The future is on their wings.

ZOO LIFE POLLINATORS - Zoos as local restoration and conservation hotspots in urban and peri-urban areas and citizen science ambassadors to reverse the decline of pollinators in anthropic spaces

DELIVERABLE - D4.1

Inventory of Available Innovative Educational and Citizen Science Initiatives for Pollinators

DATE 17/12/2025

Compiled by:
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Project 101215817 — LIFE24-NAT-IT-ZOO LIFE POLLINATORS

ZOO LIFE pollinators

The future is on their wings.

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BENEFICIARIES

IMMERSIVE PARKS SRL (ZOOM), Italy

FONDAZIONE ZOOM - ENTE TERZO SETTORE (FONDAZIONE), Italy

SMART REVOLUTION SRL (SMART), Italy

UNIVERSITA DEGLI STUDI DI TORINO (UNITO), Italy

USTANOVA ZOOLOŠKI VRT GRADA ZAGREBA (ZAGREB ZOO), Croatia

ZOOLOGISK HAVE I KOBENHAVN (COOPENHAVEN ZOO), Denmark

SVEUČILIŠTE U ZAGREBU AGRONOMSKI FAKULTET (UNIZG), Croatia

MUSEO DEL CAMPO MAJORERO,S.L. (FUERTEVENTURA), Spain

STIFTELSEN NORDENS ARK (NORDENS_ARK), Sweden

GOTEBORGS KOMMUN (GOTEBORG ZOO), Sweden

GRADINA ZOOLOGICA (BRASOV ZOO), Romania

NAGYERDEI KULTURPARK KOZHASZNU NONPROFIT KFT (DEBRECEN ZOO), Hungary

ABOUT

This collection of available innovative initiatives in the field of education and citizen science on pollinators was developed within the framework of project ZOO LIFE POLLINATORS (task T4.1, coordinated by ZAGREB ZOO). The inventory is the result of comprehensive desk research conducted by all project partners.

The aim of the inventory is to provide a practice-oriented digital tool highlighting a selection of initiatives that are particularly suitable for replication by zoos and similar institutions. For each initiative key elements are presented, including main goals, required resources, contact information, benefits, and potential challenges. The inventory also includes tailored recommendations for implementation, serving as a useful guide for partners and stakeholders planning to develop their own educational or citizen science activities focused on pollinators.

Beyond its informative function, the inventory is also a tool for raising awareness on pollinator conservation and for engaging new stakeholders in future project activities.

Edition 1
December 2025

FUTURE UPGRADE

All stakeholders are welcome to continue contributing to the development of this inventory — if you come across a valuable initiative that could be included, please send the information to pollinators@zoo.hr, and it will be considered for the next version of the inventory.

ALL-IRELAND POLLINATOR PLAN 2021 – 2025

COUNTRY AND REGION Ireland - Europe

ABOUT INITIATIVE

The All-Ireland Pollinator Plan for 2021 – 2025 is a five-year roadmap that aims to help bees, other pollinating insects, and our wider biodiversity. The new Plan is even more ambitious than the first (2015 – 2020) – with more partners coming together to deliver more actions this time around. It is about encouraging a better way of managing the whole landscape to permanently support Ireland's struggling biodiversity. The AIPP 2021-2025 has 186 actions spread across six objectives. It was developed by a 16-member steering group who provide oversight, with implementation coordinated by the National Biodiversity Data Centre. Responsibility for delivering the actions contained in this new Plan is shared out between the main partner organisations. The Plan does not have a project budget. Instead, those organisations who have committed to taking action, agree to fund those actions themselves. The All-Ireland Pollinator Plan is voluntary.

MAIN GOALS

- **Making farmland pollinator friendly**. By working together with the farming community, the plan aims to increase awareness of pollinators and the resources they need in order to survive on farmland.
- **Making public land pollinator friendly.** By working together with Councils, Transport Authorities, Local Communities and others, the initiative aims to foster coexistence with biodiversity and help return food and shelter for pollinators to Ireland.
- **Making private land pollinator friendly.** From gardens, to businesses, faith communities and sports clubs, the goal is to facilitate collaboration to create networks of biodiversity-friendly habitat across the landscape
- **All-Ireland Honeybee Strategy.** By supporting beekeepers, the plan seeks to ensure healthy, sustainable populations, and for honeybees to be part of a cohesive pollinator message that balances managed and wild pollinator populations.
- **Conserving rare pollinators.** By improving our knowledge on rare pollinators, and by raising awareness through dedicated initiatives, the goal is to protect as much wild pollinator diversity as possible.
- **Strategic coordination of the Plan.** By continually raising awareness; addressing gaps in existing knowledge through research; and by tracking where pollinators occur and how populations are changing, the Plan operates from an evidence base that enables coordination of a dynamic plan that is targeted and effective.

KEY ACTIVITIES

- Incorporate relevant evidence-based pollinator friendly actions and prescriptions into agricultural and agri-environment schemes in Republic of Ireland (RoI).
- Encourage more organic farming (which has been shown to support more pollinators).
- Establish a network of stakeholders, including agri-businesses who agree to manage their own farms or test sites in a pollinator friendly way, e.g. DAFM, AFBI, individual agri-businesses.
- Encourage the responsible and sustainable use of pesticides (insecticides, herbicides and fungicides) in RoI.
- Provide comprehensive and freely available online resources for the farming sector.
- Publish a guideline document outlining evidence-based pollinator actions for forestry.
- Publish a guideline document that links pollinator/biodiversity actions to their carbon/climate benefits on farmland.
- Monitor pollinators across a network of farmland sites.
- Develop a Citizen Science recording scheme for farmland.
- Encourage the development of 'Pollinator-friendly Parks' on public land, i.e. parks that demonstrate a wide range of pollinator-friendly actions.
- Promote pollinator-friendly management of future transport routes, e.g. future greenway cycle routes
- Provide comprehensive and freely available online resources for Schools.
- Run a 'Pitches for pollinators' summer campaign to leave school pitches unmown during the summer holidays to provide food for pollinators.
- Deliver community-based training on Ireland's bees, bee monitoring and bee-friendly habitat creation.
- Conferences used as a means of disseminating good practice to beekeepers.
- Expand beekeeping qualification courses to cover other environmental issues, including impacts of beekeeping on native pollinators.
- Publish how-to-guides on protecting rare pollinator species.
- Publish an All-Ireland Hoverfly Red List.
- Organise field meetings with volunteer recording networks to search for rare species.
- Distribute a monthly digital newsletter to the mailing list.
- Organise an annual AIPP conference.
- Maintain data on wild pollinator distribution and make available through an online Atlas of Irish pollinators and the NBN Atlas for Northern Ireland.
- Maintain and grow Citizen Science pollinator monitoring networks and databases.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- Partner organisations
- Supporting organisations
- Community

CONTACT INFORMATION

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Carriganore, Waterford, Ireland.

ADDITIONAL SOURCES / LINKS

pollinators.ie

All-Ireland Pollinator Plan 2021-2025

CHALLENGES FOR REPLICATION

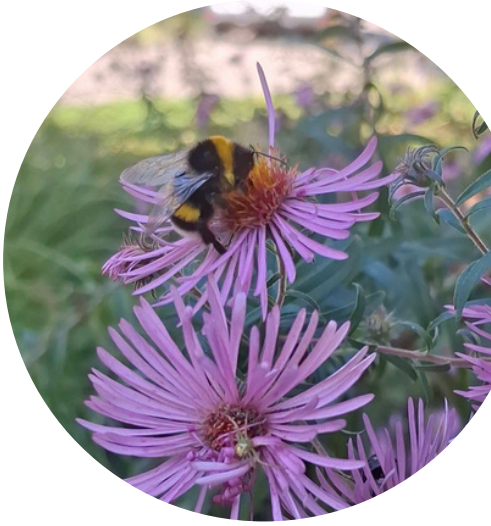
- Relies on voluntary partner contributions, no funding.
- Coordinating diverse stakeholders.

