

# Pollinator Steward Certification Program Outline

2024



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## Steps to Pollinator Steward Certification (PSC)

### Certification Requires TWO Steps:

**Step 1)** Watching the 7-part virtual training modules live or recorded. Once complete, a short learning form must be filled out to share training takeaways.

**Step 2)** Completion of one habitat creation action and one outreach or education action. A similar short form must be filled out by the following year.

### Details to Steps:

**1.** Watch all training modules, either live or recorded. See page 5 for a quick schedule for this year's program.

**2.** At the end of each live training session, we suggest that you write down in point form or 1-2 sentences the key takeaways from each training module. After all the modules are complete, you can then transfer your answers into the Step 1 form that we will provide you. **The Step 1 form must be submitted by December 31st, 2024 to complete the first part of your certification.**

**NOTE:** Participants will be expected to answer learning outcomes for only one of the "Habitat Creation" modules (modules 5a, b, or c). We invite you to attend all three to expand your learning, but if you would like to focus your time and efforts, please select the module most appropriate for your pollinator steward journey.

**3.** After submitting the Step 1 form, your responses will be reviewed, and Pollinator Partnership staff will send you the link to the Step 2 form. **You must complete your habitat and outreach actions and submit your Step 2 form by September 30th, 2025.**

**4.** Once both forms have been submitted and approved, you will receive a certificate of completion, and the authority to use the Pollinator Steward stamp as part of your correspondence and pollinator-related activities. You will be eligible to receive a free PSC lapel pin (seen below) once certified. The pin is great to wear anytime as a conversation starter and for outreach events.



PSC lapel pin







## 2024 Training Details

- The 2024 training consists of 9 modules (7 are mandatory) with modules taking place on Tuesdays, starting on February 6th, 2024. Note that the habitat-specific modules (Modules 5a,b,c) are in the same week (March 5th, 6th, and 7th) and **you are only required to attend or view one of the three**. Participants can choose the session most applicable to them.

- You will have access to the **Pollinator Steward Certification Course Information page** on the Pollinator Partnership website. Use this page to access module recordings, program information including scheduling and module outlines, as well as extra resources from each module. To access this page:

**Website:** <https://www.pollinator.org/psc/course-info>

**Username:** PollinatorSteward

**Password:** psc2024

**Please do not share the username and password as this page is only for registered participants of the 2024 Pollinator Steward Certification program.**

- Recordings for each session will be posted to the Course Information page the following week in which they occur. For example, we will post the recording for Module 1 by February 12th.
- You will have access to the recordings until the end of the year; they will be inaccessible after December 31st, 2024.
- Each session is 90 minutes in length, with approximately 60 minutes of content and 30 minutes for participant questions.
- The training will be hosted on Zoom, in a format that focuses on the speakers rather than the participants. This means you will be able to see the speakers, participate in a live chat, and post questions in the Q&A function, but will not be able to speak to other participants or the panelists through your microphone.





## **Pollinator Steward Certification Schedule 2024**

**All modules will take place at 4:00pm to 5:30pm PST / 7:00pm to 8:30pm EST**

### **Session 1 – Introduction to Pollinators**

Tuesday, February 6th

### **Session 2 – Indigenous Perspectives**

Tuesday, February 13th

### **Session 3 – Butterflies and other Pollinators**

Tuesday, February 20th

### **Session 4 – Creating Habitat for Pollinators Overview**

Tuesday, February 27th

### **Session 5a – Habitat Creation: Yards, Gardens, and Balconies**

Tuesday, March 5th

### **Session 5b – Habitat Creation: Large Land Managers, Right-of-Ways, and Municipalities**

Wednesday, March 6th

### **Session 5c – Habitat Creation: Farmers, Growers, and Agricultural Landscapes**

Thursday, March 7th

### **Session 6 – Identification and Monitoring**

Tuesday, April 9th

### **Session 7 – Expand your Impact!**

Tuesday, April 16th



## 2024 Pollinator Steward Training Module Details

### Session 1 – Introduction to Pollinators

Tuesday, February 6th, 4:00 pm to 5:30 pm PST/7:00 pm to 8:30 pm EST

Speakers: Dr. Lora Morandin and Anthony Colangelo, Pollinator Partnership

In this session you will be given the fundamental information needed for all future learnings and actions! Topics that will be discussed include:

- Pollinator Foundations: what is pollination, how is it done, who are the pollinators, why bees are important, how bees live, and how to help. We will also introduce you to the main issues pollinators are facing and how this impacts pollinator species. We will briefly talk about species at risk statuses across North America.

