After meeting with your landscaping department, you'll most likely need to get the Office of Sustainability and your university administration to agree to support and adopt the policy. Once these departments agree to meet with you, bring at least two to four people from the university and your allied organizations, department heads, professors, or others who have influence on the decision maker. Present a draft of your pollinator protection commitment, IPM, or organic management policy and talk about how you would like to see it implemented. Listen to any questions or concerns and work to develop a mutually acceptable policy. The more community support you have, the easier it will be to reach your goals.

8. CONTINUE TO ORGANIZE AND MOBILIZE

If after the first meeting your university has agreed to adopt a policy, then you are on the road to victory! Chances are you may need to gather more support and spread the word as much as you can. Here are some ways to continue organizing on your campus. Begin with the first bullet and slowly work your way down the list until you get your desired outcome.

- Start a campus petition urging the school to adopt a pollinator protection commitment, IPM or organic management policy. After you reach a large number of signatures from many of the students on your campus, organize a petition delivery to the campus administration. Have many of your allied groups attend and ask your campus newspaper to cover the story.
- Write letters to the editor of your school paper and try to speak on your school radio shows about why it is important the school adopt the policy.
- Hold a press conference with representatives from your allied organizations, professors, and campus staff that support the policy. Have each representative speak about the need for the school to adopt the policy and get your local campus paper and the local community news outlets to cover the event.
- Organize a film screening, concert, or other educational event to educate your campus community about why the school needs to adopt the policy and encourage them to join your campaign.

- Hold presentations or workshops to classes, organizations, or other groups in your campus community about the issue and why the school needs to adopt the policy. At the end, make sure you ask them to join the campaign.
- Hold a hearing to present testimony and pack the room so the university sees there is broad support for this policy.
- Hold a rally or demonstration in front of the decision maker's office.

9. SIGN THE POLICY

Once alternatives are discussed and agreed to, a timeline is set for implementation, and your administration agrees to officially adopt a pollinator protection commitment, IPM or organic management policy, get it signed!

10. CELEBRATE

Once you win your campaign, be sure to celebrate your victory. Make sure everyone that was involved along the way feels appreciated and is recognized.

11. IMPLEMENT

Although your university is responsible for implementing the new policy, you will need to stay engaged and make sure the policy is being implemented properly.

- Monitor contracts, research any possible violations, and make sure your university is holding contractors accountable to the policy.
- Consider creating a committee to oversee the policy. The committee could be made up of students, student groups, faculty members, school administrators, facility and landscape staff, and any company contracted by the school. The committee could help with the implementation and development of the policy to ensure everything is running smoothly.



FUN IDEAS FOR
CAMPUS INVOLVEMENT

1. DOCUMENTARIES

The following documentaries are all terrific ways to start the conversation about the importance of pollinators on your campus. After the film you can hold a public discussion. If you want to make the event even more memorable, try contacting your local beekeeper's association for a possible demonstration.

*Please visit the website for each film to learn more about hosting a screening and rights to the film.

DOCUMENTARIES ABOUT BEES

- [Vanishing of The Bees](#)
- [Queen of the Sun](#)
- [More Than Honey](#)
- [Bonus Footage About Pesticides](#)
- [Nicotine Bees](#)

DOCUMENTARIES ABOUT PESTICIDE USE

- [Silent Spring](#)
- [Food Beware](#)
- [Bananas!](#)
- [The World According to Monsanto](#)
- [Fooling with Nature](#)
- [Health Hazards of Pesticides](#)
- [Unacceptable Levels](#)
- [The Human Experiment](#)

If you don't have time for a screening, but want to discuss the issues further with a club or in one of your classes, below are additional resources you may find useful

- [Neonicotinoids: The New DDT?](#)
- [Full Episode: Flight of the Bees \(Encore\)](#)
- [Earth Focus Episode 44 - Killing Bees: Are Government and Industry Responsible?](#)
- [A beekeeper and an industry under threat](#)
- [Dan Rather Reports - Buzzkill](#)