BENEFITS FOR ZOOS

- Integration with long-term citizen science data provides valuable context to in-situ zoo ecological research.
- Zoo grounds as demonstration sites.
- Networking.
- Community engagement & education.

BEE ACTIVE

Mobilizing Citizens for the Conservation of Bees and Other Pollinating Insects in Romania



COUNTRY AND REGION Romania – Europe

ABOUT INITIATIVE

In Romania, there are currently no legislative measures in place that can effectively halt the decline of pollinator populations. Project aims to put this issue on the public agenda and to encourage decision-makers to initiate the development of an action plan for the conservation of pollinators, including measures to support nature-friendly agricultural practices.

This can be achieved through:

1. Create an informal alliance for pollinator conservation.
2. Support the need for an integrated action plan for pollinator conservation.
3. Raise awareness and educate.

MAIN GOALS

- Creating an informal alliance for pollinator conservation.
- Supporting the need for an integrated action plan for pollinator conservation.
- Raising awareness among youth and the general public about the ecological and economic importance of pollinators.
- Creating of an app for identifying plant species along with their pollinators in Romania.

KEY ACTIVITIES

- Improving national legislation: Bee Active aims to influence authorities to develop and implement a national action plan for pollinator conservation, similar to those already in place in other EU member states.
- Development of an interactive mobile application: Bee Active is collaborating with programmers and designers to create an app to identify plant species along with their pollinators, in Romania.
- Creating an Alliance for Pollinator Conservation: Bee Active promotes collaboration between NGOs, educational institutions, and authorities to develop integrated solutions for protecting pollinators.
- The “To Bee or Not to Bee” Campaign: This national petition calls for the withdrawal of derogations allowing the use of neonicotinoid pesticides and the development of a national action plan for pollinator conservation.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- Environmental Experts
- App Developers and Designers
- Communication Specialists
- Community Outreach Coordinators
- Operational Expenses
- Digital Infrastructure
- Multimedia Equipment
- Software Tools
- Partnerships and Collaboration: NGOs and Academic Institutions, Government Agencies, Local Communities and Farmers

CONTACT INFORMATION

ADDITIONAL SOURCES / LINKS

BeeActive Official Page (English)

CHALLENGES FOR REPLICATION

BENEFITS FOR ZOOS

- Enhance Conservation Impact

By launching a pollinator-focused program, zoos can expand their conservation efforts beyond captive animals to include crucial wild species like bees and other pollinators that support entire ecosystems.

- Increase Public Awareness and Education

Zoos attract diverse visitors and are trusted sources of information. They can use the initiative to educate the public about pollinators vital roles, threats they face, and simple actions people can take to help, thus amplifying outreach.

- Engage Local Communities

Zoos often have strong community ties. By involving local schools and volunteers in citizen science projects or habitat creation for pollinators.

- Support Research and Monitoring

Zoos can contribute to scientific knowledge by collaborating on research projects monitoring pollinator populations and habitat health, enhancing their role as conservation hubs.

- Limited Expertise in Pollinator Ecology

Zoos typically focus on vertebrates and may lack in-house expertise on insect ecology, especially pollinators, requiring new hires or partnerships with specialists.

- Public Engagement Difficulties

Pollinators are less charismatic than large mammals, so attracting and sustaining public interest and participation can be challenging.

- Measuring Impact

Monitoring pollinator populations and assessing program effectiveness can be technically challenging and resource-intensive.

- Seasonality and Environmental Factors

Pollinator activity is seasonal and sensitive to environmental changes, which can affect timing and outcomes of educational and conservation activities.

ADDITIONAL NOTES

Cross-sector Collaboration Strengthens Impact

Successful pollinator conservation requires partnerships between NGOs, academia, government bodies, farmers, urban planners, and the public. Aligning interests and resources amplifies outcomes.

Long-term Commitment Is Necessary

Pollinator decline is a complex issue linked to habitat loss, pesticide use, climate change, and diseases. Long-term projects and policy commitments are essential to see sustained positive effects.

Legislative Support Often Lags Behind Scientific Needs

One challenge highlighted by BeeActive is the lack of robust legislative frameworks to protect pollinators, especially in countries like Romania. Advocacy and evidence-based policy proposals should be integral components.

Educational Programs Should Target All Ages

Engaging children, students, farmers, urban residents, and policymakers requires tailored educational approaches and materials to effectively change behaviours and attitudes.

Monitoring and Evaluation

It is important to build monitoring and evaluation frameworks from the start, setting clear indicators for ecological and social impact to guide project adjustments and demonstrate success to funders.

BEE FRIENDS

COUNTRY AND REGION Piedmont (Italy) – Europe

ABOUT INITIATIVE

Bee Friends is a project by Fondazione ZOOM, supported by Fondazione Compagnia di San Paolo, aimed at protecting pollinating insects and promoting biodiversity in the Piedmont region.
At the heart of the initiative is the Pollinator Garden (a 13,000 m^2 area near the ZOOM Biopark in Cumiana), designed as a pollinator-friendly habitat. Native plants were carefully selected and planted to support pollinators throughout their entire life cycle, in collaboration with the University of Turin.
The project actively involves the local community near the Zoom Biopark: schools and municipalities are engaged through educational workshops, events, and hands-on activities like building "Bug Hotels" for pollinators.
Bee Friends aims to create a stable ecological corridor, raise awareness about the importance of pollinators, and encourage sustainable practices at the local level.

MAIN GOALS

- To conserve native pollinators and their habitats in the Piedmont region.
- To enhance local biodiversity through ecological restoration and community involvement.
- To raise public awareness about the vital role of pollinators in ecosystems and food production.
- To promote sustainable land use practices at the municipal and individual level.

Specific Objectives

- Create and maintain a large-scale Pollinator Garden with native flowering species to support pollinator populations year-round.
- Encourage the creation of "pollinator corridors" by connecting green spaces across municipalities.
- Provide nesting sites and shelters (e.g., Bug Hotels) for solitary bees and other pollinators.
- Involve local schools through interactive workshops, hands-on gardening, and biodiversity activities.
- Teach children and adults about the ecological importance of bees and other pollinators.
- Organize guided visits, events, and bioblitzes.
- Encourage citizens to monitor pollinators and flowering plants using simple observation tools like field guides.
- Distribute educational kits and training materials for schools and families.
- Collaborate with local municipalities and stakeholders to integrate pollinator-friendly practices in urban planning.
- Creation of a free identification guide for local pollinators.
- Cration of a free botanical guide with information on which plants and flowers to plant to make gardens and balconies pollinator friendly.

KEY ACTIVITIES

The main activities carried out in schools are:

- After learning about the specific characteristics of pollinating insects, students build their own insect using recycled materials.
- Building bug hotels to be used as decorations for school gardens and municipal flower beds.
- Using Kamishibai to read a story.
- Creating seedbeds using seeds from selected native plants.
- Identifying and designing areas so that they become pollinator friendly.
- Creating materials to explain the compound eye of insects and UV vision.

The main activities carried out within the municipalities are:

- Identification and design of areas to be made pollinator friendly.
- Organizing events to involve citizens in spreading good practices for the protection of pollinating insects.
- Creating pollinator-friendly flower beds with the active involvement of citizens, thanks to the planting of native plants and the installation of furnishings (such as bug hotels and information boards).

