

Toyota's Blossoming Commitment: Nurturing Biodiversity Through Bees and Butterflies

September 19, 2023

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Humans can't exist without biodiversity. Bees, butterflies and many other species are responsible for the food we eat, and their habitats provide us with fresh water, shelter and raw materials. Ecosystems provide over half of global GDP and encompass diverse cultural, spiritual and economic values.[1]

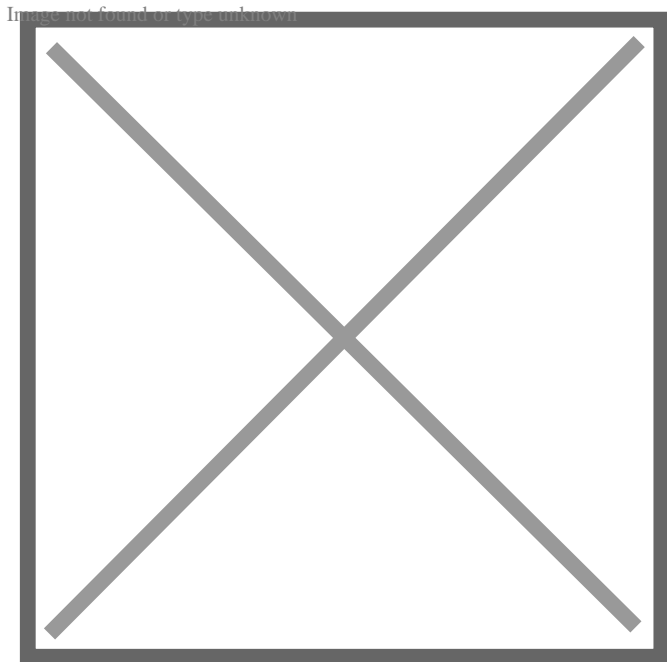
“Respect for the Planet” means protecting biodiversity is one of our highest priorities

Even though Toyota's business does not directly depend on nature in the same way as an agricultural or food and beverage company, we recognize the importance of biodiversity to the lives of our employees, customers and society in general.

Biodiversity is constantly under threat, whether from deforestation, species extinction or habitat loss. These threats are not new, but they are accelerating. In 2015, the United Nations (UN) established a global goal to protect biodiversity: **Goal 15: Life on Land** is one of the 17 Sustainable Development Goals (SDGs) that form the cornerstone of the UN's "2030 Agenda."

The 2030 Agenda is a 15-year plan (2016-2030) to end poverty, protect the planet and improve the lives of everyone, everywhere. We are now at the halfway point, and the UN is holding an SDG Summit this month to discuss the progress of the goals. According to a recent [UN report](#), some progress has been made on biodiversity, particularly in sustainable forest management, the designation of protected areas and the incorporation of biodiversity values into national accounting systems. But the overall trend is worsening and there is still much to do.

At Toyota Motor North America (TMNA), we are doing our part to contribute to the achievement of Goal 15. Biodiversity is one of TMNA's four environmental sustainability focus areas. Our strategy is crafted to leverage the expertise of specialists to help us safeguard species and restore habitats where feasible, and broaden the scope of our initiatives in communities to achieve greater conservation results.



Bees, butterflies & other vital pollinators support biodiversity

Biodiversity is a very broad concept, so we've chosen to focus on a group of important species familiar to us all: pollinators. Pollinators include bees, butterflies, moths, flower flies, beetles and bats. Everyone has encountered at least one. These species are vital to our food supply, with about 75% of crop plants requiring or benefiting from pollination. In fact, every third bite of food that we take is made possible by the efforts of pollinators.[2]

Pollinators can be found all around us, so we all have opportunities to help protect them. From a single pot of flowers on a balcony to a sprawling acreage of land, creating a pollinator garden of any size can help these vital creatures thrive.

