



Postdoctoral position(s)

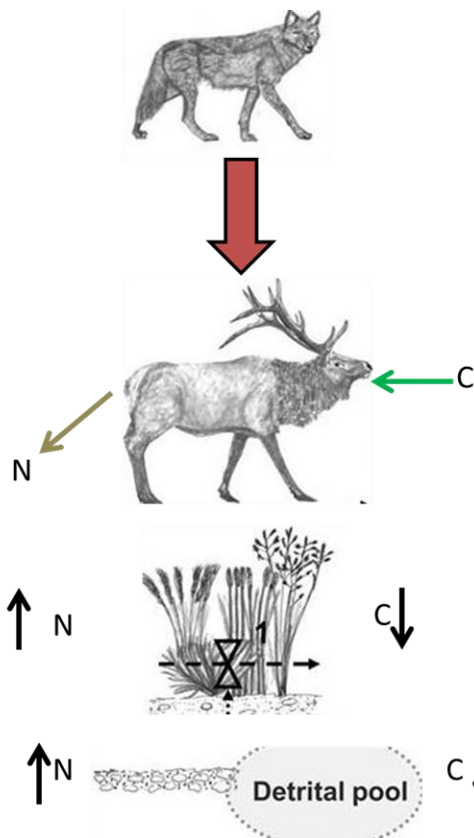
at the Mammal Research Institute, Polish Academy of Sciences, Białowieża, Poland

within the project „**The multilevel impact of predation-induced stress in ungulates on the functioning of the temperate forest ecosystem**” funded by the National Science Center, Poland, (MAESTRO, grant no 2021/42/A/NZ8/00126)

1. The project and working environment
- 1.1 The project

Predation plays a key role in regulating ecosystem processes by both consuming prey and inducing non-consumptive behavioral and physiological changes among prey animals (Creel & Christianson 2008). Recent studies suggest the possibility of both mechanisms influencing the circulation of elements in the environment, especially the cycle and sequestration of carbon in the ecosystem (Atwood et al. 2015.; Schmitz & Leroux 2020; Wyatt et al. 2021). The project framework is based on the concept of the general stress paradigm (GSP: Hawlena & Schmitz 2010), which postulates that animals subjected to predation risk-induced stress should relocate resources used for growth and reproduction (processes requiring proteins) to emergency functions (processes requiring high-energy carbohydrates). The GSP argues that stress-induced gluconeogenesis breaks down proteins into glucose and nitrogen, the excess of which is excreted into the environment. To compensate for higher energetic demands when stressed, the prey animals should select for carbon-rich, low nitrogen resources, which can affect the flux of elements through biotic and abiotic components of environment. However, no empirical studies involving large mammals have been performed to test these assumptions. The aim of this project is to investigate the impact of the risk associated with the presence of large carnivores (wolves and lynx) and the potential stress it causes in their ungulate prey (red deer and roe deer) on the functioning of a temperate forest ecosystem.

The project is carried out in the Białowieża Primeval Forest, Poland, where previous studies revealed high spatial variability in predation risk at the macrohabitat (forest complex landscape) and microhabitat (forest gaps and closed canopy) scales, and complex interactions between ungulates and predators influencing the perception of predation risk by prey animals and allowing behavioural flexibility in their response to stress. We hypothesize that if predation stress induced by large carnivores has a significant effect on the physiology of their prey, it should have a measurable effect on the stoichiometric composition i.e. the proportional share of carbon and nitrogen at different trophic levels of the ecosystem.



The specific goals include investigating: 1) stress level in ungulates (measuring faecal glucocorticoid metabolites), 2) food composition of red deer and roe deer (DNA metabarcoding), 3) carbon and nitrogen ratio in plant species consumed by ungulates, plant communities, litter and soil and ungulate urine nitrogen content (elemental analyses), 4) fiber fractions and crude protein content in plants and ungulate faeces (near-infrared spectrometric analyses), 5) digestible carbohydrates' contents in plants selected by

ungulates (spectrophotometric analyses), 6) ungulate behaviour (video-recording). Collecting biological samples is performed in a gradient of predation risk in the Białowieża Forest determined in previous studies (Bubnicki et al. 2019), with use of a set of experimental enclosure plots.

The project launched in mid-2022, therefore most of the material has already been collected, and analyses are ongoing. However, due to the large amount of collected material covering a wide range of topics (analyses of carbon and nitrogen in animal faeces, spatiotemporal analyses of vegetation composition in experimental plots, and animal behavioral responses), we are currently seeking a person or persons to support the ongoing analyses and preparing publications.

Project website:

<https://ibs.bialowieza.pl/en/projects/the-multilevel-impact-of-predation-induced-stress-in-ungulates-on-the-functioning-of-the-temperate-forest-ecosystem/>

References

- Atwood et al., 2015. Predators help protect carbon stocks in blue carbon ecosystems. *Nat. Clim. Chang.* 5, 1038–1045.
- Bubnicki J. W., et al. 2019. Linking spatial patterns of terrestrial herbivore community structure to trophic interactions. *eLife* 8: e44937
- Creel, S., D. Christianson. 2008. Relationships between direct predation and risk effects. *TREE* 23:194–201.
- Hawlena, D., and O. J. Schmitz. 2010. Physiological stress as a fundamental mechanism linking predation to ecosystem functioning. *Am. Nat.* 176:537–556.
- Schmitz O.J. and Leroux S.J. 2020. Food Webs and Ecosystems: Linking Species Interactions to the Carbon Cycle. *Ann. Rev. Ecol. Evol. Syst.* 51:1, 271-295

Wyatt, K.H., et al. 2021. Trophic interactions regulate peatland carbon cycling. *Ecol. Lett.*, 24: 781-790.