The main activities carried out at the Pollinator Garden are:

- Census, by researchers from the University of Turin, of the main species of pollinating insects present in the area.
- Creation of a public garden, with benches, tables, bug hotels, information signs, planted with native plants to increase local pollinators.
- Activities with schools: sowing through the preparation of seed bombs and subsequent guerrilla gardening and census activities of the main insects thanks to field guides. Installation and creation of bug hotels.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- Human resources:
  - for activities in schools and in the pollinator garden
  - for events aimed at creating pollinator-friendly flower beds in municipalities
  - for general project management
- Financial resources:
  - for the involvement of municipalities
  - for the creation of events
  - planting of flower beds and Pollinators Garden
  - for the involvement and activities for approximately 1,000 children
  - for the installation of furnishings (notice boards, information panels, insect shelters, nameplates)

CONTACT INFORMATION

michela.cogo@fondazionezoom.it

ADDITIONAL SOURCES / LINKS

https://www.fondazionezoom.it/beefriends

Identification guide for local pollinators

Botanical guide for pollinator friendly gardens and balconies

CHALLENGES FOR REPLICATION

BENEFITS FOR ZOOS

Since it is a project carried out by one of the partners, it would be easy to access all the information needed to replicate it. Furthermore, the project could provide ideas for involving the communities surrounding the zoos in creating a community that is aware of the issues related to pollinating insects and equipped with the knowledge needed to establish pollinator-friendly areas. In this way, the areas within the zoos would not remain isolated zones, but instead, a true ecological corridor would be created in the surrounding areas to help safeguard pollinating insects.

The challenges related to replicating the project could be linked to the geographical location of the zoos: not all zoos may be surrounded by small towns, but could instead be located near large urban centres. From direct experience, engaging small communities is easier than engaging large ones. Furthermore, it is important to understand the relationships between the zoo and the surrounding municipal administrations: zoos are not always viewed favourably, and this could create obstacles in involving local citizens in the project.

BEE THE SOLUTION!

Tehetsz méh többet!

COUNTRY AND REGION Hungary – Europe

ABOUT INITIATIVE

The program was created to protect bees – the most important pollinators – by drawing attention to both global and local issues and offering possible solutions. It places special emphasis on the importance of domestic beekeeping and pollination, honey production, and the beneficial effects of honey consumption on health. The initiative aims to provide people of all ages with an objective understanding of the biological and economic significance of beekeeping, bee protection, and honey production.

MAIN GOALS

- Draw attention to the drastic decline in pollinator insect populations, which threatens not only biodiversity but also food production.
- Contribute to improving the situation of domestic beekeeping operations, which provide a livelihood for more than 20,000 families.
- Increase the consumption of genuine, locally produced honey, whose physiological benefits have long been known, yet its consumption shows a declining trend.

KEY ACTIVITIES

- Organising large-scale exhibitions that present the world of bees with professional content and impressive installations.
- Holding drawing competitions and interactive roadshows.
- Publishing children's books, colouring albums, and cookbooks on the topic of pollinators.
- Introducing a "green credit card" that supports domestic beekeepers through purchases made by cardholders.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

The program was launched in 2020 through the cooperation of governmental, professional, and private stakeholders, with broad public involvement.

Main organizer: Pressinform PR Agency.

Strategic partners: Pannon Értéktár Ltd., National Hungarian Beekeeping Association, Agricultural Marketing Centre, Hungarian Natural History Museum, NetMédia, TV2 Group.

CONTACT INFORMATION

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ADDITIONAL SOURCES / LINKS

- www.tehetszmehtobbet.hu

CHALLENGES FOR REPLICATION

BENEFITS FOR ZOOS

- In addition to their role in species conservation, zoos also play an important part in education and public awareness. The elements of the program can be easily adapted to a zoo environment and are well-suited to engaging a wide range of visitors.

BEE WATCHING

COUNTRY AND REGION Italy – Europe

ABOUT INITIATIVE

Bee Watching is a project that aims to shed light on the state of bees in Italy. It was conceived within two research institutions—the Agriculture and Environment Centre of CREA and the Department of Biological, Geological, and Environmental Sciences of the University of Bologna — but aims to be open to all citizens of all ages, creating a large community of nature lovers who observe the environment and seek to understand which pollinators exist in Italy and which are in difficulty.

MAIN GOALS

- To record and map the bee species in Italy to create an inventory.
- To guide biodiversity protection policies in the region
- To raise awareness and knowledge about bees among citizens.

KEY ACTIVITIES

- Recording of all bee species occurrence in Italy, by photographing them and reporting location via digital platform.
- Providing basic information about bee families and species.
- Providing basic information about how to help bees in gardens and urban areas.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- Digital platform for uploading photos and records (reporting system).
- Staff for coordination and data processing.

CONTACT INFORMATION

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40128 Bologna BO

ADDITIONAL SOURCES / LINKS

https://www.beewatching.it

CHALLENGES FOR REPLICATION

- Challenge can be providing good and powerful digital platform and space to store large number of photos, staff to coordinate activities and to process data and determination of species.

BENEFITS FOR ZOOS

- Zoos can organise a huge network of citizens that participate in massive observing and mapping of pollinators species and they can provide huge amount of data valuable for conservationist and governmental bodies.

BIOBLITZ GOTHENBURG

COUNTRY AND REGION Göteborg (Sweden) – Europe

ABOUT INITIATIVE

A bioblitz is a 24-hour event where experts, enthusiasts, and curious visitors come together to find, identify and report as many species (including pollinators) as possible in one dedicated area. The area can be changed from year to year or be the same.
The aim is both to increase the general public's knowledge about species, importance of biodiversity and reporting, as well as collecting inventory data for areas.

MAIN GOALS

- The aim is to increase the general public's knowledge about:
  - Species,
  - Importance of biodiversity,
  - Reporting and citizen science.
- The aim is also to collect inventory data and report in iNaturalist (and the national app Artdatabanken).

KEY ACTIVITIES

Bioblitz Gothenburg is a yearly event conducted by several partners, and Göteborg Zoo is one of them. The area is changed from year to year, but the concept is the same:

- Zoo visitors and the general public are invited to a specified area;
- To mark the area and to have a clear meeting place, a "Bioblitz-square" has been created with tents (including tables with microscopes, posters, books, etc.);
- Experts are in place at the square and are moving around in the area to help participants find species and assist with species determination. Time-scheduled guided inventory tours with experts are also conducted several times during the event. Additionally, other activities (for example, building bird nesting boxes and quizzes) have also been arranged at the square.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- Human resources: it is time demanding to plan the event since it demands a quite large group of experts and a lot of coordinating.
- Knowledge about iNaturalist but the app is free to use, no fee charge.

CONTACT INFORMATION

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ADDITIONAL SOURCES / LINKS

Bioblitz Göteborg

iNaturalist

CHALLENGES FOR REPLICATION

- A Bioblitz can be a small event with some few experts, but if the aim is to find as many species as possible with many visitors participating this kind of event demands many experts and high-level logistics which is time consuming to plan and conduct.

BENEFITS FOR ZOOS

- Engagement with the local community.
- Fulfilment of the zoo's aim to increase knowledge about biodiversity.
- Connection with experts outside own organization.
- If an area inside or nearby the zoo is used, the zoo will have increased knowledge about species in the area which is useful when conducting measurements in situ in the zoo area.

BUTTERFLY MONITORING SCHEME

COUNTRY AND REGION EU (multiple countries) – Europe

ABOUT INITIATIVE

The Butterfly Monitoring Scheme is a long-running citizen science programme that uses standardised transect walks to monitor butterfly populations. It contributes to biodiversity indicators and helps track trends linked to climate change and land use.

MAIN GOALS

- To monitor butterfly populations at local, national, and European scales.
- To engage volunteers in long-term biodiversity monitoring.
- To provide robust data for conservation planning.

KEY ACTIVITIES

- Training volunteers to carry out regular transect counts.
- Data collection, validation, and reporting.
- Sharing results through reports and open-access databases.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- Coordination staff and volunteer network.
- Training materials and field guides.
- Database systems for data entry and analysis.

CONTACT INFORMATION

ADDITIONAL SOURCES / LINKS

https://butterfly-monitoring.net

CHALLENGES FOR REPLICATION

- Requires regular commitment from volunteers.
- Standardised methodology must be followed to ensure data comparability.

BENEFITS FOR ZOOS

- Zoos can adopt butterfly transects in their grounds or partner with local volunteers.
- Opportunity for education programmes linked to real monitoring data.
- Supports local biodiversity and habitat improvement.

ADDITIONAL NOTES

Additional sources:

- European Environment Agency biodiversity indicators.
- Local butterfly conservation NGOs.