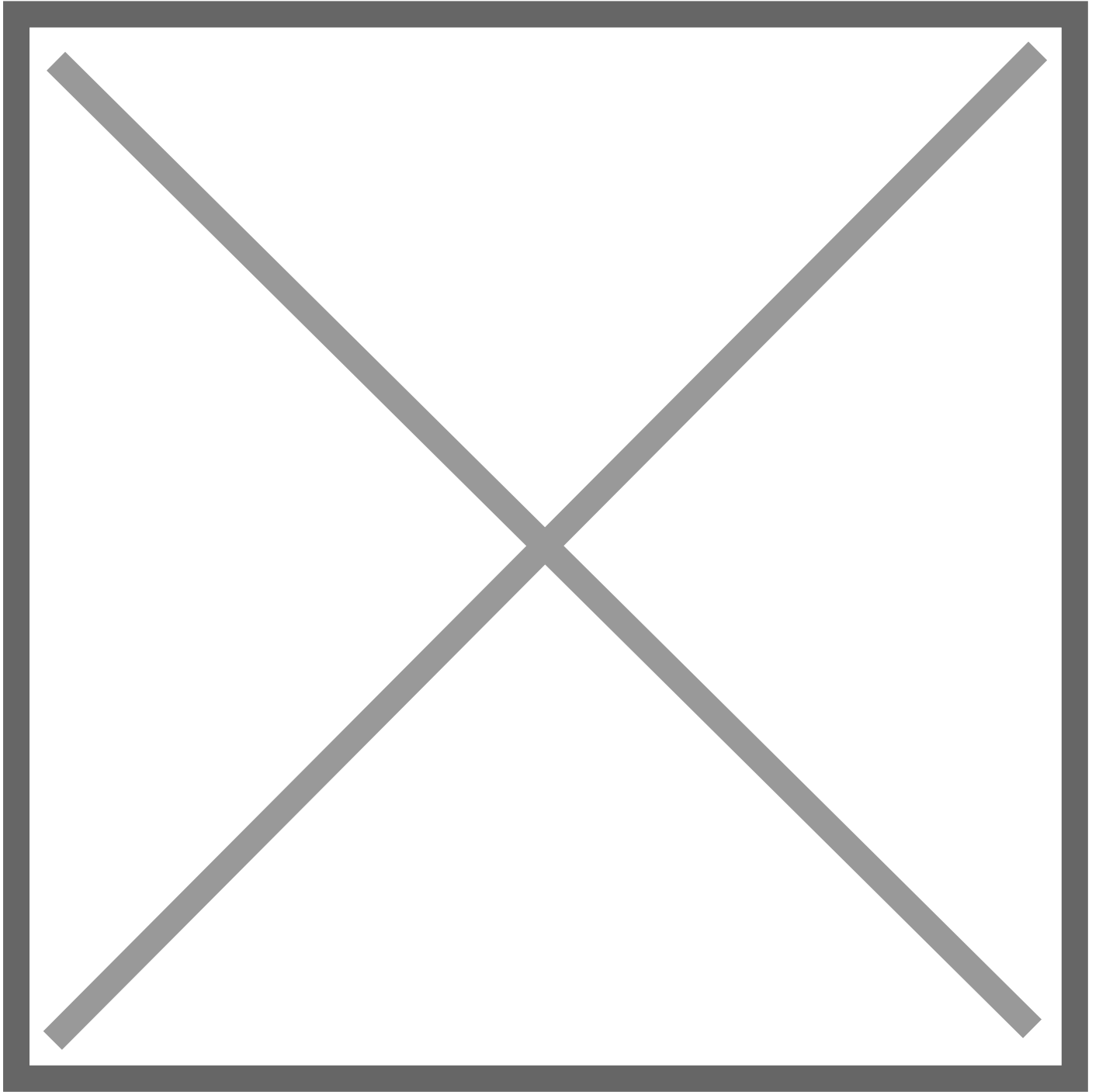
Our plans to enhance 26,000 acres of pollinator habitat

And speaking of habitat, the loss of habitat is one of the most pressing threats facing pollinators. That's why we have established a target within our current five-year environmental action plan to focus on pollinator habitat enhancement.

The target: enhance at least 26,000 acres of pollinator habitat in North America between 2021 and 2026. To achieve this target, we are providing support to two nonprofit organizations – the National Environmental Education Foundation (NEEF) and Pollinator Partnership (P2).