### Session 2 – Indigenous Perspectives

Tuesday, February 13th, 4:00 pm to 5:30 pm PST/7:00 pm to 8:30 pm EST

Speakers: Brad Howie, Manoomin Learning, and Melanie Kirby, Institute of American Indian Arts

We are extremely excited to host Brad Howie and Melanie Kirby, who will discuss their personal cultural perspectives and stewardship ethics in the world of native plants, pollinators, and community relationships with some personal stories about their experience with pollinators.

### Session 3 – Butterflies and Other Pollinators

Tuesday, February 20th, 4:00 pm to 5:30 pm PST/7:00 pm to 8:30 pm EST

Speakers: Amanda Smith and Steve Sass, Indiana Nature LLC, and Anthony Colangelo, Pollinator Partnership

This module is all about the important pollinator groups that often get overlooked, including birds, bats, beetles, and flies. We will have a special feature on butterflies and moths covering details about their lifecycles and importance to pollination and biodiversity.

- Overview and fun facts about the different pollinator groups showcasing their amazing diversity.
- Lepidoptera 101: What is a butterfly? How is it different from a moth? What are their roles in the pollination system? Butterfly families: What are the major butterfly families you can encounter across North America and how you can recognize them.
- Plants for butterflies: Regional information for plants that are supportive of different butterfly and moth species. Plants for moths and moon gardening for nocturnal pollinators.



## **Session 4 – Creating Habitat for Pollinators Overview**

Tuesday, February 27th, 4:00 pm to 5:30 pm PST/7:00 pm to 8:30 pm EST

Speakers: Dr. Lora Morandin and Anthony Colangelo, Pollinator Partnership

With a fundamental understanding of the needs of pollinators in your pocket, this session will speak to the more specific habitat elements needed to support pollinators and how this varies by region for different plant species.

- Ecoregions, Ecozones, Ecotypes: What are they? What defines different types of ecoregions? How do they impact what you should and should not plant?
- Habitat elements needed for pollinators: nesting and overwintering habitat, selecting plants, diversity in plantings, and plant-pollinator interactions.
- Habitat Types: We will share some examples of habitat creation and the unique considerations and challenges faced in each.

## **Session 5a – Habitat Creation: Yards, Gardens, and Balconies.**

Tuesday, March 5th, 4:00 pm to 5:30 pm PST/7:00 pm to 8:30 pm EST

Speakers: Sara Wittenberg and Anthony Colangelo, Pollinator Partnership

Native plants and pollinators provide the unique opportunity to help enhance your green spaces at home, whether in your yard, garden space, or even on your apartment balcony. When it comes to helping pollinators, no space is too small for habitat. We will discuss the opportunities available to you to create healthy habitat and attract pollinators and other beneficial insects to your home and green spaces.

- Planning your project: resources, funding, timelines, sourcing plants, selecting material and species, community engagement.
- Before you plant: site preparation including soil and ‘weeds’, planting dates, volunteers, materials.
- Planting day: plant layout, digging, planting, watering in, mulching and more.
- Longer term care: ways to manage native plant habitat into the future.





### **Session 5b – Habitat Creation: Large Land Managers, Rights-Of-Way, and Municipalities.**

Wednesday, March 6th, 4:00 pm to 5:30 pm PST/7:00 pm to 8:30 pm EST

Speakers: Lea Millet, Electric Power Research Institute, Anthony Colangelo, Andy Grinstead, and Jordan Phelps, Pollinator Partnership

We will delve into the challenges and opportunities present in habitat creation on a large scale for those who manage rights-of-way, parks, roadsides, and municipalities.

- Socioecological interphases in large landscapes and the available opportunities.
- Planning, prepping, and creating habitat in large areas.
- A look at the unique roles for municipalities in fostering and supporting pollinator and land stewardship.
- Case Study: We will learn about the work the Electric Power Research Institute undertakes to support and advocate for pollinator habitat creation on managed lands.

### **Session 5c – Habitat Creation: Farmers, Growers, and Agricultural Landscapes.**

Thursday, March 7th, 4:00 pm to 5:30 pm PST/7:00 pm to 8:30 pm EST

Speakers: Miles Dakin, Pollinator Partnership, Christine Gemperle, Gemperle Farms

Approximately 40% of globally available land is utilized for agriculture. With growing human populations requiring an increase in food production, we discuss the ways in which pollinators and biodiversity can be supported in agricultural landscapes.