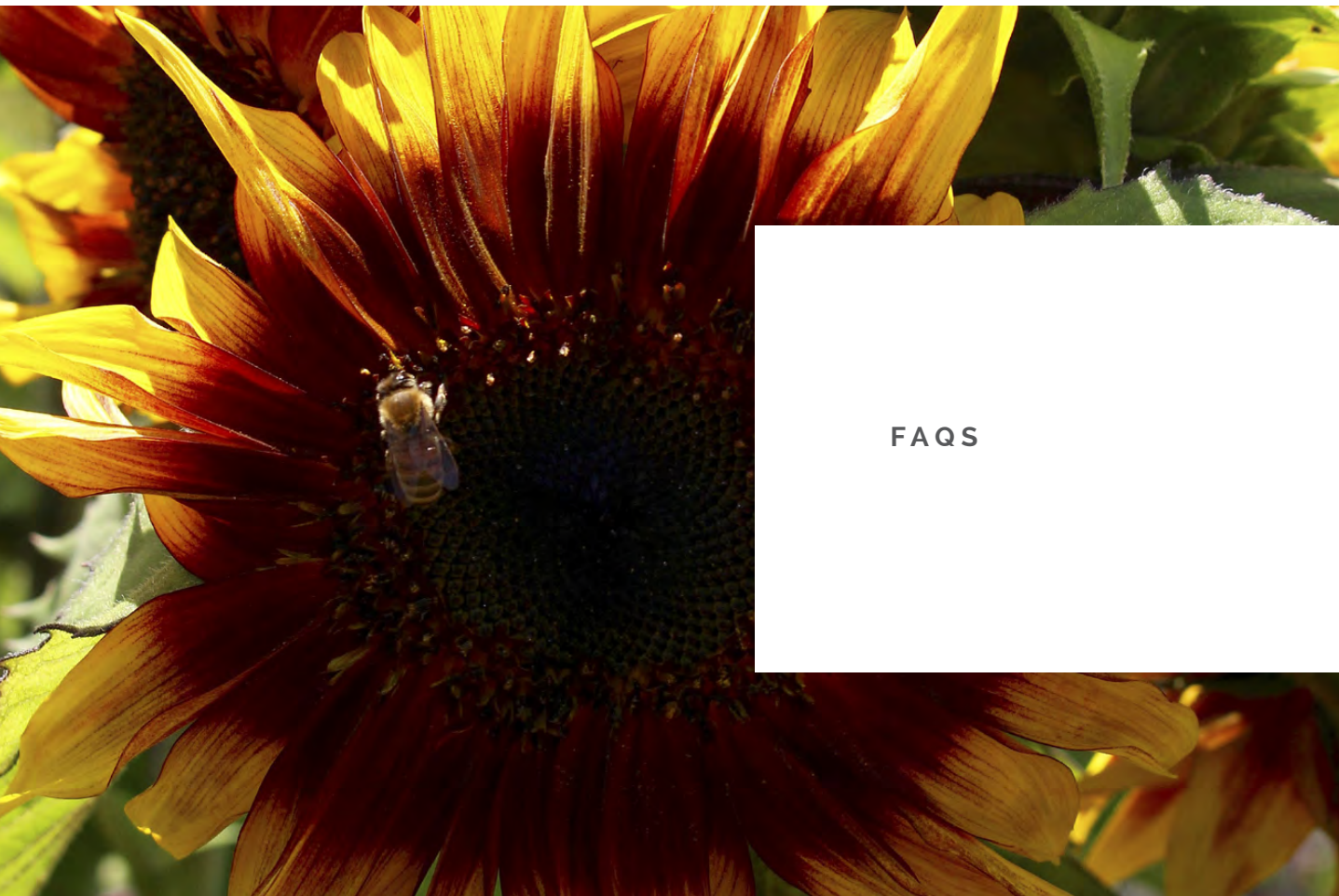
- [Who's to Blame for Honeybee Holocaust? | Think Tank](#)
- [Bee Keeper Jim Doan](#)
- [EARTH FOCUS: HIDDEN BEE KILLERS?](#)
- [How pesticides affect pollinating bees](#)
- [Saving the bees, which are dying at an alarming rate](#)
- [Santa Barbara Creeks Division- Neonicotinoid Detections](#)
- [Why Butterflies Are At the Brink of Extinction](#)