Target: Enhance 26,000 Acres of Pollinator Habitat in North America

Progress as of the end of FY2023



The Cincinnati Zoo & Botanical Garden was granted a six-month extension due to permitting delays that pushed them past the spring planting season. We will update the acreage at the end of 2023.

Project Spotlight: Supporting Pollinators at Gemperle Orchards

California's Central Valley is unique with its Mediterranean-like climate that is ideally suited to grow almonds, making it the source of roughly 80% of the world's supply.[3]

Pollinators – especially honey bees – are essential to the success of almond farms. Every almond we eat exists because a honey bee pollinated an almond blossom.

That’s why Gemperle Orchards, owned and operated by siblings Christine and Erich Gemperle, has been a long-time supporter of Pollinator Partnership (P2). Gemperle Orchards has been certified by P2 as a Bee Friendly Farm as part of participating in P2’s Bee Friendly Farming program. The program, through funding from TMNA, provides funds for plants, irrigation supplies and labor, which Gemperle Orchards used to purchase and install hedgerow plants in early 2023.

“Planting hedgerows has been a real gamechanger for the farm,” Christine Gemperle explained. “It not only supports pollinators, but it also brings many other benefits to the quality of the soil, water and function of the farm. We use less water and less chemical inputs in our operations because we choose to reap the natural benefits of pollinator habitat such as pollination services, erosion control, pest control, and water filtration and hold capacity, to name a few.”

Gemperle is preparing to plant a much larger hedgerow this fall, which will expand and enhance pollinator habitat on the farm.

Gemperle Orchards’ experience with pollinators highlights the intricate relationship between biodiversity, climate change and water. Climate change is making California more prone to water

scarcity, which in turn is leading to species and habitat loss. While California is mostly past the severe drought that plagued the state between 2020 and 2022, farmers had no choice during this period but to reduce the amount of water needed to grow crops. Almond growers responded with innovation and ever-increasing precision, developing new techniques to best conserve water. According to the Almond Board of California, 85% of California almond growers – including Gemperle Orchards – now use micro irrigation, which conserves water by applying it directly to a tree’s roots rather than across an entire field. The resulting decrease in water use also means less chemical use, which is beneficial for pollinators that can be sensitive to fertilizers and pesticides.

“An orchard is a long-term investment,” said Gemperle, “and we need to make sure that we adopt innovative sustainability practices and act like stewards of the land if we want to be here for the next generation.”

