

# Unlocking Slovakia's Biodiversity Through Data Publishing

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**Programme:** CESP

**Project ID:** CESP2023-005

**Project page:** <https://www.gbif.org/project/CESP2023-005/unlocking-slovakias-biodiversity-through-data-publishing>

**Project lead organization:** Plant Science and Biodiversity Centre, Slovak Academy of Sciences

**GBIF Participant Represented:** GBIF Slovakia

**Project implementation period:** 1/10/2023 - 30/9/2024

**Report approved:** 4/11/2024

*Declaration: The information provided in this report has been provided by and is the responsibility of the project lead.*

## Narrative Final report

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### Executive Summary

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The project's aims were successfully achieved, focusing on building capacity in biodiversity data publication. In this respect fully functional content management system of the distribution data on vascular plants of Slovakia was installed and it now contains more than 900 000 records on distribution of vascular plants in Slovakia. This system is already connected to the GBIF portal .

A workshop held from May 8-10, 2024, at Stara Lesna in the Tatry Mountains trained individuals from Slovak and Czech organizations, including the Slovak Academy of Sciences, Slovak National Museum, Slovak State Nature Conservation Agency, HBH Projekt company, and Masaryk University. Participants learned data carpentry skills, how to organize and format data, create metadata, and publish biodiversity data using the Integrated Publishing Toolkit (IPT) to share data with GBIF.

A total of 14 participants from Slovakia and one from Ukraine (currently based in the Czech Republic, funded by GBIF Norway) were trained, supported by two organizers and lecturers from GBIF Norway. Following the workshop, a pipeline was developed to facilitate the publication of individual datasets from the PLADIAS system to GBIF, which could enable streamlined data publication from Czechia in the future. This effort resulted in the publication of over 900,000 records.

The workshop was publicly announced on the GBIF website, and detailed reports were published by both GBIF Norway and the Plant Science and Biodiversity Centre of the Slovak Academy of Sciences.

While no major challenges arose, the collaboration exceeded expectations, prompting an expansion of the original objectives to include additional training on advanced data management practices.

## Report on Activities

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### Activity progress summary

#### Workshop:

The data mobilization workshop, held May 8-10, 2024, in Stara Lesna, Slovakia, successfully trained participants from Slovak and Czech organizations in data manipulation and publishing workflows using the Integrated Publishing Toolkit (IPT). Networking enhanced collaboration for future data publication. Participants are now equipped to publish independently.

#### PLADIAS-SK:

The PLADIAS-SK system for managing plant distribution data in Slovakia is operational, though its public webpage is still being finalized. This delay does not impact the established data pipeline.

#### TURBO(VEG) Data Transfer:

More than 900,000 records were successfully transferred from TURBO(VEG) to PLADIAS-SK and published on GBIF, meeting the project's goals.

#### PLADIAS-SK Connection to GBIF:

A pipeline for exporting data from PLADIAS-SK to GBIF is fully functional, and over 900,000 records have been published. This pipeline will also enable seamless future integration with the Czech PLADIAS instance.

#### New Activities:

Post-workshop, a pipeline for publishing datasets from PLADIAS to GBIF was developed, ensuring smooth future data publication.

#### Delays:

The PLADIAS webpage is still under development, though distribution maps for individual species in Slovakia are already accessible. This ongoing work does not affect the pipeline or the overall progress of the project.

### Completed activities

#### Activity name: Workshop

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**Description:** The project offered training in data carpentry skills essential for biodiversity data publication to individuals from various organizations in Slovakia and Czechia. Participants included representatives from the Slovak Academy of Sciences, Slovak National Museum, Slovak State Nature Conservation Agency, HBH Project company, and Masaryk University in Brno, Czech Republic. The training covered topics such as data organization and formatting, metadata creation, and using the Integrated Publishing Toolkit (IPT) to publish data on GBIF.

The workshop took place from May 8–10, 2024, in Stará Lesná, located in the Tatra Mountains. A total of 14 participants from Slovakia, one from Czechia (with financial support from GBIF Norway), and two organizers/instructors from GBIF Norway attended the event.

The meeting was announced on the GBIF website, and reports were subsequently published on both the GBIF Norway website and the website of the Plant Science and Biodiversity Centre at the Slovak Academy of Sciences.