CRO BUZZ KLIMA

Wild pollinators of Croatia and climate change adaptation

COUNTRY AND REGION Croatia

ABOUT INITIATIVE

Cro Buzz Klima is a national initiative focused on investigating the status of wild pollinators in Croatia and their response to climate change. The project involves standardized field research across five pilot localities, targeting wild bees (Anthophila) and hoverflies (Syrphidae). By collecting the first harmonized data of its kind in the country, the project tests methodologies aligned with the EU Pollinator Monitoring Scheme. It aims to understand how climatic and environmental factors affect pollinator communities and to propose evidence-based measures for enhancing their climate resilience. Additionally, the initiative includes education, awareness-raising, and capacity-building components to strengthen pollinator conservation efforts nationally.

MAIN GOALS

- Collect the first standardized data on wild bees and hoverflies in Croatia.
- Test the EU Pollinator Monitoring Scheme methodology under local conditions.
- Analyze the influence of climate and environmental factors on pollinator communities.
- Propose measures to improve the climate resilience of pollinators.
- Raise public awareness of the importance of pollinators and climate change.
- Build capacity for pollinator monitoring and conservation in Croatia.

KEY ACTIVITIES

- Field collection and identification of wild pollinators across biogeographic regions.
- Establishment of a national reference collection for wild bees and hoverflies.
- Estimation of species richness, diversity, and community structure in various habitats.
- Analysis of climate and environmental impacts on pollinator populations.
- Publication of recommendations to enhance pollinator climate resilience.
- Organization of educational talks on pollinator conservation.
- Production of a catalog of native, pollinator-friendly plant species for urban gardens.
- Outreach through the Cro Buzz Klima website and social media.
- Professional training to enhance national expertise in pollinator ecology.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- Ecologists, entomologists, climate scientists, experts in statistics, GIS, communication staff
- Partnerships with national parks, city authorities, and local institutions
- Community
- Project funding

CONTACT INFORMATION

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ADDITIONAL SOURCES / LINKS

- https://crobuzz.mingor.hr/

BENEFITS FOR ZOOS

- Strengthens zoo education through native species and ecosystem content
- Enables citizen science initiatives involving zoo visitors and local communities
- Enhances the zoo's role as a hub for participatory science and conservation
- Supports zoo-led research and partnerships with academic institutions
- Provides opportunities for co-published scientific outputs and data contributions
- Zoo grounds can serve as pollinator habitats and demonstration sites for urban conservation

CHALLENGES FOR REPLICATION

- Limited access to entomological and ecological expertise
- Difficulty in securing sufficient project funding
- Technical and logistical barriers for institutions lacking research infrastructure
- Need for sustained public engagement and effective outreach strategies

ADDITIONAL NOTES

The Cro Buzz Klima initiative serves as a pilot model for implementing EU-level pollinator monitoring protocols and supports Croatia’s broader efforts in biodiversity protection and climate adaptation.

EU POLLINATORS INITIATIVE

COUNTRY AND REGION EU - Europe

ABOUT INITIATIVE

The EU Pollinators Initiative is the first dedicated EU policy framework to tackle the decline of wild pollinators. It aims to improve knowledge, monitor trends, raise awareness and promote coordinated conservation actions across Member States. It works through policy guidance, research funding, stakeholder engagement and communication campaigns.

MAIN GOALS

- To address the causes of pollinators decline in the EU.
- To improve monitoring and data sharing on wild pollinators.
- To raise awareness among citizens, farmers, and stakeholders.
- To support national action plans and local measures.

KEY ACTIVITIES

- Publication of EU guidelines and recommendations for Member States.
- Launch of communication campaigns for schools and the public.
- Coordination with related EU-funded projects such as LIFE4Pollinators.
- Promotion of pollinator-friendly farming and land management.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- Coordination staff at EU and national level.
- Funding for local awareness actions, research and habitat measures.
- Strong stakeholder partnerships.

CONTACT INFORMATION

European Commission
DG Environment

ADDITIONAL SOURCES / LINKS

An official website of the European union

CHALLENGES FOR REPLICATION

- The initiative is a policy framework, so local adaptation is needed.
- Coordination with local authorities may be required.

BENEFITS FOR ZOOS

- Zoos can align education and citizen science actions with EU objectives.
- Opportunity to become demonstration sites for pollinator-friendly practices.
- Potential access to EU co-funding for local actions.

ADDITIONAL NOTES

Additional sources:

- EU Biodiversity Strategy 2030
- National Pollinator Strategies (where available)

THE GREAT SUNFLOWER PROJECT

COUNTRY AND REGION USA – North America

ABOUT INITIATIVE

People all over the USA are collecting data on pollinators in their yards, gardens, schools, and parks. Together, they take counts of the number and types of pollinators visiting plants (especially sunflowers). The project has been gathering information on pollinator service since 2008, and now possesses the largest single body of information about bee pollinator service in North America.

MAIN GOALS

- To gather observations of pollinators visiting flowering plants to help scientists understand pollinator populations and advance knowledge about the types of plants pollinators prefer.

KEY ACTIVITIES

- Identification and counting of pollinators as they visit flowering plants, especially sunflowers.
- Assessment of gardens as habitats.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- Digital platform for downloading determination cards, instructions, guidelines and to upload records (reporting system).
- Staff for coordination and data processing.

CONTACT INFORMATION

ADDITIONAL SOURCES / LINKS

The Great Sunflower Project

https://scistarter.org/citizen-science-kit-observing-pollinators

BENEFITS FOR ZOOS

- Zoos can organize a huge network of citizens who participate in massive observing and mapping of pollinator species and the types of flowers they prefer.
- Zoos can provide a huge amount of data valuable for conservationists and governmental bodies.

CHALLENGES FOR REPLICATION

- Good and powerful digital platform.
- Staff to collect and process data.
- Determination of species.

GUARDIANS OF NATURE

COUNTRY AND REGION Spain (Canary Islands) – Europe

ABOUT INITIATIVE

Guardians of Nature is an educational program aimed at children aged 3 to 13, whose goal is to understand pollination, its ecological value, and the importance of promoting it. It includes interactive talks, the use of supporting materials such as diagrams and videos, an on-site visit to observe pollinators, and the creation of informative posters. All activities share the goal of achieving a thorough understanding of the subject. Children learn basic notions about pollinators, the different groups of interest (bees, butterflies, and hoverflies), the role they play in pollination, the threats they face, and plants of interest. The initiative promotes knowledge, awareness, and tools for their protection. It also encourages creativity through the creation of posters to raise awareness about their favourite pollinator or their own creation of refuges. The project can be adapted to various educational settings thanks to the use of simple resources and the help of trained staff.

MAIN GOALS

- To raising knowledge about pollinators.
- To raise awareness about pollinators ecological importance.
- To promote protection of pollinators.
- To encourage exploration of nature.
- To promote teamwork and creativity.

KEY ACTIVITIES

- Interactive Talk: "Meet the Little Garden Helpers" (30–40 minutes)
  Supporting materials: images, diagrams, and cards.
  Topics:
  - What is pollination? What are pollinators? Why is pollination important?
  - Mentioning the different pollinators that can be found:
    - Bees: types of bees, how they pollinate, ecological importance, bee dance (video), and hive organization (diagram).
    - Butterflies: life cycle (diagram), how they pollinate.
    - Hoverflies: learning about the group, how they pollinate, the role they play.
  - How pollination occurs (plant parts, supported with a diagram). What happens when nectar is robbed?
  - Threats they face.
  - Characteristics of plants for pollination, focusing on native plants.

  To reinforce knowledge, an activity with cards will relate the pollinator and its favourite plant for the next activity.

- Safari for Pollinators: Field Trip (30 minutes)
  Materials: notebook and pencils.
  Use of field notebook, marking the area where we found the plant with pollinators. Also, programme will answer:
  - Which pollinators were identified?
  - Were they alone or in a group?
  - Were they pollinating or just passing by?
  - Were they pollinating or robbing nectar?

  During the walk, participants take photos of the pollinators to verify the species and the plant they were on.
  Once the notebook is filled, the group meets to discuss the results and play a quiz to review concepts (Kahoot).

