Improving wild bee monitoring, sampling methods, and conservation

Felix Klausa,\*, Manfred Ayasseb, Alice Classenc, Jens Dauberd, Tim Dieköttere, Jeroen Everaarsa, Felix Fornofff, Henri Greila, Harmen P. Hendriksmag, Tobias Jüttea, Alexandra Maria Kleinf, André Krahnera, Sara D. Leonhardth, Dorothee J. Lükena, Robert J. Paxtoni, j, Christian Schmid-Eggerk, Ingolf Steffan-Dewenterc, Jan Thieled, Teja Tscharntkel, Silvio Erlera, m, Jens Pistoriusa

Appendix A

Table 1. Overview of local monitoring schemes for insects being developed and implemented in Germany as of 2022.

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| **Project** | **Location** | **Institutions** | **Website** |
| BienABest – Standardized recording of wild bees for the evaluation of the pollinator potential in the agricultural landscape | Germany | VDI  The Association of German Engineers  Ulm University | <https://www.bienabest.de/> |
| Bienenstadt Braunschweig/BeesUp | City of Braunschweig | Julius Kühn-Institut  Federal Research Centre for Cultivated Plants | <https://www.bienenstadt-braunschweig.de/> |
| Bundesweites Insektenmonitoring – Nationwide insect monitoring | Germany | BfN  Federal Agency for Nature Conservation | <https://www.bfn.de/themen/monitoring/insektenmonitoring.html> |
| DINA – Diversity of Insects in Nature Protected Areas | Germany | EVK  Entomological Society Crefeld | <https://www.dina-insektenforschung.de/insekten-monitoring-evk> |
| EU Pollinator Monitoring Scheme (EU-PoMS) | European Union | Several institutions including Helmholtz Centre for Environmental Research (UFZ, Germany) | <https://wikis.ec.europa.eu/pages/viewpage.action?pageId=23462107> |
| Insektenmonitoring Baden-Württemberg – Insect monitoring Baden-Württemberg | State of Baden-Württemberg | LUBW  Baden-Württemberg State Institute for the Environment, Survey and Nature Conservation | <https://www.lubw.baden-wuerttemberg.de/natur-und-landschaft/insektenmonitoring> |
| MonViA – Nationwide monitoring of the biological diversity in agricultural landscapes | Germany | Federal Office for Agriculture and Food  Johann Heinrich von Thünen Institute  Federal Research Institute for Rural Areas, Forestry and Fisheries  Julius Kühn-Institut  Federal Research Centre for Cultivated Plants | <https://www.agrarmonitoring-monvia.de/> |
| red list of wild bees and wasps in Hamburg | City of Hamburg | German Wildlife Foundation | <https://www.wildbiene.org/wildbienen/1-rote-liste-der-wildbienen-und-wespen/> |

Table 2. Program of “Bee protection day” (“Bienenschutztag”, November 19th and 20th 2020) online conference on “Promotion of wild bees in urban and agricultural landscapes” hosted by the Institute for Bee Protection of the Julius Kühn-Institut (JKI) – Federal Research Centre for Cultivated Plants in Braunschweig, Germany.

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| Date | Time | Invited Speaker | Institution | Title | German Title |
| 2020-11-19 | 14:45 | Teja Tscharntke | University of Göttingen | Wild bees in the agricultural landscape | Wildbienen in Agrarlandschaften |
| 2020-11-19 | 15:25 | Tim Diekötter | University of Kiel | Effectively configuring flower patches as forage and distraction forage | Blühflächen effektiv konfigurieren als Tracht und Ablenktracht |
| 2020-11-19 | 16:20 | Manfred Ayasse | University of Ulm | BienABest: Securing and increasing pollination by wild bees | BienABest: Bestäubung durch Wildbienen sichern und steigern |
| 2020-11-19 | 17:00 | André Krahner | Julius Kühn-Institut | Promotion of wild bees in an agricultural landscape dominated by crop fields | Förderung von Wildbienen in einer ackerdominierten Agrarlandschaft |
| 2020-11-19 | 17:40 | Jan Thiele | Johann Heinrich von Thünen Institute | Novel research and monitoring methods for the promotion of bees in agricultural landscapes using agri-environmental schemes and innovative farming methods | Neue Forschungs- und Monitoring-Methoden zur Förderung von Bienen in Agrarlandschaften durch Agrarumweltmaßnahmen und innovative Landbewirtschaftung |
| 2020-11-20 | 09:00 | Robert Paxton | Martin-Luther-University of Halle-Wittenberg | The urban environment is good for bees and pollination | Die städtische Umwelt ist gut für Bienen und Bestäubung |
| 2020-11-20 | 09:40 | Henri Greil | Julius Kühn-Institut | „Bee City Braunschweig“ – model research project for wild bee promotion in a German major city | „Bienenstadt Braunschweig“ – Forschungsmodellprojekt zur Wildbienenförderung in einer deutschen Großstadt |
| 2020-11-20 | 10:20 | Christian Schmid-Egger | Deutsche Wildtier Stiftung (German Wildlife Foundation) | Flower mixes for wild bees – experiences from two projects in the city (Berlin) and in the agricultural landscape | Blühmischungen für Wildbienen – Erfahrungen aus zwei Projekten in der Stadt (Berlin) sowie in der Agrarlandschaft |
| 2020-11-20 | 11:15 | Alice Claßen | University of Würzburg | Does climate change species? Adaptability of pollinators in alpine regions | Wandelt Klima Arten?  Anpassungsfähigkeit von Bestäubern im alpinen Raum |
| 2020-11-20 | 11:55 | Felix Fornoff | University of Freiburg | Monitoring of hymenopterans and trophic interactions using citizen science | Monitoring von Hymenopteren und trophischen Interaktionen mittels Citizen Science |