**Start Date - End Date:** 8/5/2024 - 10/5/2024

**Verification Sources:** <https://www.gbif.org/event/6400ab-0498-4911-8ff2-d9e38a1/unlocking-slovakias-biodiversity-through-data-publishing>

<https://www.gbif.no/events/2024/2024-05-cesp-workshop-slovakia.html>

<https://cbrb.sav.sk/workshop-gbif-cesp-na-slovensku-alebo-spristupnenie-biodiverzity-slovenska-prostrednictvom-publikacie-dat/>

#### Activity name: PLADIAS-SK

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**Description:** The database PLADIAS-SK is fully functional, although we are still working on its web page. The search for the distribution maps of individual species in Slovakia is fully functional.

**Start Date - End Date:** 1/10/2023 - 31/7/2024

**Verification Sources:** <https://www.pladias.sk/en/>

#### Activity name: TURBO(VEG) data into the PLADIAS-SK

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**Description:** Data from the Slovak version of the TURBOVEG database, containing phytocoenological relevés that had not previously been published as distribution data, were extracted. The plant nomenclature was verified against the newly compiled Checklist of Vascular Plants of Slovakia, and the geographical coordinates for each locality were reviewed. As of now, the distribution data database contains 908,608 records on vascular plants.

**Start Date - End Date:** 1/1/2024 - 22/9/2024

**Verification Sources:** <https://www.gbif.org/dataset/11350557-28d3-48c3-9461-a5b75f7b8feb>

#### Activity name: PLADIAS-SK connected to GBIF

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**Description:** The database PLADIAS-SK is fully connected to the GBIF portal and data on the GBIF portal will be regularly updated.

**Start Date - End Date:** 1/3/2024 - 22/9/2024

**Verification Sources:** <https://slovakia.ipt.gbif.no/resource?r=pladias-sk>

### Report on Deliverables

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#### Deliverables progress summary

##### Workshop Deliverable:

The workshop was successfully held in May 2024, and participants were equipped with the necessary skills to independently publish biodiversity datasets using the Integrated Publishing Toolkit (IPT). While no datasets were published during the workshop itself, the training has led to increased capacity for data publishing among participants.

#### PLADIAS-SK Database Deliverable:

The PLADIAS-SK system is fully functional for managing distribution data on vascular plants in Slovakia. The technical adjustments to finalize the public-facing webpage are ongoing, but this does not affect the system's core functionality or the established data pipeline.

#### TURBO(VEG) Data Transfer Deliverable:

The transfer of more than 900,000 TURBO(VEG) records to the PLADIAS-SK system was completed, and the data has been successfully published on GBIF, fully achieving the project's objective for this deliverable.

#### PLADIAS-SK Connection to GBIF Deliverable:

The pipeline for exporting data from PLADIAS-SK to GBIF is operational. Over 900,000 records have been published on GBIF, and this pipeline sets the groundwork for easy integration with the Czech PLADIAS ([www.pladias.cz](http://www.pladias.cz)) instance in the future.

#### Additional Deliverables:

As a result of the workshop, three additional small datasets were published by HBH, a private company involved in environmental impact assessments, further expanding the project's impact.

#### Completed deliverables

##### Title: Data Mobilisation Workshop

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###### Type: Training Workshop

**Description:** The workshop was organized 8.-10. May 2024 at Stara Lesna in the Tatry Mts. There were 14 participants from Slovakia, one from the Czech Republic (financially covered by the GBIF Norway) and two organisers/lectors from the GBIF Norway.

**Sources of verification:** <https://www.gbif.org/event/6400ab-0498-4911-8ff2-d9e38a1/unlocking-slovakias-biodiversity-through-data-publishing> <https://www.gbif.no/events/2024/2024-05-cesp-workshop-slovakia.html> <https://cbrb.sav.sk/workshop-gbif-cesp-na-slovensku-alebo-spristupnenie-biodiverzity-slovenska-prostrednictvom-publikacie-dat/>

##### Title: PLADIAS-SK

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###### Type: Resources

**Description:** Fully functional content management system of the distribution data on vascular plants of Slovakia was installed and it now contains more than 900 000 records on distribution of vascular plants in Slovakia.

**Sources of verification:** [www.pladias.sk](http://www.pladias.sk)

##### Title: TURBO(VEG) data into the PLADIAS-SK

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###### Type: Resources

**Description:** More than 900 000 distribution records of vascular plants for the area of Slovakia were extracted from the Slovak version of TURBO(VEG) database of phytocoenological releves and imported into PLADIAS-SK database.

