

International Summer School

MSc Umwelt und Natürliche Ressourcen | HS 2026

Biodiversity Monitoring



UNIVERSITY
OF WARSAW

Dr. Iwona Dembicz
University of Warsaw, Poland
iwona.dembicz@uw.edu.pl

Prof. Dr. Jürgen Dengler
Vegetation Ecology Research Group, ZHAW, Wädenswil, Switzerland
juergen.dengler@zhaw.ch

Dr. Olha Chusova
Kholodny Institute of Botany, NASU, Kyiv, Ukraine
olgachusova28@gmail.com

Zürcher Hochschule
für Angewandte Wissenschaften



Background

Biodiversity loss and compositional change of ecological communities are two main and mostly negative consequences of the current rapid **global change** driven by humankind. In parallel to biodiversity, also biodiversity experts are at decline, while they are much needed to **detect and quantify change and to plan appropriate mitigation actions.**



Main topics & learning outcomes

Białowieża N.P.

- Particular ecosystems of Northeast Poland
- Nature conservation and socioeconomic settings

Advanced species determination

- Main focus: vegetation (mainly vascular plants)
- Additionally: small mammals & orthopterans

Field sampling

- Modern sampling methods (including plant traits)
- Sampling designs (including multi-scale sampling)
- Setting up and analysing monitoring schemes
- Advanced statistical analysis of biodiversity data

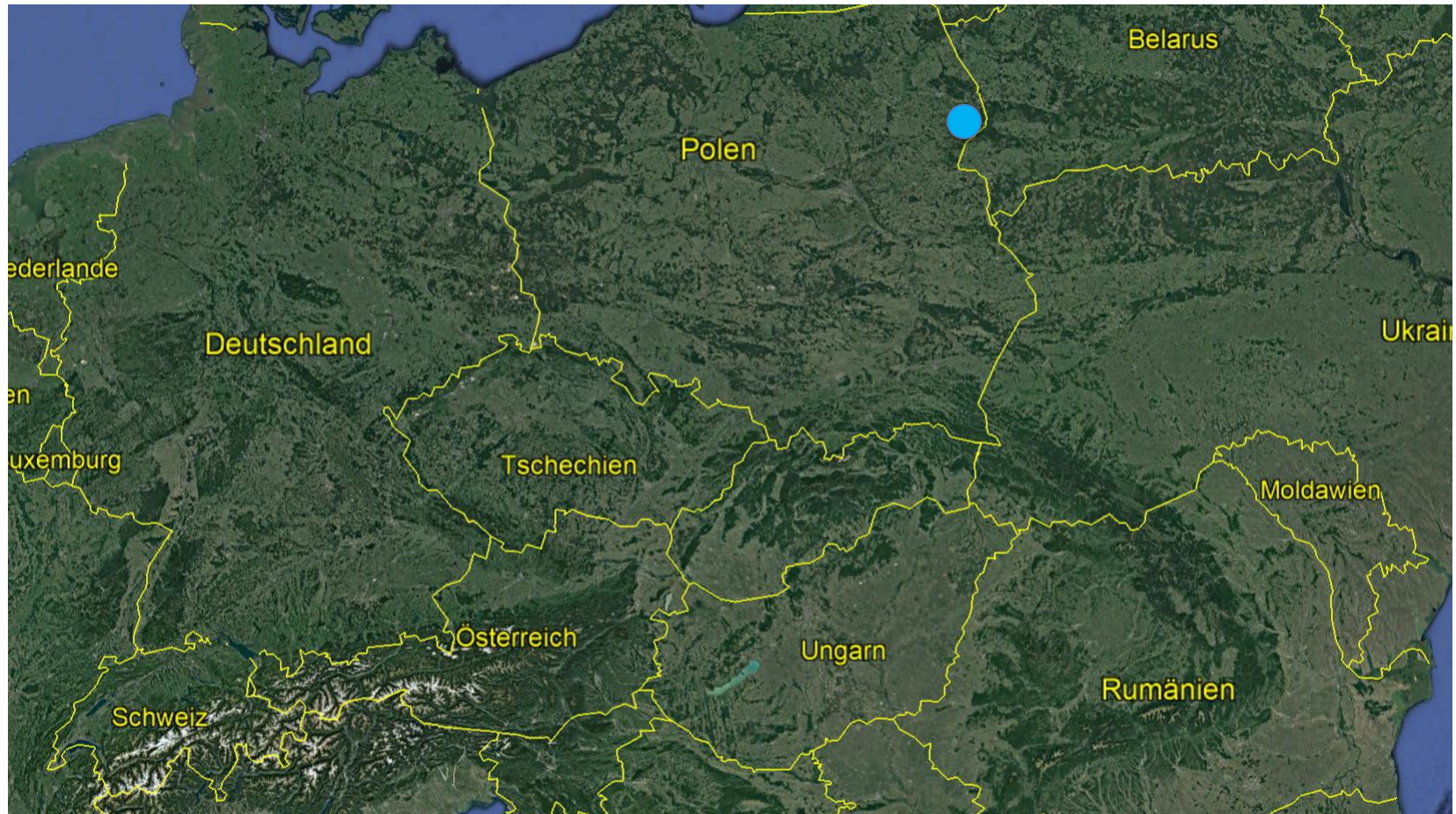
Project work (2nd week)