2. POLLINATOR PLANTING DAY

One way to get people involved in transforming your university into a bee-friendly habitat is to host a pollinator planting day. Talk to grounds crew members to find out if there is a place on campus that can be designated as a pollinator garden. Organize a day where students can come and plant native, drought tolerant, pollinator-friendly plants, while learning more about the problems facing pollinators. At the event, feel free to hand out copies of any of our reports and/or fact sheets to educate the student body about this important issue.

Here are guides to pollinator-friendly plants and products to get you started.

- [Pollinator-Friendly Seeds and Nursery Directory](#)
- [Pollinator Friendly Plants To Choose](#)
- [Companies that Grow and Distribute Organic Seeds and Plants](#)
- [List of wholesale nurseries and retailers that have committed to not use or sell neonicotinoids](#)
- [Bee-Friendly Plant Lists](#)
- [Landscapes for Pollinators](#)
- [Bee Protective Habitat Guide](#)



FAQS



WHY SHOULD WE TRANSFORM THE WAY OUR CAMPUS GROUNDS ARE MANAGED?

Millions of pounds of pesticides are applied on lawns and landscapes every year and use is steadily increasing. These chemicals are toxic for people, animals, and the environment. The best way we can reduce pests and balance our ecosystem is to green the land management systems on our campuses and transition to sustainable integrated pest management or organic management practices.

WHAT IS INTEGRATED PEST MANAGEMENT?

Integrated Pest Management (IPM) is a program of prevention, monitoring, and control which offers the opportunity to eliminate or drastically reduce the use of pesticides, and to minimize the toxicity of and exposure to any products which are used. IPM does this by utilizing a variety of methods and techniques, including cultural, biological, and structural strategies to control a multitude of pest problems. IPM is a term that is used loosely with many different definitions and methods of implementation. IPM can mean virtually anything the practitioner wants it to mean. Beware of chemical dependent programs masquerading as IPM. For more information about IPM, read [Beyond Pesticides factsheet](#).

WHY IS ORGANIC MANAGEMENT BETTER?

Organic management of your campus gardens and grounds is the best way to manage land and eliminate exposure to pesticides. This management technique is safer for humans and wildlife like bees, butterflies, birds, worms, and soil microbes. Through this technique we are able to improve the quality of soil, making it better equipped to retain nutrients and water, reduce erosion, and absorb air pollution like dust and soot. With this management technique, grass is even better at converting carbon dioxide to oxygen, which creates clean air for the planet. The use of chemical fertilizers and toxic pesticides on landscapes may initially make them look healthy and green, but in reality this chemical-intensive path requires more and more toxic chemicals over time. Instead, organic management techniques eliminate these toxic chemicals and the damage to animals, humans, and the environment.

HOW IS WILDLIFE IMPACTED?

The primary purpose of pesticides is to kill pests and unwanted insects. Once they are in our environment, they not only kill unwanted pests, but continue to harm pets, and wildlife— even threatened and endangered species.



WHAT ABOUT WATER?

Studies show that pesticides used on campus gardens and grounds are moving into our drinking water and polluting our streams from toxic runoff and drift. There are 30 lawn pesticides that are commonly used, and of these 30, 19 are detected in groundwater, 20 have the ability to leach into drinking water sources, all 30 are toxic to fish and other aquatic organisms vital to our ecosystem, 29 are toxic to bees, and 22 are toxic to birds.

WHAT ARE THE HEALTH RISKS?

A growing body of science demonstrates that these chemicals are linked to adverse health effects and when combined, their toxicity can increase by as much as 1,000 times. Because nearly 1,000 active pesticide ingredients are registered for use, testing for these synergistic effects is nearly impossible. However, the National Academy of Sciences shows that one out of seven people are negatively impacted by lawn pesticide exposure because it is linked to asthma, allergies, cancer, kidney damage, birth defects, and other long-term diseases. Children are especially at risk and considered a "frontline community" to exposure because their brains and bodies are developing and vulnerable to exposure and effects.