- Creative Development: Mural and Pollinator Refuge (30 minutes)
  Materials: paper and colored pencils. Recycled materials for the refuge.
  Participants choose a pollinator from those that they found and create a poster, drawing the pollinator with data about it and a conservation message.
  A workshop about how to make, with simple materials, a pollinator refuge, which each child can later replicate at home.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

Human resources

- A coordinator (working 20–30 hours/month).
- Two to three environmental educators to guide the activity (working 2 hours per session)

Materials and technical resources

- Notebooks for the Pollinator Safari.
- Stationery: pencils, colors, construction paper, and notebooks.
- A computer.
- A camera or mobile phone for taking photos.
- Recycled materials to make refuges.

CONTACT INFORMATION

ADDITIONAL SOURCES / LINKS

CHALLENGES FOR REPLICATION

- Limited resources: availability of trained staff, materials, and budget.
- Weather conditions: ideal conditions to observe pollinators are not always present, so the Pollinator Safari would not be held.
- Long-term commitment: maintaining educational activities can be challenging due to lack of staff or other priorities.
- Interest and participation: may not be appealing to all audiences.

BENEFITS FOR ZOOS

- Educational offering: The program attracts more children and/or new groups with a playful, hands-on approach.
- Conservation: It raises awareness about pollinators and promotes their conservation inside and outside the zoo.
- Active participation: It encourages autonomous searching for pollinators, identification, and conservation actions that extrapolate outside the zoo.
- Long-term impact: It helps to extend the project beyond the zoo and generate real protection for pollinators.

ADDITIONAL NOTES

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POLLINATOR ACADEMY

COUNTRY AND REGION EU - Europe

ABOUT INITIATIVE

The Pollinator Academy is a European online learning platform dedicated to sharing taxonomic knowledge and information about pollinators, especially bees, hoverflies, butterflies and other vital species, in Europe. It was developed to address the shortage of pollinator identification expertise by enabling easier access to taxonomic tools, educational materials and identification resources for scientists, students, volunteers and nature lovers.
It is a public, open-access resource created as part of EU-funded biodiversity projects and supports the broader EU Pollinators Initiative that aims to reverse pollinator decline by 2030.

MAIN GOALS

- To increase taxonomic capacity at European level.
- To offer educational materials and identification tools.
- To offer micro-learning modules, courses, and taxonomic tools for formal and informal learners
- To support monitoring and research.

KEY ACTIVITIES

- Online taxonomic training and lessons – modules on pollinator ID and biology to build skills.
- Knowledge Centre – searchable wealth of factsheets, identification keys and publications.
- Resources for Educators – training materials that can be used for teaching or in biodiversity projects.
- Supporting EU Projects – integral to large EU biodiversity projects (SPRING, EPIC) that coordinate training and monitoring of pollinators

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- Scientific and taxonomic experts.
- Digital platform infrastructure - a website with searchable databases, course modules, multimedia resources, and multilingual support.
- Data and content - factsheets, identification tools, images, scientific publications, and educational content.
- Funding and institutional support - ideally via grants, partnerships (e.g., with universities, research institutes, NGOs).
- Promotion and partnerships - connections with environmental bodies for outreach.

CONTACT INFORMATION

Contact form

ADDITIONAL SOURCES / LINKS

https://pollinatoracademy.eu/

BENEFITS FOR ZOOS

- Zoo educators can use high-quality, science-based materials to enhance pollinator-related activities.
- Helps build capacity in species identification and ecology — useful for outreach and captive-care contexts.
- Aligns with broader EU biodiversity goals, offering partnership opportunities in research or citizen science.
- Zoos can host workshops, displays or citizen science projects linked to the academy's resources.
- Zookeepers and other zoo staff interested in field conservation could contribute to or benefit from pollinator monitoring data and taxonomic tools.

CHALLENGES FOR REPLICATION

- Attracting users from both scientific and general public audiences may require active outreach.
- Requires quality control of taxonomic content and credible expertise.
- Building a dynamic, multilingual digital learning platform is resource-intensive.

LIFE 4 POLLINATORS

COUNTRY AND REGION Italy, Slovenia, Spain, Greece – Europe

ABOUT INITIATIVE

Activities involve young people, both spontaneously and through schools. Participants use 6 field cards with dichotomous keys for the recognition of pollinators and entomophilous plants, such as butterflies, moths, wasps, beetles, flies, and bees. Citizens, adults, and children identify and send photos to the project email address. There is also the possibility of uploading photos with location to an online platform.

MAIN GOALS

- The project improves information and knowledge on native wild pollinators and entomophilous plants (i.e., pollinated by insects).
- The project improves citizens' and key stakeholders' awareness of the decline of wild pollinators and the importance of pollination services for the maintenance, functioning, and health of natural ecosystems and agroecosystems.

KEY ACTIVITIES

A participatory science manual has been created for schools involved in environmental education activities.

• BOTANICAL ACTIVITY

Objective: To introduce students to plant diversity and taxonomy through direct observation of diagnostic traits.

The activity is carried out by groups of 2–3 students where everyone has a specific role (e.g., one person dedicates themselves to observation and another fills out the campaign form). Those who fill out the card also draw the flower and leaf of the chosen flowering plant in the area.

The group observes the characteristics of the flowering plant, noting them on the field card and trying to determine its morphological group using the key for entomophilous plants. Observations must be made using a lens.

• **ENTOMOLOGICAL ACTIVITY**

Objective: To familiarize students with different groups of insects.

Carrying out a simple census teaches how to recognize the most common species of pollinators and understand their importance for ecosystems. Through direct observation of plant-pollinator interactions and by estimating pollinator diversity in a specific area, students:

- Learn to recognize functional groups and common insect species;
- Understand pollinators' preferences for plants;
- Learn to use identification keys.

The activity is carried out by groups of 3–4 students, each with a specific role (the observer, the compiler of the campaign card, and the photographer). First, an observation area is identified. The climatic conditions and habitat are noted using the relevant field card. The group observes a specific plant species in a plot for 15 minutes. Within an hour, four different plants (belonging to the same or different species) are observed (15 minutes each). All observations are carried out at a distance of approximately one meter from the plant, and the information is noted on the field card.

The observer carefully follows each insect that enters the plot and:

- Describes the morphological characteristics of the insect to identify its group (bee, wasp, hoverfly, bee fly, butterfly, moth, or beetle) and names it using the field entomology guides;
- Describes the behavior of the insect while interacting with the flower (e.g., taking pollen, taking nectar, resting, or mating);
- Counts the number of flowers visited by the insect;
- Takes a photo of the pollinator on the flower, as close as possible, noting the date and time.

• **POLLINATION ACTIVITIES** – Activities on plant-pollinator interactions, consisting of two 15-minute observations (30 minutes total).

Groups of 3 students choose a monitoring area (including different species of flowering plants), which can be a 1m x 1m square plot or a 50-meter transect (to be observed twice for a total length of 100m). Weather conditions and habitat are noted on field card no. 3a, then the group fills in the field card while observing:

- The group makes a list of all flowering plants within the plot (or along the transect), naming them (identifying the morphological group or the genus/species where possible) using the field guide or other identification tools;
- The group indicates the abundance of flowers for each species;
- The group observes plant-pollinator interactions: every time an insect visits a flower, it is noted in the corresponding column (bee flies, hoverflies, bees, wasps, butterflies, moths, beetles), adding a bar every time an insect visits the same plant species. It is also noted in the corresponding box if a plant or flower is not visited by any insect.

OTHER ACTIVITIES

Make your pollination kit

Objective: To create a pollination kit consisting of a sample of plant seeds to be sown in a garden or school green space, a small refuge (mini "bee-hotel"), and a key for the identification of the most common pollinator species, including shelter construction and monitoring.

Pollinator-friend badge.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- The project includes the creation of specific field sheets and the purchase of tools, such as magnifying glasses, to be provided to citizens.
- Dedicated personnel to assist and teach people how to play.