- Scientific projects in small groups
- Statistical analyses



Venue

*The Summer School is planned as a **11-day international field class in the field station Białowieża of the University of Warsaw in NE Poland in August 2026.***



Venue

Geobotanical Field Station of the University of Warsaw in Białowieża at the border of the Białowieża National Park



Framework of the Summer School

- **Trinational: Poland – Switzerland – Ukraine** (teachers & students)
- The Summer School consists of the **joint field part in Białowieża from 15–26 August 2026**, including a free day.
- Prior to the field part, there will be an **online preparatory part**, consisting of two half days of online lectures and exercises (in May, June or July – to be agreed).
- After the field part, there will be an **analytical part** where project groups cooperate remotely, with at least one **appointment with their supervisors** and a joint **reciprocal peer-review event** for all projects together.
- Project hand in is **15 November 2026**; grades will be ready on 30 November 2026.

Organisational issues: general

- **Arrival to Białowieża/Hajnówka:** afternoon of 15 August
- **Departure from Białowieża/Hajnówka:** morning of 26 August
- **Transport Hajnówka <-> Białowieża** will be provided
- **Accommodation & food:**
 - Sleeping rooms for 2-6 persons
 - Joint cooking (with alternating kitchen teams)
- **Project work:**
 - Sampling and start of analyses in Białowieża (2nd week)
 - Finalisation of analyses and writing up afterwards
 - Online event (reciprocal peer-review) ca. end of October
 - Handing in of reports by 15 November
- **Updated information** will be provided on the platform **Moodle** of the ZHAW; thus, all students must register there (instructions will be provided after registration)

Organisational issues: IUNR

- **10 places reserved for Swiss students** (possibly more if the other countries should not use all their places)
- **Application deadline with motivation letter: 28 February 2026**
- **Credit points for Swiss students: 6 ECTS**
- **Counts for semester: HS26**
- **Approx. costs for Swiss students** (taking into account the financial support of IUNR):
 - > Travel costs to/from Hajnówka in Poland
 - > 150–200 CHF own contribution for food, accommodation, bicycle and guided tour in the national park
- If our application for a **Blended Intensive Program (BIP)** is successful, participation for Swiss students would be fully covered and those coming with train/bus would get additional CHF 100 support.

Admission criteria

Students should be able to...

- **understand how various environmental drivers impact biodiversity** and lead to unequal distribution of biodiversity in space and time;
- **recognize species** of various plant and animal groups and use scientific determination keys; and
- **apply the software R effectively** to manipulate data and conduct descriptive and inferential statistical analyses (for Swiss students this normally means that they should have attended the Research Methods Module before).

Learning outcomes

Students will learn...

- **determine plant, invertebrate and vertebrate species** of NE Poland or the Swiss Alps, respectively;
- **develop and perform sampling and monitoring schemes** for different components of biodiversity along ecological gradients and across spatial scales to identify patterns and temporal changes as well as their drivers;
- **analyse various types of biodiversity data** with adequate statistical methods;
- **connect their findings** to in situ measured abiotic data, GIS data and information on socioeconomic drivers; and
- **write up the outcomes of a research project** conducted in a smaller group according to the standards of international scientific journals.