HOW ARE YOU EXPOSED ON CAMPUS?

As a university student, you're exposed to pesticides everyday via your campus lawns, gardens, sports fields, and parks. Pesticides can drift and settle on desks, books, counters, and walls. Pesticides persist in dust and air, and when they are in the campus environment, everyone is susceptible to breathing contaminated air and touching contaminated surfaces. Pesticides can concentrate indoors to levels ten times higher than pre-application levels! Of the 30 commonly used lawn pesticides, 16 are linked with cancer, 12 are linked with birth defects, 21 with reproductive effects, 25 with liver or kidney damage, 14 with neurotoxicity, and 17 with disruption of the endocrine (hormonal) system. The most popular and widely used chemical, 2,4-D, kills weeds, but is also linked to human health impacts like reproductive harm, thyroid problems, and non-Hodgkin's lymphoma. If your campus is in a rural area, pesticides are probably drifting into your campus from agricultural fields. If your campus has any turf, you are also being exposed to pesticides there. Synthetic grass fields are made of materials including nylon and polyethylene, which can lead to exposure of many toxins

WILL THIS COST THE UNIVERSITY MORE?

While synthetic pesticide and fertilizer products produce instant results, frequent reapplication is required to obtain the desired effects. Organic and IPM management techniques require less money over a longer period of time and provide a longer-term payoff as you're safeguarding the health of people and the planet. Nothing can outweigh this cost.



IF PESTICIDES ARE ON THE MARKET, AREN'T THEY SAFE?

The vast majority of pesticide products registered for use by the Environmental Protection Agency and our state governments have not been fully tested for the full range of human health effects. While in other countries they utilize the precautionary principle, which does not allow chemicals on the market if there are any data gaps or inadequate scientific evidence to determine a chemical's safety, in the U.S. pesticides can be registered even if there is evidence that they cause health and environmental risks.

DO OTHER PLACES IN THE COUNTRY USE IPM OR ORGANIC MANAGEMENT PRACTICES?

There are many cities, states and universities in the U.S. that are using the precautionary principle to cut down on the use of toxic pesticides on the gardens, parks and grounds in their communities to make them healthy and safe. Currently, there are 17 state laws that recommend or require schools to adopt an IPM program. In addition, 315 school districts and five individual schools have voluntarily adopted an IPM policy where no law mandates one. Recently, schools such as Emory University and Vermont Law School adopted pollinator protection commitments to ban bee-killing pesticides from their gardens and grounds. Read about Emory University and Vermont Law School's shift and view their policies in the Case Study section of this toolkit.

ARE THERE ALTERNATIVES?

Absolutely. Cities, states, and universities that have adopted organic and IPM management practices demonstrate that it is possible and not necessary to care for gardens and grounds with large amounts of chemical fertilizers and pesticides because there are safe, healthy, and viable alternatives, products, and practices.



CASE STUDIES

Emory University realized that by leveraging their institutional purchasing power, they could transform the university into a safe haven for bees and other pollinators by providing suitable habitat and avoiding the use of bee-harming pesticides and plants pre-treated with these pesticides.

Emory is one of the first university's in the country to adopt a landmark policy to help restore the global ecosystem, foster healthy living, and reduce the university's impact on the local environment.