- Discussing the unique opportunities and challenges available for farmers and growers in supporting pollinators within agricultural landscapes.
- Examples of different crop systems and approaches to habitat improvement and creation as well as other ways to support pollinators such as using Integrated Pest Management (IPM).
- Case Study: we will learn about Christine Gemperle’s experience managing almond farms across California, as well as the benefits and opportunities she’s encountered using bee friendly practices.



## **Session 6 – Identification and Monitoring**

Tuesday, April 9th, 4:00 pm to 5:30 pm PST/7:00 pm to 8:30 pm EST

Speakers: Dr. Lora Morandin and Anthony Colangelo, Pollinator Partnership

Once your habitat is planted and blooming, it is time to start seeing who visits! Learn about the general groups of pollinators, how to identify them, and how to track their populations through time using community science tools and resources.

- Pollinator ID: Who are the main pollinators, what are the characteristics of different groups and how do you tell them apart.
- Monitoring: What we know/don't know, how to monitor, tools, resources, examples of monitoring projects/databases, importance of monitoring, and community science.

## **Session 7 – Expand Your Impact!**

Tuesday, April 16th, 4:00 pm to 5:30 pm PST/7:00 pm to 8:30 pm EST

Speakers: Anthony Colangelo and Maddie Dong, Pollinator Partnership

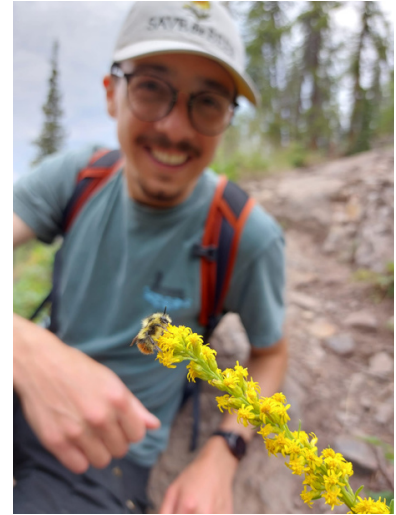
In this final session of the Pollinator Steward Certification training, we will discuss how to expand the impact of your work through communication, outreach, and education.

- Effective communication methods for neighborhood, community, and stakeholder engagement and forms of communication (signage, social media posts, etc.).
- Bee and butterfly houses – misconceptions and applications.
- Storytelling on social media and driving engagement.



## Meet Your PSC Instructors!

**Anthony Colangelo** is a biology enthusiast who received his Bachelor of Science degree at Queen's University majoring in Biology. Anthony has worked through multiple field seasons on many study organisms including tree swallows, black-capped chickadees, carrion beetles, and bumble bees. He loves to be outdoors to conduct research and is currently leading a Habitat Stewardship Program grant to learn more about the relationship between northern bumble bees, pollinators, and native plants in Yellowknife, Northwest Territories, Canada. Anthony has worked with Pollinator Partnership for 7 years and is the Outreach and Education Specialist. He is excited to be leading the 2024 Pollinator Steward Certification Program!



**Lora Morandin** has been doing research on bees and pollination since 1997. She started out working on bee pollination of greenhouse tomatoes at Western University in Ontario and that grew into an interest in native pollinator conservation and sustainable agriculture. She then did a PhD at Simon Fraser University in British Columbia studying modern agriculture and pollinators, followed by post-doctoral research at the University of California, Berkeley working on enhancement of native pollinators and natural enemy insects through small-scale farm restoration. Lora has co-authored books and book chapters, created outreach and technical guides, and has about 30 peer-reviewed publications on pollinators and sustainable agriculture, including innovative work on economic benefits of ecosystem services. She has consulted for government and industry on diverse ecological topics such as greenhouse coverings, seabird oiling from offshore oil and gas operations, and honey bee health research gaps. One of her main interests is finding ways that human land-use, production, and conservation can co-exist for a healthy and sustainable environment. Lora lives in Victoria, British Columbia and when she's not working she spends time on her urban farm, with her family and pets, and enjoying BC's beautiful natural areas.







## Meet the PSC Guest Speakers!

**Miles Dakin** has had a lifetime passion and love for insects. As a child he was raised on his mother's farm and at Bouverie Preserve, where his father lived, giving him a deep appreciation for conservation and land management. Miles spent countless hours hiking through the hills and fields of Sonoma County, chasing after newts and beetles. He went on to receive his B.S. in Ecology and Computer Science from Tulane University and recently received his M.S. in Entomology from UC Davis, focusing on Navel Orangeworm management in almonds and pistachios. Miles hopes to continue to bring his passion for conservation and his deep appreciation for mindful land management to P2 and the Bee Friendly Farming program.