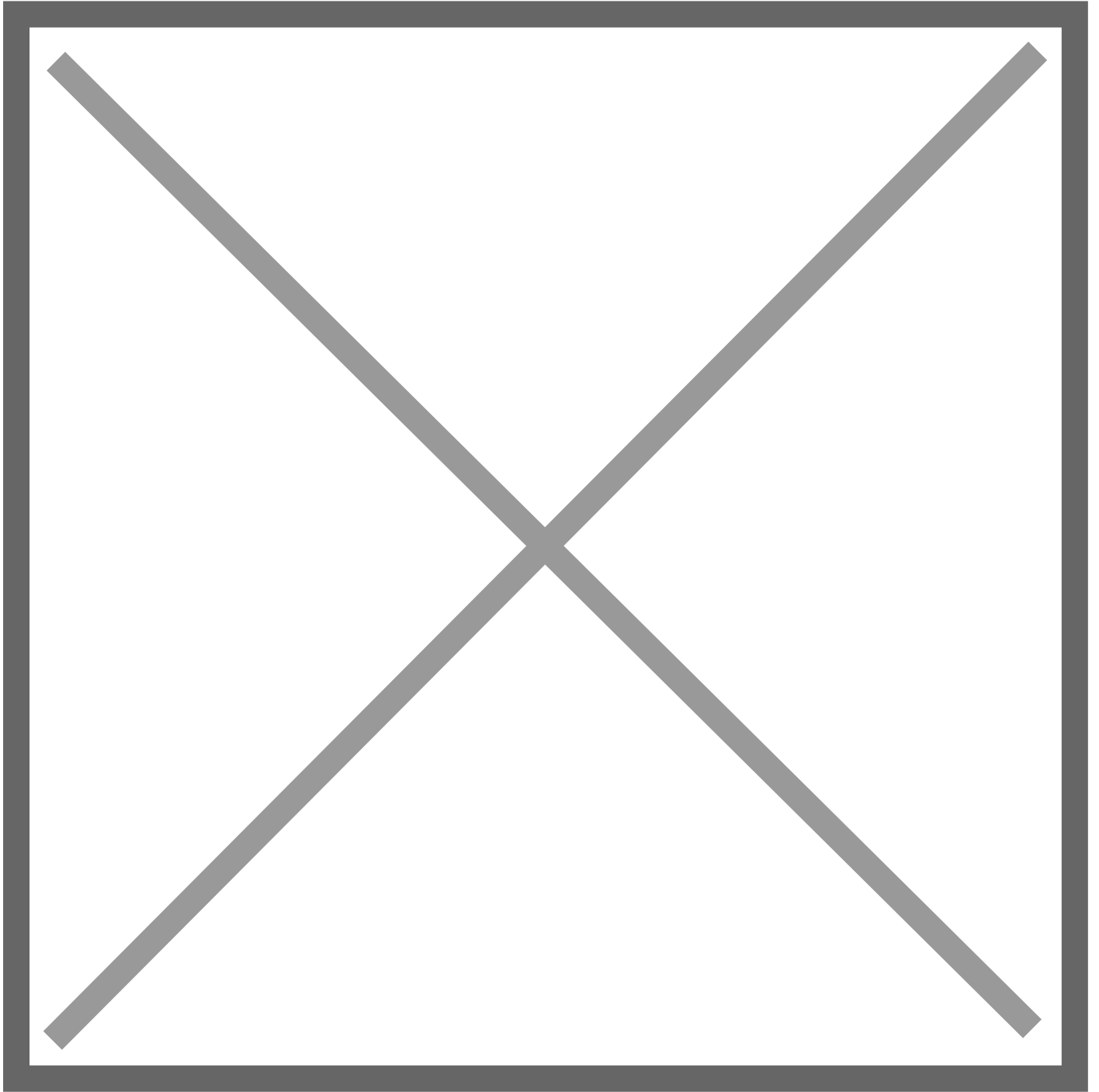
Projects Funded by NEEF’s 2022 Biodiversity Conservation Grants

With support from TMNA, NEEF provided \$200,000 in grant funding in support of two nonprofit organizations working on pollinator habitat enhancement projects in the United States. Habitat enhancement projects funded by this grant directly support the creation, restoration, remediation, improvement and protection of habitats for important pollinator species such as butterflies, bees, bats and more. Funds are also used to incorporate community outreach and engagement activities designed to educate the public and empower them to create and protect local pollinator habitats.

2022 Biodiversity Conservation Grants NEEF awarded two \$100,000 one-year grants to:

- 1. Catalina Island Conservancy in Avalon, California**
- 2. Cincinnati Zoo & Botanical Garden in Cincinnati, Ohio**

Grant Metrics to Date*



Grant metrics are provided to TMNA by NEEF as part of administering the grants. The grant period was from June 2022 to May 2023. The Cincinnati Zoo & Botanical Garden was granted a six-month extension due to permitting delays that pushed them past the spring planting season. Final data will be available at the end of 2023.

NEEF, with support from TMNA, recently awarded three 2023 Biodiversity Conservation Grants to support pollinator habitat enhancement projects on America's public lands. Projects are required to impact pollinators on

at least 150 acres of public land. The grant period started in July 2023 and will run to the end of June 2024.

- **The Urban Prairies Project** plans to plant native species, reseed restoration areas, remove noxious weeds and collect native plant seed for propagation across more than 3,000 acres on public lands in the Denver metro area.
- **Olmsted Parks Conservancy** plans to enhance and preserve more than 1,000 pollinator habitat acres across the Louisville, Kentucky, parks system, including Chickasaw Park, where volunteers will install a pollinator meadow to honor Muhammad Ali, who trained there in his youth.
- **The San Joaquin River Parkway and Conservation Trust, Inc.** plans to support understory plantings and seeding at closely connected San Joaquin River Parkway properties in California, where woody shrubs can provide protection and nectar sources for monarch butterflies and other pollinators.