CONTACT INFORMATION

www.life4pollinators.eu/submission

ADDITIONAL SOURCES / LINKS

- Educational activity fieldsheets
- Manual
- Report

CHALLENGES FOR REPLICATION

- Zoos need to identify specific dedicated areas.

BENEFITS FOR ZOOS

- The activities are in line with the project's plans. Zoos can intrigue visitors by allowing them to participate in these activities within specifically identified areas of the zoo.
- These activities can easily be shared and used to involve entire families or school groups.

POLLINATION AMBASSADORS: SCIENCE, NATURE AND COMMUNICATION

COUNTRY AND REGION Spain (Canary Islands) – Europe

ABOUT INITIATIVE

Pollination Ambassadors is an educational programme for children aged 7 to 10, designed to foster a deep understanding of pollination, its ecological and cultural value, and the importance of acting as science communicators from an early age. Through a hands-on, participatory approach, it offers dynamic activities such as simulation games, interactive talks, guided pollinator observation, and workshops to classify species and create child-friendly outreach materials.

Participants learn to identify different pollinator species, understand their role in ecosystems, recognise the threats they face, and reflect on local actions for their conservation. The initiative promotes critical thinking and the development of scientific skills such as observation, recording, and communication.

As an additional component, the programme encourages and supports children in creating and monitoring their own pollinator garden at school or at home, strengthening their emotional connection to nature and fostering a long-term commitment to environmental care.

The project is easily adaptable to different educational contexts and can be replicated in zoos, parks, and cultural centres, requiring only simple resources and trained facilitators. By combining science, nature, and communication, Pollination Ambassadors inspires children to become active guardians of biodiversity while cultivating creativity, curiosity, and responsibility towards the natural world.

MAIN GOALS

- To raise awareness of the ecological and cultural importance of pollinators.
- To foster scientific observation and recording in childhood.
- To promote appropriate actions to protect pollinators.
- To encourage local conservation initiatives.
- To develop children's scientific communication skills.
- To facilitate collaborative learning and teamwork.

KEY ACTIVITIES

1. Playful Warm-Up – "The Pollinators' Dance" (Approximate duration: 5 minutes)
This is an introductory activity involving music and movement in which the children imitate the flight and buzz of different pollinators, stimulating coordination, curiosity, and readiness to learn.

2. Visual Presentation – "Getting to Know the Pollinators" (Approximate duration: 15 minutes)
This activity involves a brief presentation using real photographs, videos, and sound recordings to explain what pollination is, who the pollinators are, and which species inhabit the region. Examples of native, honey-producing, and exotic species are included.

3. Guided Exploration – "Scientific Safari" (Approximate duration: 30 minutes)
This is an educational tour of the zoo where children use hand lenses and illustrated field notebooks to observe and record the characteristics and behaviors of insect pollinators, encouraging respectful observation without handling the animals. During the activity, facilitators and collaborators take photographs of the most notable pollinators for later classification in workshops.
The field notebook includes simple questions to guide observations, such as identifying what was seen, its location, size, and color, which flower was visited, whether the insect was alone or in a group, and whether it appeared to assist with pollination or steal nectar.

4. Pollinator Classification Workshop: "Who Came to Pollinate?" (Approximate duration: 45 minutes)
Following the field observation walk, children work in groups to identify the species they spotted, comparing them with real images of pollinators from the Canary Islands and other regions. They learn to distinguish whether the insects are native, honey-producing, or exotic and reflect on their local ecological impact.
During the workshop, they complete a simple record sheet for each observed species, including:
• A provisional and creative name for the insect.
• An assessment of whether the insect aids pollination or may cause harm.
• Identification of the insect's preferred plant or the flower it visits most frequently.

5. Creation of Children's Scientific Articles and Posters – "Little Scientists in Action" (Approximate duration: 20 minutes)
The children produce written and visual content based on their observations and discoveries, using a simple and engaging format to share what they have learned. This workshop allows them to express their creativity while practicing science communication.
Creative examples of titles for their scientific work:
• My Mysterious Bee.
• The Flower that Defends Itself.
• The Magical Buzz of Pollinators.
Format for their creations:
• An eye-catching title.
• A drawing or diagram made by them.
• 3 to 5 clear and simple sentences explaining what they have learned.

6. Closing Ceremony – "Junior Pollinator Graduation!" (Approximate duration: 15 minutes)
To celebrate each child's commitment to pollinator conservation, the programme concludes with a symbolic ceremony where they receive a certificate and a special "Junior Pollinator" badge.

7. Optional Phase – "Creating a Pollinator Garden"
Each newly graduated Junior Pollinator is encouraged to create a small garden with nectar- and pollen-rich plants, so they can continue observing and caring for pollinators over the long term, thereby strengthening their connection with nature.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- **Human Resources:**
- – Coordinator (20–30 hours/month).
- – 2 to 3 facilitators/educators to lead activities (4–6 hours per session).
- – 1 to 2 assistants or volunteers for support (3–4 hours per session).

- **Material and Technical Resources:**
  - Field notebooks and hand lenses (20–30 units).
  - Drawing and stationery materials
  - Basic audiovisual equipment (projector, laptop, speakers); camera or smartphone for photographs
  - Materials for pollinator garden (plants and tools)

CONTACT INFORMATION

ADDITIONAL SOURCES / LINKS

BENEFITS FOR ZOOS

- Enhanced Educational Offering: The initiative provides zoos with an attractive, ready-to-use programme focused on pollinators, enriching their educational activities for visiting children.
- Promoting Conservation Awareness: The programme helps zoos raise awareness about the importance of pollinators and biodiversity, aligning with their mission of wildlife conservation.
- Community Engagement: By involving children and families in citizen science activities and hands-on experiences, zoos strengthen community bonds and promote a culture of environmental care.
- Adaptability: The programme is flexible and can be adapted to different zoo sizes, locations, and resources, facilitating easy implementation.
- Long-Term Impact: By encouraging the creation of pollinator gardens, the zoo extends its influence beyond its premises, promoting conservation actions within the community.
- Enhanced Public Image: Implementing innovative and effective educational initiatives strengthens the zoo's reputation as a leader in environmental education and conservation.

CHALLENGES FOR REPLICATION

- Limited Resources: The availability of trained staff, materials, and budget may vary between zoos, which can make full implementation of the programme challenging.
- Diversity of Contexts: Differences in size, geographical location, and zoo characteristics may require specific adaptations, potentially complicating standardisation.
- Climatic and Environmental Conditions: Some zoos may lack the appropriate conditions to install pollinator gardens or to carry out specific outdoor activities.
- Long-Term Commitment: Maintaining ongoing monitoring of pollinator gardens and educational activities can be challenging due to staff turnover or shifting institutional priorities.
- Legal and Regulatory Compliance: Local or national regulations regarding fauna handling, space usage, or species protection could limit certain activities.
- Interest and Participation: Sustaining the motivation of children, educators, and the wider community over time is essential but may prove difficult to maintain.

ADDITIONAL NOTES

The pedagogical approach is inspired by internationally recognised science communication resources, such as Science News Explores and Frontiers for Young Minds, adapted to the Canary Islands context.

- Native, honey-producing, and exotic pollinators (Apis mellifera, Pseudoanthidium, Xylocopa pubescens).
- Diversity of pollinators (bees, butterflies, hummingbirds, bats, etc.).
- “Pollinators send out good vibrations — and plants respond sweetly” (as discussed in Science News Explores, July 2025)
- Plant–pollinator relationships (inspired by Precious Pollinators, Smithsonian).
- Endangered pollinators and local conservation actions.
- Science communication for children, following the style of Frontiers for Young Minds.

- WEBSITES:
  - Science News Explores – “Pollinators send out good vibrations — and plants respond sweetly”
  - Article on the language of buzzing in pollinators (July 2025).
  - https://www.snexplores.org/article/pollinators-send-out-good-vibrations-and-plants-respond-sweetly
  - Smithsonian – “Precious Pollinators”
  - Information on plant-pollinator relationships and ecological importance.
  - https://naturalhistory.si.edu/education/teaching-resources/life-science/precious-pollinators
  - Frontiers for Young Minds
  - Scientific communication platform for children and young people.
  - https://kids.frontiersin.org

POLLINATOR PARTNERSHIP

Pollinator partnership. Protect their lives. Preserve ours.