**Maddie Dong** grew up in Palo Alto, CA where she developed a passion for rock climbing and the greater outdoors. She earned a Bachelors of Science degree in Natural Resources Policy & Management and a minor in Sustainability from Oregon State University in 2022 and decided to move back home to the San Francisco Bay Area. An experience performing Taylor's checkerspot butterfly habitat restoration in college fueled her dedication for pollinator conservation. Maddie is ecstatic about engaging her community in pollinator issues and starting her career in conservation.



**Andy Grinstead** grew up in Indiana, where he developed an enduring fascination for nature and exploration in the dense hardwood forests of the Hoosier National. He spent countless hours hiking, camping, building forts, and wandering the woods at night looking to uncover new natural mysteries. He wanted to share his passions for the outdoors and so pursued a degree in recreation with hopes of becoming an interpretive guide. Andy later discovered that to answer his childhood quandaries he needed to learn more about ecology and natural history, so he completed a masters specializing in ecological restoration. He has worked in the Northwoods of Minnesota, Great Plains of the Dakotas, mountains and foothills of Colorado, expansive deserts of New Mexico, and cascading gorges of Upstate New York. A common theme throughout his career has been community engagement and volunteerism in support of natural resource management initiatives. Andy is excited to share his enthusiasm for plants, pollinators, and human connection with Pollinator Partnership and community.





**Christine Gemperle** farms 135 acres of almonds across two ranches in Ceres and Gustine in Central Valley, California with her brother Erich. She’s a director for the Almond Board of California and serves on the Nutritional Research Committee, and is Vice Chair of the Biomass Workgroup. She’s also a lover of pollinators, serving on the board for Project Apis m., which funds and advocates for honeybee research and health. Christine grew up in farming. Her father, an immigrant from Switzerland, brought his almond growing skills to California with him, though she never imagined she would return to farming herself. With a mind for science and environmental crusading, she set her sights on saving the environment. She earned a Bachelor of Science in biology from UC Santa Cruz and a Master of Science in fisheries from Utah State University. As a woman breaking into farming after spending years raising her children, Christine knew she was a little behind the learning curve when it came to the farming she set out to do, but she had no problem asking questions whenever she didn’t know something. That inquisitiveness, paired with a passion for what she was doing, led her into the success she enjoys today as a self-proclaimed almond advocate and pioneer. One of Christine’s proudest accomplishments on the farm is the successful replanting of a 20-acre almond orchard. The rows are meticulously planted, pruned and interwoven with pollinator-friendly cover crops such as wildflowers and sweet peas.



**Brad Howie** is a speaker, land teacher, scientist, and founder of Manoomin Learning. He is of mixed European and Anishinaabe ancestry from Nipissing First Nation. With a diverse background in education, research, and science he authentically weaves Indigenous and western ways of knowing into his teaching practice. As a passionate viewer of pollinators and plants for many years he is ecstatic to share his knowledge with you all.







**Melanie Kirby** is an entomologist by education, agroecologist by practice, and a poet at heart. A registered tribal member of Tortugas Pueblo- a non-federally recognized mestizo Indigenous community located in southern New Mexico, Melanie has been practicing her cultural and traditional beliefs and practices for generations. She is a professional beekeeper and Extension Educator. She began first beekeeping as a U.S. Peace Corps Volunteer stationed in Paraguay, South America in the late '90s and fell in awe of the bees. The bees have since taken her around the globe to work with farmers, beekeepers, land stewards, and organizations such as the American Beekeeping Federation, USAID Farmer to Farmer Exchange, SlowFood International, Apimondia World Beekeeping Congress, Fulbright, and National Geographic. She cofounded Zia Queenbees Farm & Field Institute in the southern Rocky Mountains of northern New Mexico in 2005, specializing in breeding regionally adaptive bees, pollination services, field research, and outreach. She also serves as the Extension Educator for the Institute of American Indian Arts in Santa Fe, New Mexico where she collaboratively designs programming focusing on Traditional Ecological Knowledge (TEK) complemented with western sustainable agriculture science. Melanie was recently appointed by US Secretary of Agriculture, Tom Vilsak, to serve on an inaugural Pollinator Subcommittee for the National Agricultural Research, Extension Education, and Economics Advisory Board.