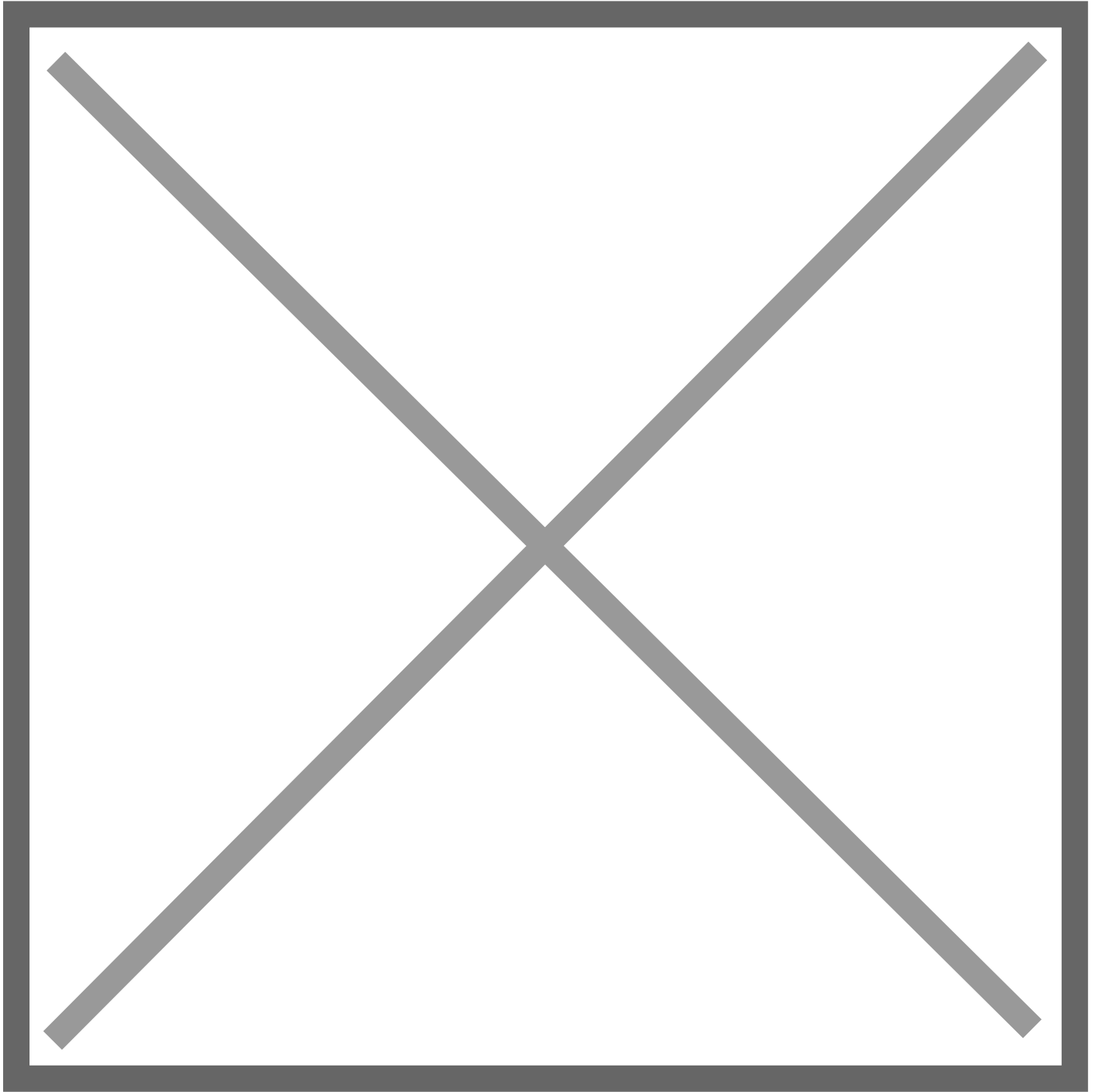
Pollinator Partnership Projects Support Pollinator Health

Since September 2021, Pollinator Partnership (P2) has collaborated with Toyota Motor North America (TMNA) to launch the **Pollinator Friendly Places initiative**. Through this program, P2 and TMNA are working together to create, enhance and protect thousands of acres of habitat for pollinators, increase landowner education, increase the implementation of best management practices, provide education and volunteer opportunities to Toyota staff and the public, and ultimately support the health of pollinators across North America.