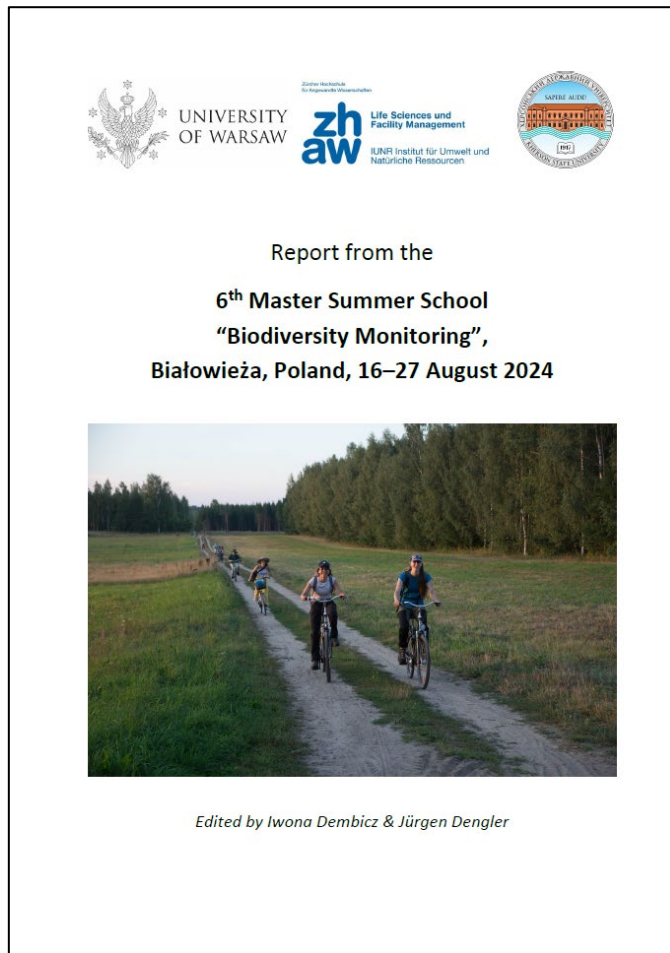
Taxonomic groups

- The **focus is on vascular plants/vegetation** as they are typically the backbones of biodiversity monitoring programs.
- Additionally, all students will get an **introduction to small mammals and orthopterans**.
- In the second part of the summer school, the students will conduct a **project focussing on one (or maximum two) of the three taxonomic groups**. However, we cannot guarantee that each student can work on his/her first-priority taxon.

Impressions from Białowieża 2024

- **Summer School 2024 – Reader:**

<https://www.researchgate.net/publication/387793843> Report from the 6th Master Summer School Biodiversity Monitoring Białowieża Poland 16-27 August 2024



Impressions from Białowieża 2022

- **Summer School 2022 – Reader:**

<https://www.researchgate.net/publication/374921310> Report from the Master Summer School | Biodiversity Monitoring Białowieża Poland 15-25 August 2022



