

LUPoMS

Detecting changes in the population of essential pollinating insects across Luxembourg using standardized methods and engaging citizens.



INSPIRATION

Pollinating insects such as wild bees, hoverflies, butterflies and beetles, among others, are essential for the functioning of ecosystems, food production, and human well-being. However, mounting evidence shows that wild pollinators are declining in both occurrence and diversity at regional and global levels, largely due to human activities. Long-term pollinator monitoring provides valuable insights into the dynamics of pollinator populations, allows the detection of declines, and informs conservation strategies and policies.

Monitoring pollinator decline, its causes, and its consequences is one of the aims of national and international initiatives in order to contribute to conservation efforts of wild pollinators, such as the International Initiative for the Conservation and Sustainable Use of Pollinators, the EU Pollinator Initiative and its New Deal for Pollinators, and Luxembourg's action plan for pollinators 2021-2026 (PAN). Through action 13 in particular, the PAN aims to "establish a systematic, long-term national monitoring program for pollinating insects."

INNOVATION

Financially supported by the Ministry of the Environment, Climate and Biodiversity (MECB), LIST coordinates both the Wild Pollinator Monitoring Programme Luxembourg (MONIPOL) and the Luxembourg Butterfly Monitoring Scheme (LUBMS). The shared goal of these programmes is to gather robust population trend data for various pollinating insects over the long term, employing standardized, quantifiable collection methods (such as transect walks and pantrapping) in alignment with the European Pollinator Monitoring Scheme (EUPoMS) and the European Butterfly Monitoring Scheme (eBMS). MONIPOL and LUBMS serve as the cornerstone of the Luxembourg Pollinator Monitoring Scheme (LUPoMS).

To capture the diverse environmental conditions across Luxembourg, LUPoMS follows a stratified random sampling design, which guarantees that a comprehensive range of environmental conditions found across the country is adequately represented. Surveys are conducted at specific 1-kilometre resolution squares throughout Luxembourg by LIST's staff in collaboration with citizen scientists and consulting companies.

IMPACT

LUPoMS, operating nationwide, offers multifaceted benefits, framing research in species and habitat conservation and ecosystem service provision, and promoting public awareness and citizen engagement. It contributes significantly to policy support, aligning with national and international conservation targets.

Beyond its national scope, LUPoMS field protocols find application within smaller scale monitoring initiatives. These include activities such as assessing the impact of ecosystem restoration efforts on biodiversity (After-LIFE project), local monitoring programmes focused on specific regions (e.g. dry grasslands in the Minette area) or specific monitoring projects evaluating the effectiveness and relevance of biodiversity compensation measures.

Data collected in the framework of LUPoMS also contributes to European databases, which can be used for the development of European indicators such as the European Butterfly Indicator for Grassland Species and the EU-wide pollinator indicator, which will inform on the impacts of relevant national and EU policies on pollinators.

Partners

Administration de la nature et des forêts (LU) , Bee Together , Butterfly Conservation Europe , Citizen-science network of volunteer fieldworkers , Ministère de l'Environnement, du Climat et de la Biodiversité , National Museum of Natural History Luxembourg (MNHL) , natur&ëmwelt , Naturschutzsyndikat (SICONA & SIAS) , SPRING

Financial Support

Ministère de l'Environnement, du Climat et de la Biodiversité

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