COUNTRY AND REGION San Francisco (California, USA) – North America

ABOUT INITIATIVE

The mission of Pollinator Partnership is to promote the health of pollinators through conservation, education, and research. As the world's largest nonprofit dedicated exclusively to the health of pollinating animals, the Pollinator Partnership brings all sectors together to drive science-based, measurable, and sustainable action to protect pollinators.

MAIN GOALS

Education

- National Pollinator Week: A flagship annual campaign that raises awareness about pollinators and their importance.
- Ecoregional Planting Guides: Tools that help citizens select regionally appropriate native plants to support pollinators.

Citizen Science Engagement

- Project Wingspan deeply incorporates volunteers and land stewards in habitat restoration by providing training in seed collection, plant identification, and Best Management Practices, while fostering long-term stewardship agreements.

KEY ACTIVITIES

- Bee Friendly Farming – Certification program encouraging farmers to implement pollinator-friendly practices such as habitat strips, reduced pesticide use, and seasonal food sources.
- National Pollinator Week – Annual public awareness campaign, events, and media outreach to highlight pollinator importance and conservation needs.
- Governors are encouraged to sign a proclamation;
- Pollinator artwork and outreach materials are displayed in office lobbies;
- Social media campaigns are launched or joined to promote awareness;
- Pollinator Week is highlighted in newsletters, blogs, or magazines;
- Pollinator Week is sponsored by organizations or individuals;

- Pollinator-themed meals or mixers are hosted;
- Pollinator planting days are organized at schools, offices, local parks, or libraries;
- Native bee houses are built to support local species;
- Bee Friendly Gardens are registered through official platforms;
- Local establishments or buildings are requested to light up for Pollinator Week (e.g., lighting up City Hall in yellow and orange); Pollinator Week Lighting Guide
- Habitats are planted in backyards using native plants and provided planting guides or garden recipe cards;
- Nature walks or pollinator expert lectures are hosted;
- Pollinator films are screened for educational purposes;
- Pollinator festivals or native plant sales are organized;
- Educational events are hosted at local libraries.

- **Ecoregional Planting Guides** – Free downloadable guides to help landowners and gardeners choose regionally native plants for pollinators.
  - https://www.pollinator.org/guides

- **School & Community Programs** – Interactive curricula, workshops, and resources for educators to incorporate pollinator conservation into classrooms.
  - https://www.pollinator.org/bee-smart#fun

- **Seed Collection Events** – Volunteers trained to identify, collect, and process native plant seeds for restoration projects.

- **Habitat Monitoring** – Engaging local communities in tracking plant bloom times, pollinator visits, and habitat health.

- **Bee friendly garden**s – Leveraging community groups to maintain and expand pollinator gardens.
  - https://www.pollinator.org/bfg

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- Experts (biologists, ecologists, agronomists)
- Project managers and partnership coordinators
- Educators and communications staff
- Volunteers for fieldwork and outreach
- Administrative and fundraising capacity
- Stable funding sources
- Research and monitoring equipment
- Digital infrastructure (website, databases, educational tools)
- Educational and promotional materials
- Field infrastructure (native seed supply, planting and maintenance tools)

CONTACT INFORMATION

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600 Montgomery St. Ste 440
San Francisco, CA 94111

ADDITIONAL SOURCES / LINKS

https://www.pollinator.org/

CHALLENGES FOR REPLICATION

- Regional Flora Guides: While the flora guides are very detailed, they refer to the native flora of the USA and Canada and cannot be used directly. However, they contain information and methodologies that could be replicated for the current project.
- Educational Activities: Some educational activities require payment and are inaccessible for review. Others focus specifically on the monarch butterfly, making them unsuitable for the scope of this project.
- Native Planting and Sourcing: The project focuses heavily on planting and sowing native species to involve citizens in creating pollinator-friendly areas. While the US version describes seed purchase locations for each state, finding nurseries that sell these types of plants in Italy is often difficult, as such species are frequently unavailable in the commercial market.

BENEFITS FOR ZOOS

- **National Pollinator Week:** Zoos could celebrate the week and find materials and ideas on the official website (e.g., creating a map to geolocate all activities, including those outside the zoos, to entice visitors to join the community, or involving neighboring municipalities through the lighting of public buildings).
- There are very detailed guides on the flora of the area from which zoos could take inspiration.

RESTPOLL

COUNTRY AND REGION

Denmark, France, Germany, Greece, Hungary, Italy, Latvia, the Netherlands, Norway, Spain, Sweden, Switzerland, Ukraine, United Kingdom – Europe. USA – North America.

ABOUT INITIATIVE

An international partnership project aims at the long-term preservation of pollen-rich habitats in agricultural landscapes. Over the past decades, the biological diversity of agricultural areas has drastically declined, threatening pollinator insect populations. The project's goal is to restore natural habitats, preserve native vegetation, and increase biodiversity from both a conservation and an economic perspective.

The Hungarian Case Study:
The Hungarian RestPoll case study area is located within the Hevesi Füves Puszták Nature Reserve of the Bükk National Park in South Heves County. Since 2024, five Living Lab study sites—each paired with control and reference plots—have been established to test co-designed farming and restoration measures for supporting pollinators. Managed jointly by the HUN-REN Centre for Ecological Research and the Park Directorate, the project compares flower strips, grazed and mown grasslands, and fallows with conventional farming and semi-natural habitats. Pollinator and botanical surveys are conducted in cereals, alfalfa, and bee pastures. Local farmers, whose land is partly leased by the park, are engaged through workshops and events, fostering collaboration between agriculture and conservation to benefit both rural communities and biodiversity.

MAIN GOALS

- Establishing 17 case study sites functioning as "living laboratories" in 14 European countries.
- Testing various restoration methods, measuring and evaluating their effectiveness.
- Disseminating and adapting successful practices to other European agricultural landscapes.
- Building pan-European cooperation with similar projects.

KEY ACTIVITIES

- Building a partnership network to align local conditions with shared goals.
- Broad, public sharing of research results and experiences.
- Presenting the risks and benefits of alternative land-use options.
- Through restoration measures, not only protecting pollinator insects but also ensuring the sustainable provision of forage resources and strengthening the circular economy.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- The project involves 24 research institutes from 16 countries, 2 ministries, 3 commercial companies, and 1 national park.
- The partners work in close collaboration with other European initiatives, such as Promote Pollinators, the EU Pollinators Initiative, Safeguard, and SHOWCASE projects.

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ADDITIONAL SOURCES / LINKS

www.restpoll.eu

CHALLENGES FOR REPLICATION

BENEFITS FOR ZOOS

- Debrecen Zoo operates within the so-called Nagyerdő (Great Forest) area, with a strong focus on protecting native plant species and combating invasive species. The goals of RestPoll align with the institution's conservation and educational activities, as well as its research and public awareness programs.

TALLIN POLLINATOR HIGHWAY

COUNTRY AND REGION Estonia – Europe

ABOUT INITIATIVE

Tallinn has developed a strategic plan for "Putukaväil," a 13 km long linear park that serves as a corridor for biodiversity, green mobility, and public space. Partnering with various city stakeholders, Tallinn is gradually transforming the area to provide long-term value to its inhabitants through "tactical urbanism." This approach allows the city to test urban planning solutions on a small scale before committing to major investments.

MAIN GOALS

- To improve pollinator diversity along the corridor.
- To improve the environment for people in a new and innovative way by providing better conditions for green mobility as well as opportunities for recreational activities traditionally associated with country-living such as gardening, hiking, and observing nature all year round.
- To convert an abandoned utility corridor into a multifunctional linear park integrated into the city's green and mobility network.