**Sources of verification:** [www.pladias.sk](http://www.pladias.sk)

##### Title: PLADIAS-SK connected to GBIF

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###### Type: Resources

**Description:** The PLADIAS-SK database is fully connected to the GBIF portal, the data will be regularly updated

**Sources of verification:** <https://www.gbif.org/dataset/11350557-28d3-48c3-9461-a5b75f7b8feb>

##### Title: Miscellaneous datasets publishing

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###### Type: Resources

**Description:** Several participants from HBH Projekt submitted their small datasets to GBIF portal and they will continue with that, taking advantage of receiving doi for each of their datasets.

**Sources of verification:** [https://www.gbif.org/dataset/search?publishing\\_country=SK](https://www.gbif.org/dataset/search?publishing_country=SK)

#### Events

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# Workshop Unlocking Slovakia's Biodiversity Through Data Publishing

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**Dates:** 8/5/2024 - 10/5/2024

**Organizing institution:** Plant Science and Biodiversity Centre Slovak Academy of Sciences & Norway and Slovak GBIF Nodes

**Country:** Slovakia

**Number of participants:** 15

**Comments:** Further references: <https://www.gbif.no/events/2024/2024-05-cesp-workshop-slovakia.html> <https://cbrb.sav.sk/workshop-gbif-cesp-na-slovensku-alebo-spristupnenie-biodiverzity-slovenska-prostrednictvom-publikacie-dat/>

**Website or sources of verification:** <https://www.gbif.no/events/2024/2024-05-cesp-workshop-slovakia.html>

## Communications and visibility

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The Slovak version of the Pladias database ([www.pladias.sk](http://www.pladias.sk)) and its integration with the GBIF portal were presented by Karol Marhold during a lecture at the Slovak Botanical Society Conference on September 2, 2024. Many conference participants engaged in discussions about the potential for sharing their datasets through the Pladias.sk portal, which would subsequently also be accessible via the GBIF portal.

## Monitoring and evaluation

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### Monitoring, evaluation and lessons learned

#### Final Evaluation:

Evaluation of Activities and Deliverables:

All key activities were completed on time, including the workshop and the development of the PLADIAS-SK system and its pipeline to GBIF. The successful transfer and publication of more than 900,000 TURBO(VEG) records to GBIF, along with three additional datasets from HBH, fulfilled the project's goals.

Outcomes and Impact:

The project significantly enhanced Slovakia's biodiversity data mobilization, contributing over 900,000 records to GBIF. The PLADIAS-SK to GBIF pipeline will support future data sharing, with potential for easy integration with the Czech PLADIAS system, strengthening regional collaboration.

Capacity Building:

Participants demonstrated substantial improvements in data publication skills. Institutions involved are now better equipped to manage and publish biodiversity data independently, which will result in more consistent data contributions to GBIF from Slovakia.

Efficiency and Feedback:

The project was efficiently implemented, with strong partner collaboration. Feedback highlighted the workshop's relevance and the project's adaptability in addressing additional needs, such as developing the data pipeline.

Management and Support:

Support from the GBIF Secretariat and collaboration with GBIF Norway and the Slovak Academy of Sciences ensured smooth project execution. Regular reporting and oversight contributed to successful outcomes.

#### Best Practices and Lessons Learned:

Establishing the PLADIAS-SK to GBIF pipeline was a key success, demonstrating the importance of building robust data-sharing infrastructures. Hands-on, practical training during the workshop ensured participants could immediately apply their skills. Post-workshop follow-up and mentorship were crucial for sustaining impact. Flexibility in adapting the project scope, such as adding the pipeline, enhanced overall outcomes and should be considered in future projects.

#### Post Project Activity(ies):

The pipeline developed for PLADIAS is versatile, allowing new datasets to be easily published as they become available. Additionally, the dataset currently published from PLADIAS is automatically updated on GBIF on a weekly basis, ensuring that the data remains current without requiring manual intervention. This automated system will support continuous data sharing and future biodiversity data contributions.

## Sustainability plans

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Following the model of its counterpart in the Czech Republic ([www.pladias.cz](http://www.pladias.cz)), the Slovak version of the Pladias database ([www.pladias.sk](http://www.pladias.sk)) will become the central repository for vascular plant distribution data in Slovakia. The database is expected to grow further by integrating verified data from the multivolume Flora of Slovakia project, along with data from additional sources. This includes records gathered through the digitization of Slovak herbarium collections, undertaken as part of the DiSSCo ESFRI infrastructure. PLADIAS-SK will be a flagship initiative of the Plant Science and Biodiversity Centre at the Slovak Academy of Sciences.

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