Concerned about the plight of bees and other pollinators, essential for two-thirds of the food crops we eat every day, Emory University developed a comprehensive pollinator protection campaign including a ban on a class of pesticides called neonicotinoids on its campus grounds. Implicated as a key factor in global bee die-offs by a growing body of science, neonicotinoids are systemic, long-lived, highly toxic, and widely used. These pesticides can kill bees outright or impact their ability to fight off diseases and perform their duties. Emory University realized that by leveraging their institutional purchasing power, they could transform the university into a safe haven for bees and other pollinators by providing suitable habitat and avoiding the use of bee-harming pesticides and plants pre-treated with these pesticides. In August 2014, Emory University adopted a pollinator protection commitment to ensure neonicotinoids would not be used on university grounds and any plants pre-treated with these pesticides would not be planted. In addition, Emory committed to plant pollinator-friendly habitats on campus and conduct campus outreach and education. By adopting this commitment, Emory University became the first university in the country to adopt this type of landmark policy to help restore the global ecosystem, foster healthy living, and reduce the university's impact on the local environment.

EMORY UNIVERSITY'S STEPS TO DEVELOP A POLLINATOR PROTECTION COMMITMENT

1. ASSESSED CURRENT PRACTICES

The Office of Sustainability worked closely with the Grounds Department to conduct a review of pesticides used on campus grounds to reveal what neonicotinoid products were currently being used and found that no neonicotinoid pesticides were being widely dispersed, but two neonicotinoids were being used in limited applications.

2. IDENTIFIED SAFE ALTERNATIVES

The Office of Sustainability and Grounds identified safe alternatives to ensure the university didn't use more harmful or regrettable substitutions in place of neonicotinoids. Emory used the Pesticide Research Institute online pesticide product assessment tool, PestSmart™ to assist the process.

3. DEVELOPED CAMPUS LANDSCAPING STANDARDS

To ensure that all landscaping does not include plants pre-treated with neonicotinoids, the Office of Sustainability worked with Grounds and Planning, Design, and Construction to ensure that only plants that have not been pre-treated with neonicotinoids will be purchased for use on Emory's campus, to the extent feasible. Campus Services contacted Emory's plant nursery supplier to ensure that they would not pre-treat plants with neonicotinoid pesticides. The Office of Sustainability worked with the Office of Procurement to add requirements about the pollinator protection commitment in all grounds-related contracts.

4. WROTE COMMITMENT

The Office of Sustainability wrote a pollinator protection commitment based on feedback from Grounds, Procurement, and Planning, Design, and Construction.

5. GOT APPROVAL

The Office of Sustainability presented a proposal to senior administration on the steps Emory could take to be a safe haven for bees and other pollinators. The University approved the commitment!

6. COMMUNICATED THE EFFORTS

The student newspaper and campus news center ran a story about the move to inform the university community about the steps Emory took to protect pollinators. The Office of Sustainability helped to spread the word via social media and an Emory professor wrote an op-ed in the Atlanta Journal Constitution newspaper about Emory's commitment

7. CONDUCTED EDUCATION AND OUTREACH

The Office of Sustainability Initiatives holds educational events on campus so the Emory community can learn about the importance of pollinators and why the university pollinator protection commitment is important for the health of our food supply and environment.

EMORY'S COMMITMENT

- Eliminate neonicotinoid use on campus grounds
- Purchase plants for campus landscaping that have not been pre-treated with neonicotinoids, to the extent feasible
- Specify in contracts with vendors and campus construction standards not to use neonicotinoid insecticides or plants pre-treated with neonicotinoids.
- Ensure substitutes for neonicotinoid pesticides are safe for pollinators
- Plant pollinator-friendly habitats on campus
- Conduct campus outreach and education

CONTRACT LANGUAGE

Contractor understands and agrees that it is not permitted to utilize neonicotinoid pesticides for outdoor use when fulfilling the delivery requirements of any numbered PO or when performing services for Emory University. Contractor further understands and agrees that all plants pre-treated with neonicotinoid pesticides are prohibited and are not to be delivered under this PO or Agreement. Any Products containing or treated with neonicotinoid pesticides for outdoor use delivered beyond the date shown on this PO or Agreement will, upon receipt of written notice from the buyer, be removed by Contractor (at its expense) and a refund or credit issued (at the option of the buyer) for the amount of any neonicotinoid product purchased, delivered, and subsequently removed.