For each project that P2 supports with funding from Toyota, native plant species are carefully selected to ensure they are well-suited to the local environment. This approach provides a number of benefits, such as increased resilience to difficult growing conditions, lower water requirements, and deep root systems that help keep soil in place.

Choosing native plants also has the benefit of providing a home to native pollinators and other beneficial insects, many of which have developed close associations with native plants. In some cases, a certain plant species or genus will be the only type of plant that is eaten by a species of insect. These plants, known as host plants, are vital parts of pollinator habitat and are featured in the species distributed to plant awardees.

As of the end of fiscal year 2023, P2 has helped enhance 12,577.6 acres across the United State, Canada and Mexico. Check out [P2's map](#) to see where they are working to improve habitat and create a better future for pollinators.



The P2 partners and projects listed above are funded through TMNA's grant to P2.

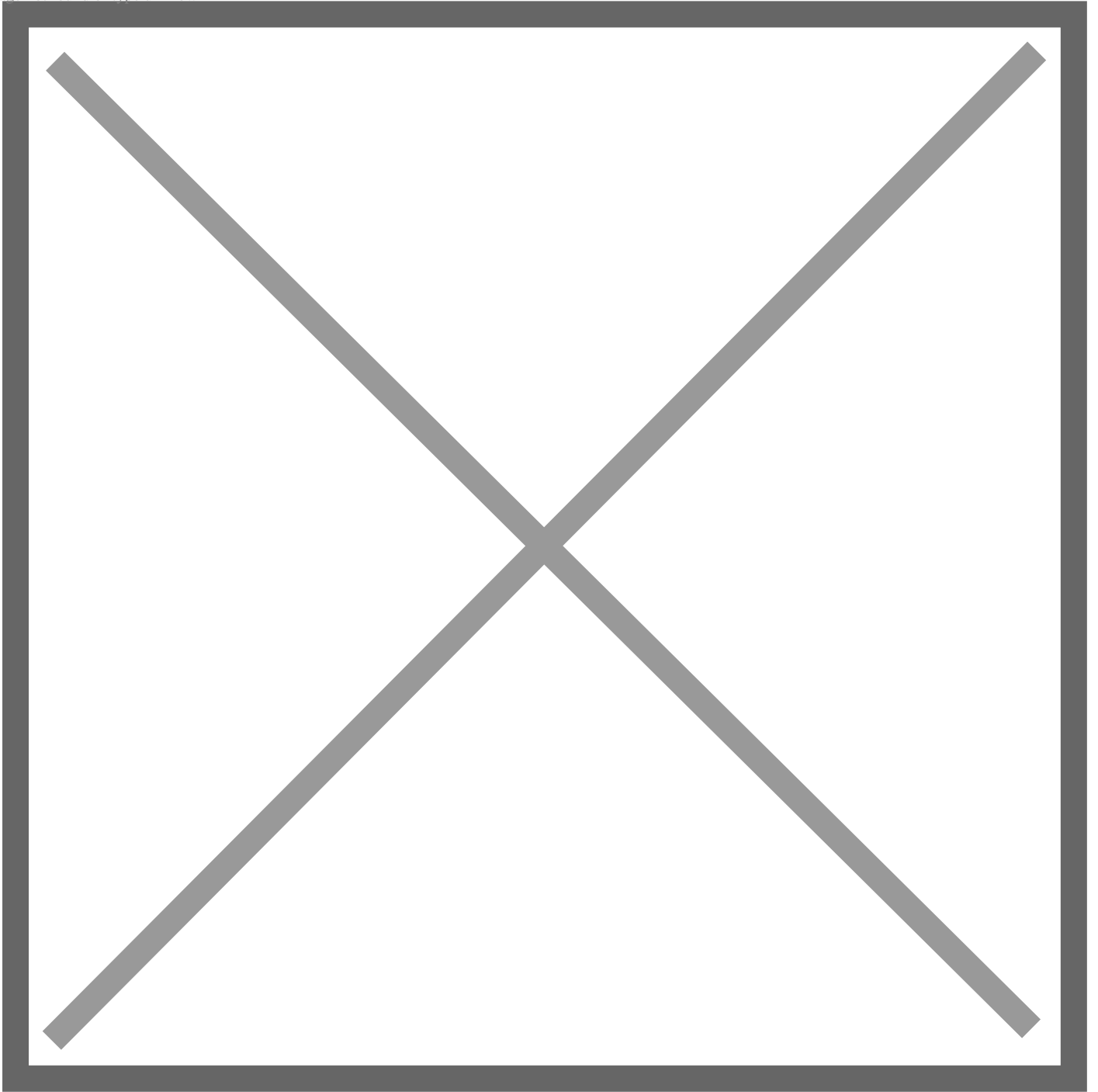
Catalina Island Conservancy (Avalon, California) Provides Service Opportunities