UNIVERSITY
OF WARSAW



Report from the

**Master Summer School
“Biodiversity Monitoring”,
Białowieża, Poland, 15–25 August 2022**



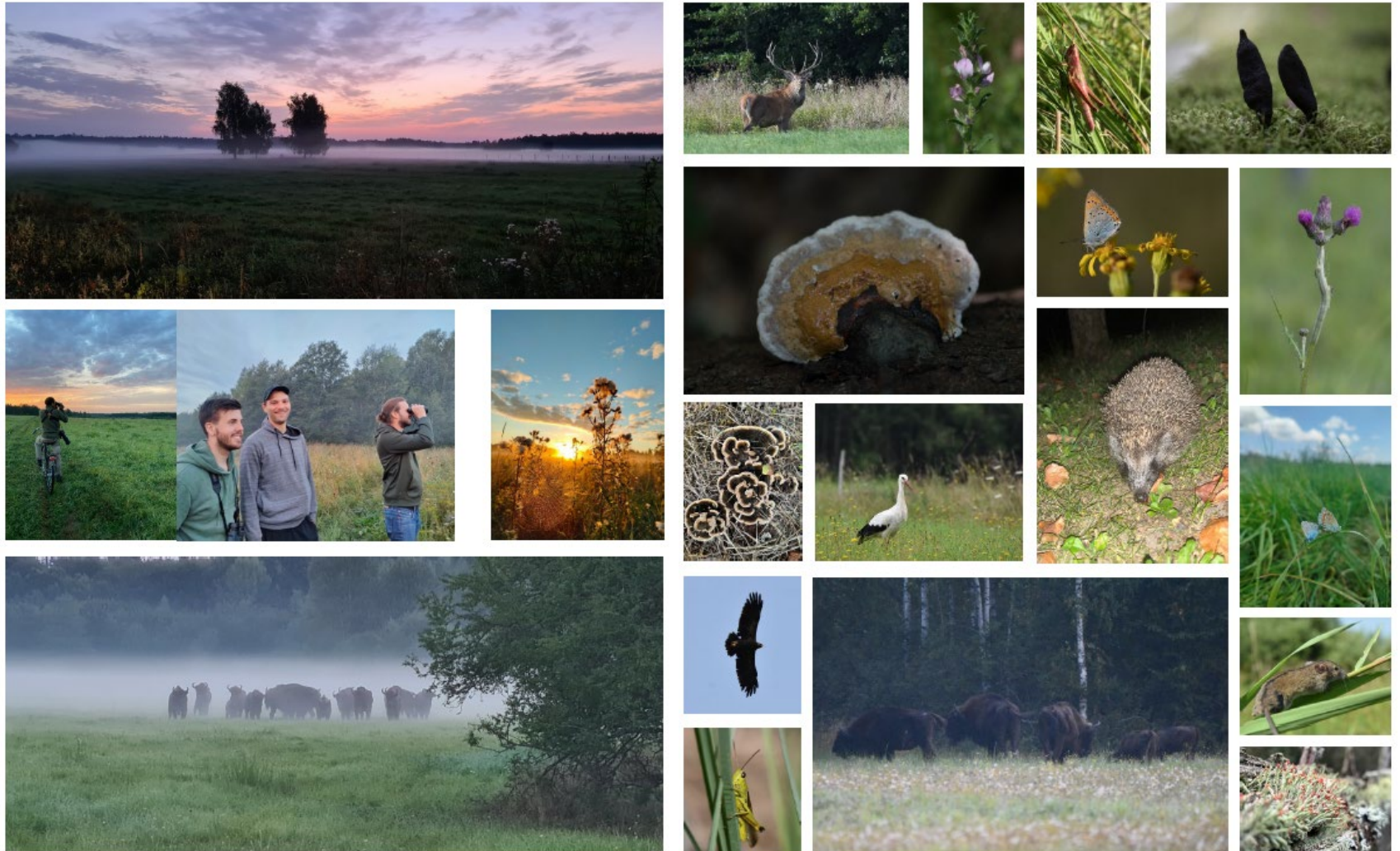
Edited by Iwona Dembicz & Jürgen Dengler



Impressions from Białowieża 2022

- **Summer School 2022 – Reader:**

<https://www.researchgate.net/publication/374921310> Report from the Master Summer School
I Biodiversity Monitoring Białowieża Poland 15-25 August 2022



Impressions from years in Preda

- **Summer School 2019 – Reader:**

https://www.zhaw.ch/storage/lsvm/institute-zentren/iunr/vegetationsoekologie/lehre/summer-school-2019_reader.pdf

- **Summer School 2019 – Report in the IUNR Magazin:**

<https://www.zhaw.ch/storage/lsvm/institute-zentren/iunr/vegetationsoekologie/lehre/iunr-magazin-summer-school-biodiversity-monitoring.pdf>

- **Summer School 2020 – Online news:**

<https://www.zhaw.ch/de/lsvm/studium/master-of-science-in-umwelt-und-natuerliche-ressourcen/berichte-aus-dem-masterstudium/detailansicht/event-news/am-puls-der-forschung/>

- **Summer School 2020 – Reader:**

<https://www.zhaw.ch/storage/lsvm/institute-zentren/iunr/vegetationsoekologie/lehre/summer-school-2020-reader.pdf>

- **Summer School 2021 – Online news:**

<https://www.zhaw.ch/de/lsvm/institute-zentren/iunr/ecosystems-and-biodiversity/vegetationsoekologie/news-und-veranstaltungen/detailansicht-news/event-news/biodiverse-und-kulinarische-highlights-in-der-summer-school-in-preda/>