In August 2014 Vermont Law School became one of the first higher education campuses in the country to receive neonicotinoid-free designation. Vermont Law School (VLS) received the recognition from the BEE Protective Campaign led by Center for Food Safety and Beyond Pesticides. In joining the campaign the university added to its history of environmental stewardship and became an institutional leader in pollinator protection. The Center for Food Safety worked with representatives from VLS's Center for Agriculture and Food Systems and the university's building and grounds crew to assess the chemical usage on campus, eliminate the bee-toxic products, and establish pollinator-friendly habitats as well as raise awareness about pollinator decline.

After being contacted by the Center for Food Safety about the campaign, the program officer at VLS's Center for Agriculture and Food Systems researched who was responsible for the campus landscaping services, and set a meeting with the university building and grounds crew. In the meeting the program officer used resources provided by the Center for Food Safety to explain to the grounds crew the harmful impacts of neonicotinoid insecticides, the importance of bees to our agricultural system and environment, and the alternative organic solutions to pest management. The program officer then asked the building crew to review the products used on campus and to compare it to the list of bee-harmful products.

It took almost 3 weeks for the grounds crew to get back to the Center for Agriculture and Food Systems with an update about their product review. The building and grounds crew determined that none of the products they were currently using contained neonicotinoids. After the meeting, the VLS representative worked with the Center for Food Safety to update the language of the **Bee Protective Model Resolution** to best fit the needs of the campus and gave it to both the building and grounds crew as well as the director of the Center for Agriculture and Food Systems to sign. Even though the school was already not using any neonicotinoid insecticides, it took 3 more weeks for university officials to review the resolution and determine that they could keep to the commitment of not using neonicotinoid products in the future.

In joining the Bee Protective campaign, VLS not only created much need pollinator friendly habitat, it also received media recognition for its continued work in protecting the environment. In August 2015, VLS celebrated its one-year anniversary of signing the resolution. As a means of celebrating this commitment, VLS is going to designate areas of campus as pollinator zones where they will plant pollinator-friendly plants, adding to their healthy habitat space. By continuing to make pollinator conscious landscaping decisions, representatives committed to the Bee Protective Campaign, continue to raise awareness about the importance of pollinators while keeping the goals of the resolution alive.

The best lesson learned from the VLS case study is that it is important to consider timing when establishing a campaign. Setting realistic goals and deadlines can help keep the campaign on track while balancing educational commitments and the conflicting schedules of department heads, university officials, and grounds and maintenance crew. It is important to keep the momentum alive when waiting for answers from necessary parties. Each university is different and the time it takes to go neonicotinoid-free will take varying lengths of time and is highly dependent on multiple different factors. If you are waiting to hear back from someone or waiting for a scheduled meeting to take place, remember to use that time wisely by building support on campus, or doing research to be prepared for next steps.

Check-out a few examples of resolutions your university can adapt and adopt to protect pollinators and the environment.

"HONEY BEES AND OTHER POLLINATORS PLAY A CRITICAL ROLE IN AGRICULTURAL SYSTEMS," SAID LAURIE RISTINO, DIRECTOR OF THE CENTER FOR AGRICULTURE AND FOOD SYSTEMS AND VLS ASSOCIATE PROFESSOR OF LAW. "PROTECTING THEIR HEALTH AND SAFETY IS A REFLECTION OF VERMONT LAW SCHOOL'S COMMITMENT TO THE ENVIRONMENT AND CAFS' MISSION TO SUPPORT SUSTAINABLE FOOD AND AGRICULTURAL SYSTEMS. WE HOPE MORE WILL FOLLOW OUR LEAD."

SAMPLE RESOLUTIONS

These resolutions specifically address neonicotinoids, but you can adapt them to address other chemicals too. You can also consider amending your schools current IPM policies, toxic reduction policies, or land management policies to address the chemicals or adopting an organic land management policy.

- **Bee Protective Resolution**
- **Honey Bee Haven Resoluton**



RESOURCES

Turning Green

Biodiversity

Follow board

Friends of the Earth

A list of the best "bee friendly" retailers!