KEY ACTIVITIES

- Biodiversity inventories.
- Installing bee borders and native flower meadows.
- Creating a plant catalogue for pollinator-friendly landscaping.
- Developing bike/pedestrian routes and reuse of disused infrastructure like Soviet-era garages.
- Urban art installation competition "Place Buzz".
- Enable the citizens of Tallinn to experience landscape architecture solutions for the Pollinator Highway through augmented reality (AR).

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- Landscape architects to design the space.
- Substantial funding to support the development.
- A large volume of plants and soil, along with a numerous gardening crew.
- Cooperation with city government authorities.

CONTACT INFORMATION

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ADDITIONAL SOURCES / LINKS

European Green Capital Award Good Practices - Tallinn - The Pollinator Highway

Pollinator conservation and Pollinator Highway in Tallinn - presentation

CHALLENGES FOR REPLICATION

- Shifting mowing practices and public perception is a long-term process.
- changing the mindset of citizens as well as other stakeholder groups involved.

BENEFITS FOR ZOOS

- Outdoor learning possibilities for students and visitors, e.g. guided walks.
- Joint ecological studies or citizen science initiatives with universities.

ADDITIONAL NOTES

https://greentallinn.eu/en/flag-projects/the-pollinator-highway/

https://greenvolve-project.eu/pollinator-highway-city-of-tallin/

https://www.dropbox.com/scl/fi/gtef5mundggm7zuq6sk3m/Putukav-ila-ideekorje-plakatid_OUT.pdf?rlkey=slaa3ezl56zw4hv4s6qcgn4j8&e=1&dl=0

UK POLLINATOR MONITORING SCHEME

COUNTRY AND REGION United Kingdom – Europe

ABOUT INITIATIVE

The purpose of the initiative is to determine how pollinator populations are changing, to measure population trends, and to target conservation efforts. Volunteers are included through citizen science programmes to gather data on a wide range of flower-visiting insects.

MAIN GOALS

- To collect long-term pollinator occurrence records.
- To generate systematic data on the abundance of bees, hoverflies, and other flower-visiting insects at a national scale (UK).
- To measure trends in pollinator populations and target conservation efforts.
- To monitor the health of pollinators.
- To engage citizens in collecting data and conservation activities.

KEY ACTIVITIES

- **Data collection through citizen science activities:**
  - Flower-insect timed counts: This involves a ten-minute observation of flowers and insects to collect data on the total number of insects visiting a particular flower, ideally chosen from a list of 14 target species.
  - One-kilometer square surveys: Volunteers adopt specific areas to conduct surveys using pan-traps to capture insect samples four times a year.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- Coordinators to manage the project.
- A website and a dedicated count application or digital forms.
- Digital survey materials and video guides.
- Identification guides for both flowers and insects.

CONTACT INFORMATION

ADDITIONAL SOURCES / LINKS

https://ukpoms.org.uk/

CHALLENGES FOR REPLICATION

BENEFITS FOR ZOOS

- Collecting valuable data about pollinators populations which are base for conservation actions and citizens engagement in most of activities.

- Not every zoo or other institution can designate enough people to coordinate all activities and process gathered data.

THE USEFUL ANIMALS PARK

Nyttodjurparken

COUNTRY AND REGION Sweden – Europe

ABOUT INITIATIVE

The Useful Animals Park" (Nyttodjurparken), where "useful" refers to animals that provide ecosystem services such as pollination and pest control.

The park is located in a fruit grove (Kivik) that produces fruit beverages. It aims to demonstrate how to promote biodiversity with a focus on insects, both in cultivated land and in home gardens. It also serves as an arena for research and a meeting place for stakeholders interested in biodiversity and sustainable farming.

The park is an EU project and a collaboration between Kivik, researchers at Lund University, the Swedish University of Agricultural Sciences, and a national association for hobby farmers.

MAIN GOALS

- The project aims to demonstrate and inspire ways to promote pollinators and other useful animals in gardens and farms, showing that such efforts do not have to be complicated or expensive.
- The park is also designed for researchers to use as a resource to learn more about how to take advantage of ecosystem services gained through biodiversity.

KEY ACTIVITIES

- A park with habitats for pollinators and other useful animals has been built to demonstrate to the general public, farmers, and other stakeholders how to practically promote pollinators and other useful animals.
- The park is equipped with information signs and remains open for researchers to use at any time.
- Since research often requires well-established environments, the park allows researchers to begin their work immediately instead of spending time establishing new research sites.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- available land area
- human resources
- financial resources

CONTACT INFORMATION

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ADDITIONAL SOURCES / LINKS

https://www.kiviksmusteri.se/nytto djurpark/

CHALLENGES FOR REPLICATION

- Just applicable for those who have enough space for this kind of initiative.

BENEFITS FOR ZOOS

- The creation of a larger area for pollinators within the zoo provides an opportunity not only to support pollinator populations by creating habitats but also to showcase best practices to visitors.
- Simultaneously, it serves as an arena for research and a meeting place for stakeholders.

ADDITIONAL NOTES

https://rikaretradgard.se/djurparker-som-ska-gynna-bade-odlingar-och-smakryp/

X-POLLI:NATION

COUNTRY AND REGION Italy – Europe

ABOUT INITIATIVE

The Cross-Polli:Nation project is a citizen science initiative aimed at engaging individuals in monitoring and protecting pollinators. Inspired by the UK's Polli:Nation and Polli:Bright programmes, it focuses on collecting data on plant-pollinator interactions in Italy and the UK.
Participants are guided to observe a 50x50 cm area containing a target flower, recording insect visits over a 10-minute period. The project provides identification tools and encourages habitat creation for pollinators. Data collected contributes to a database managed by the National Biodiversity Network (NNB) via ISPRA.
The initiative is inclusive, welcoming individuals regardless of their experience level. It emphasizes the importance of pollinators while highlighting threats such as habitat loss, climate change, and pesticide use. By participating, individuals contribute to scientific research and gain a deeper understanding of pollinator conservation.

MAIN GOALS

- To promote citizen science by involving the public in monitoring pollinator activity.
- To raise awareness about pollinator decline and the importance of plant-pollinator interactions for ecosystems and food security.
- To generate scientific data on pollinator species and flower visitation, contributing to biodiversity conservation efforts in collaboration with the National Biodiversity Network and ISPRA.
- To encourage behavioural change by educating participants about pollinator-friendly practices and habitat creation.

KEY ACTIVITIES

- Conducting structured pollinator observation sessions in a 50x50 cm area around selected flowers for 10 minutes, noting insect visitors and their behaviour.
- Using easy-to-use identification tools for pollinators and flowering plants.
- Submitting data to a national biodiversity database.
- Promoting hands-on conservation actions, such as creating or improving pollinator habitats in gardens, parks, or schoolyards.
- Offering educational resources and activities, including teacher guides and workshops.

REQUIRED RESOURCES *Human, financial, technical resources needed to implement or replicate the initiative.*

- Human Resources: The project utilizes educators or facilitators for citizen science engagement, alongside volunteers or students to collect data.
- Financial Resources: Requirements are low to moderate, primarily covering printing materials, staff time, outreach, and simple equipment such as clipboards, timers, and ID guides.
- Technical and Spatial Resources: The initiative requires an online data submission platform, species identification tools, and access to green spaces or gardens with flowering plants.

CONTACT INFORMATION

info@crosspollination.it

ADDITIONAL SOURCES / LINKS

https://www.crosspollination.it/

BENEFITS FOR ZOOS

- This initiative can be easily replicated in zoos, as they provide green spaces where volunteers and students can identify species. In this way, community engagement is promoted, and zoos position themselves as science-learning hubs.
- The programme is cost-effective and scalable, and it is directly applicable on-site since it does not require extensive training for either trainers or visitors.

CHALLENGES FOR REPLICATION

- Managing the quality and consistency of citizen-collected data, especially with younger participants.
- Availability of suitable flowering habitats within the zoo grounds for reliable observations.
- Maintaining participant engagement beyond one-time interactions (e.g., fostering repeated participation or seasonal monitoring).

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