**Lea Millet** is a Senior Technical Leader at the Electric Power Research Institute (EPRI). Her work focuses on land and groundwater environmental issues in several areas, including coal combustion products (CCP), plant decommissioning and site redevelopment, T&D environmental issues, pollinators, and former manufactured gas plant (MGP) sites. Before joining EPRI, Millet served in land and groundwater environmental compliance and remediation roles for thirteen years with Southern Company and Georgia Power. Her projects included CCP management units, former MGP sites, PCB and arsenic issues in substations, substation retirements, remediation during plant decommissioning, remediation of legacy contaminated sites, and T&D brownfield construction. Prior to Georgia Power, she worked as an environmental consultant supporting remediation projects in the chemical and petroleum industries. Millet has a bachelor's degree in geology from Wittenberg University, and a master's in geology, specializing in geochemistry, from Louisiana State University. She is a licensed professional geologist in two states







**Jordan Phelps** is the Bee City Program Coordinator for Pollinator Partnership Canada. His passion for pollinators was sparked as an undergraduate at Western University, where he studied animal cognition and learned about the incredible feats of learning and memory that bees and other small-brained but mentally mighty pollinators are capable of. He went on to complete an MSc at Western in neuroscience where he studied how exposure to common pesticides impacts the ability of bumblebees to learn about and gather food from flowers. This experience launched a lifelong interest in pollinators – not only for the good of our food crops and the ecosystem, but also because they are fascinating creatures to watch and learn from. Jordan is delighted to bring this passion to Bee City Canada, where he works with municipalities, Indigenous communities, campuses, schools and businesses to make meaningful change for pollinators.



**Steve Sass** is a co-founder of Indiana Nature LLC, which includes the educational initiative indiananature.net, and its corresponding social media outreach. Their popular Facebook Group “IN Nature” contains the Great American Indiana Nature (GAIN) projects, which have engaged thousands of Hoosiers to collaboratively build a database of moth, butterfly, tree, and wildflower populations in the state. He resides in South Bend, Indiana, owns a small business specializing in electronics and volunteers as a conservation-focused, civic leader.



**Amanda Smith** is a co-founder of Indiana Nature LLC, which includes the educational initiative indiananature.net, and its corresponding social media outreach. Their popular Facebook Group “IN Nature” contains the Great American Indiana Nature (GAIN) projects, which have engaged thousands of Hoosiers to collaboratively build a database of moth, butterfly, tree, and wildflower populations in the state. She resides in Hamilton County, Indiana where she is the Superintendent of Natural Resources and Education for Hamilton County Parks.





**Lacey Smith** graduated from West Virginia University with a Bachelor's in Environmental Geoscience and a Master's degree in Forestry, with an emphasis on understory biodiversity. After graduate school, Lacey worked for the West Virginia Division of Natural Resources (WV DNR) and USDA Natural Resource Conservation Service (NRCS) as a Pollinator Specialist/Partner Biologist. In this role, Lacey provided outreach and technical assistance to agricultural producers and other private landowners seeking to enhance their lands for pollinators and other wildlife through USDA Farm Bill and other programs in north central West Virginia. Upon relocating to New York, Lacey worked as an Organic Certification Specialist, where she was able to assist producers in navigating the complicated process of becoming certified. She is thrilled to bring her passion and experience with pollinators, producers, and habitat together for her role as Pollinator Partnership's Northeast Regional Partner Biologist, located in central New York. In her spare time, she enjoys gardening, nature photography, and going on hikes with her husband.



**Sara Wittenberg** has a BS in Zoology (Auburn University) and a MS in Biology (University of Arkansas). Her experience includes interning at the national zoo in Costa Rica, directing the rehab program at the Southeastern Raptor Center, running a HawkWatch banding station in the Florida Keys, tracking gopher tortoises, conducting breeding bird surveys for the USFS and Sandhill Crane/Sage-Grouse surveys for the USFWS, and assisting with Cornell University's search for the (extinct?) Ivory-billed Woodpecker. She has taught/coaches science at two public secondary schools, and believes strongly in sharing her passion for the natural world with the next generation of conservationists! In her free time, Sara enjoys reading, hiking, birding, traveling, gardening, and exploring the beautiful Ozark mountains with her husband and two children. Sara joined Pollinator Partnership in early 2020 as the Project Wingspan Arkansas State Coordinator, then soon stepped into the role of AR NRCS Pollinator Liaison. Most recently Sara became Pollinator Partnership's Bee Friendly Garden Coordinator and is excited to grow the program and connect with those seeking ways to help pollinators on their own property!





Thank you for joining the Pollinator Steward Certification program, and for continuing to make the world a better place for people, plants, and pollinators!



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