Pinned from foe.org

BEYOND PESTICIDES

Pollinator-Friendly Seeds and Nursery Directory Growing plants to protect managed and wild bees, butterflies, birds and other pollinators

Pinned from beyondpesticides.org

Friends of the Earth

"Friends of the Earth strives for a more healthy and just world. We understand that the challenges facing our planet call for more than half measures, so we push for the reforms that are needed, not merely the ones that are politically easy." - See more at: www.foe.org/...

Pinned from foe.org

10 FOODS that wouldn't be WITHOUT BEES

- Apples
- Almonds
- Watermelon
- Pumpkin
- Squash
- Cucumber
- Avocado
- Mango
- Blueberries
- Raspberries

Want to know why bees are so important?

Pinned from smarthealthtalk.com

SAVE THE BEES

PLANT THESE

Annuals	Perennials	Herbs
Aster	Allium	Borage
Calendula	Anemone	Catnip
Clover	Clematis	Fennel
Dandelion	Crocus	Lavender
Poppy	Dubia	Mint
Sunflower	Echinacea	Oregano
Sweet alyssum	Geraniums	Rosemary
Zinnia	Gladiolus	Sage
	Hollyhock	Thyme
	Monarda	Salvia
	Penstemon	
	Sedum	

from eBay

Create a Bee-Friendly Garden

Here are some of the many varieties of flowering plants that bees love. It's better to plant a number of the same plants than many different varieties as bees are attracted to larger expanses of one kind of flower. More on creating a bee friendly garden in the post #ad #bee #garden

Pinned from ebay.com

a worm's worth: HOW EARTHWORMS HELP THE GREEN GRASS GROW

- they break up thatch**: 5x more water in soil
- they eat nematodes**: 7x more nematodes in soil
- they help water flow**: 11x more water in soil
- they eat other pests**: 11x more water in soil
- they fertilize the soil**: 11x more water in soil

HELP YOUR EARTHWORMS HELP YOU

The importance of earthworms | Ecological Lawn Care Blog (I don't treat my lawn, I can't stand lawn, I'd grow veggies and flower everywhere if it weren't for the fact kids need room to play and fall safely, but I do care about worms :))

Pinned from ecologicallawnblog.com

IN PERIL

1/4 OF SHARKS, RAYS AND CHONDRICTHANS ARE THREATENED

OVERFISHING THREATENS SHARKS AND RAYS

24% OF SPECIES OF CHONDRICTHANS ARE THREATENED

107 species of rays are classified as threatened

74 species of sharks are classified as threatened

MOST THREATENED FAMILIES

1. Sawsharks (Pseudocarcharias)
2. Angel sharks (Sphyrnidae)
3. Wobbegongs (Pseudocarcharias)
4. Deep-sea sharks (Chimaeridae)
5. Whiptail sharks (Etmopterus)
6. Gulper sharks (Pseudocarcharias)
7. Thresher sharks (Alopiidae)

NUMBER OF THREATENED SPECIES BY HABITAT

150 species are classified as threatened

1/4 of threatened species are sharks

**FOR
ADDITIONAL
INFORMATION
AND
RESOURCES**

Center for Food Safety: Centerforfoodsafety.org

Beyond Pesticides: beyondpesticides.org

Center for Health and Environmental Justice: childproofing.org

Environment and Human Health, Inc.: ehhi.org

Friends of the Earth: foe.org beeaction.org

Greenscapes: greenscapes.org

Grassroots Environmental Education: grassrootsinfo.org

Healthy Schools Network: healthyschools.org

Improving Kids Environment: ikecoalition.org

IPM Institute of North America: ipminstitute.org

Pesticide Action Network North America: panna.org

Pesticide Research Institute: PRI.org

PestSmart™ Web: pesticideresearch.com/site/pestsmart/

Rodale Institute: rodaleinstitute.org

SafeLawns: Safelawns.org

Safer Chemicals Healthy Families: saferchemicals.org

School Pesticide Reform Coalition: beyondpesticides.org/toxicfreeschools

Turning Green: turninggreen.org

The Organic Center: www.organic-center.org

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