The Catalina Island Conservancy is dedicated to protecting 88% of Catalina Island, including over 62 miles of untouched beaches and remote coves. This remarkable landscape is home to more than 60 species of endemic plants, animals and insects. The NEEF grant project is focused on providing critical invasive plant species management to improve targeted habitats for the Avalon Hairstreak butterfly, Catalina orange streak butterfly,

cuckoo bee and the Allen's hummingbird. In honor of the Conservancy's dual focus on conservation and education, the grant project also included several engagement programs related to these native pollinators and the habitat work.

To manage invasive species, the Conservancy worked with a crew from American Conservation Experience (ACE), a nonprofit organization dedicated to providing rewarding environmental service opportunities for young adults and emerging professionals of all backgrounds to explore and improve public lands while gaining practical professional experience. Three interns were even hired full time! By combining ACE and regular volunteer efforts, an impressive 2,737.5 acres of Catalina were cleared of Flax-leaved Broom and other invasives. In addition, the Catalina education team integrated invasive plant management topics into ACE's K-12 education programs, Naturalist Level 2 adult excursion and a virtual lecture for the community.

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Toyota volunteers helped to improve pollinator habitat on Catalina Island in California by removing invasive sea rocket plants from sand dune habitat at Little Harbor beach.



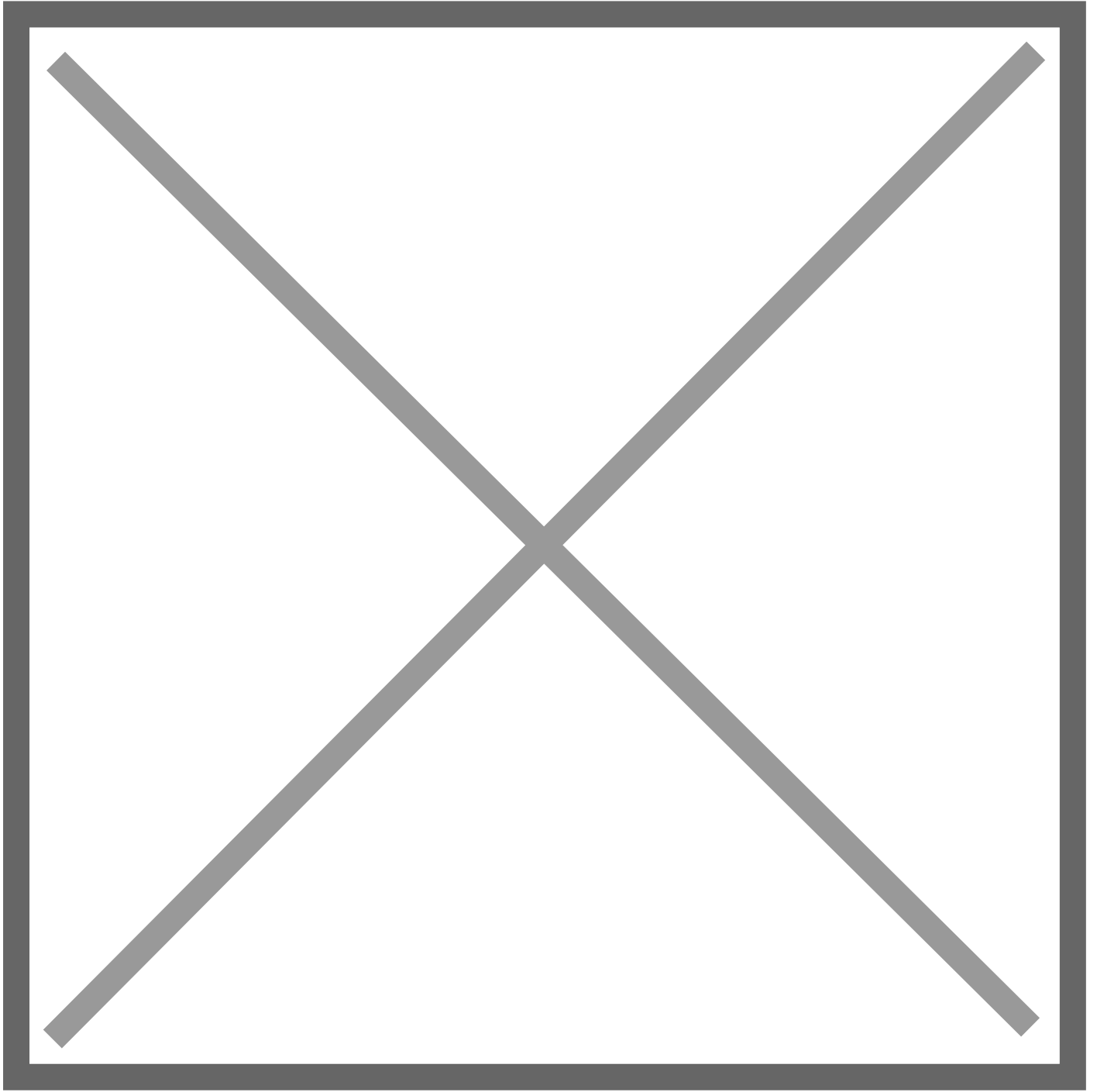
Cincinnati Zoo & Botanical Garden (Cincinnati, Ohio) Shares Their Expertise

The Cincinnati Zoo & Botanical Garden is home to an award-winning horticulture department, which, in addition to maintaining the Zoo's expansive botanical garden, also serves neighboring communities by revitalizing parks and playgrounds with landscaping and pollinator gardens. Their **Plant for Pollinators program** shares this expertise with community members while encouraging them to create their own pollinator habitats, with over 2,400 gardens registered since 2019. The grant project has made the installation of a sustainable pollinator garden in the Avondale community possible through a series of six pocket parks. The

project not only adds and improves pollinator habitat in the urban Cincinnati area, but also adds gardens in areas lacking greenspace.

As of June 2023, the Cincinnati team has installed the first of six pollinator gardens at Irving Playground and is in the process of installing the second at Northern Laron Park. These gardens are the result of a year in permitting and extensive community engagement. With the help of the grant, the community was able to organize science and engagement events as well as two large-scale volunteer events with Avondale neighbors and Toyota's employees. These events are key for increasing public awareness and support for pollinators. Plans are now being made for additional volunteer events in the future plus a BioBlitz, an event that focuses on finding and identifying as many species as possible in the area.

The Cincinnati team exhibits impressive dedication to true community engagement and participation with these pollinator garden projects. By honoring the Avondale Quality of Life Plan, they are “supporting the community’s vision for safe, natural spaces with our botanic and landscaping expertise—which, in simultaneously achieving the grant’s goals, will prioritize pollinator habitat.”



Toyota volunteers helped to improve pollinator habitat by potting plug plants that will be installed at the Irving Playground in the Avondale Community in Ohio, near the Cincinnati Zoo & Botanical Garden.



1 [The Sustainable Development Goals Report 2023, Special Edition](#), United Nations, page 42.

2 [The Importance of Pollinators](#), U.S. Department of Agriculture

3 [California Almond Industry Facts](#), Almond Board of California, June 2016