1.2. The working environment

Mammal Research Institute, Polish Academy of Sciences (MRIPAS) in Białowieża, founded in 1952, conducts research in the field of ecology, ethology, morphology, population genetics as well as population management and conservation of mammals and other terrestrial vertebrates. The mission of the Institute is to acquire, advance, and disseminate knowledge of natural patterns and processes in order to improve the scientific basis for effective nature conservation activities and sustainable development. We focus mainly on Białowieża Primeval Forest (UNESCO Biosphere Reserve and World Heritage Site) as a study area, but also on other regions of Poland and the world. The Institute employs 60 people, including researchers, PhD students, and qualified technical and administrative staff.

The project' team involves currently 18 collaborators (including 1 postdoc and 2 PhD students) mainly from the MRI PAS, but also Aarhus University, Denmark, University of Veterinary Medicine, Vienna, Austria and Łódź University, Poland. Most of analyses are performed at the MRI PAS.



2. Description of postdoc position and requirements

We are looking for a highly qualified researcher or researchers with a passion for understanding ecosystem functioning, with up-to-date knowledge of the cascading effects of predation on ecosystems and biogeochemical cycles, as well as advanced statistical skills.

2.1. Tasks and duties of a postdoctoral fellow:

- a) Contribution and support in processing, analysing and interpreting the data collected during the project, which includes:
 - Analysing the carbon and nitrogen content in animal droppings (European bison) (with technical assistance) together with spatial analysis of the data generated, with consideration of environmental variables.

- Spatiotemporal analyses of vegetation composition (data on phytosociological classification of experimental plots with Braun-Blanquet scale),
 - Spatial analyses of video-recordings of animal (ungulate) distribution and behaviour obtained with camera-traps.
 - Statistical analysis of data.
- b) Collaboration in the preparation of reports and scientific publications.

2.2. Mandatory qualifications and skills

- a) PhD degree (obtained within a maximum of 7 years, but preferably as long ago as possible within that period) in biology, ecology (preferably of mammals),
- b) Several relevant scientific publications in recognized scientific journals,
- c) Knowledge of non-consumptive predation-herbivory-environmental interactions,
- d) Basic understanding of biogeochemical processes and elemental cycling,
- e) Experience in analysing camera-trap data,
- f) Advanced proficiency in statistics, knowledge of R language and environment,
- g) Skills in analysing and solving research problems. Ability to work both in a team and independently,
- h) Fluent English.

2.3. Additional things to consider

The postdoc position is planned for minimum 1 year from February 2026 and February 2027. Extension for additional 2 years is planned. The position is available for one or more persons, depending on qualification of candidates and personal preferences.

You will need to be present and work at MRI PAS in Białowieża, Poland (52.70398N, 23.84985E) most of the employment period. Periodic remote work, however, is also possible to consider. This is quite an isolated place (see illustration above, with ca. 1500 inhabitants), ca. 17 km from a nearest city.

3. What do we offer?

- a) Fully developed ambitious research project, the subject of which fits into the latest hot scientific topic in ecology of ecosystems.
- b) MRI PAS facilities located in the middle of the study area - **Białowieża Primeval Forest**, which is one of the most natural forest ecosystems in the European lowlands and biodiversity hotspot inhabited by a rich community of large mammals.
- c) Full-time salary ensuring pretty good life standard in Poland, full coverage of all research costs and possible travel costs to and from Poland.
- d) Help with accommodation – relatively inexpensive flats in Białowieża, either located at the MRIPAS or to be rented from local residents.

4. When?

Employment time:

February 2026 to February 2027.

Possible extension for another 2 years.

Application deadline: **3 January 2026**

5. How to apply? Please send the following documents to the project leader Krzysztof Schmidt: kschmidt@ibs.bialowieza.pl:

- Certified copy of PhD diploma.
- Full-text version of PhD thesis.
- CV with detailed information on education, scientific career, skills, list of publications.
- Certificates or other documents confirming knowledge of English (if available).
- Motivation letter.
- Include at least two reference persons (e.g., prior research supervisors) familiar with your qualifications, together with e-mail addresses.
- Signed declaration of consent for processing of personal data (attached below; only first signed page should be scanned and delivered through e-mail).

6. Recruitment

The selection of candidates will be based on their qualifications including scientific achievements, experience, awards, internships, skills and competences. An interview will be part of the selection of candidates.

7. Contact person

Krzysztof Schmidt (kschmidt@ibs.bialowieza.pl; [ResearchGate profile](#)) is a principal investigator of the project and will be main supervisor of PhD students. If you would like to learn more about the project, the required qualifications, and other important matters related to this position, as well as the working and living conditions in Białowieża, please do not hesitate to contact me.

Declaration of Consent to the Processing of Personal Data for the Recruitment Procedure for NCN Research Scholarships

I hereby consent to the processing of my personal data by the Mammal Research Institute of the Polish Academy of Sciences for the purposes necessary for the recruitment and awarding of scientific scholarships in research projects funded by the National Science Centre. The processing of my personal data will be carried out in accordance with Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 (General Data Protection Regulation – GDPR) and applicable national data protection laws.

.....
Place, date

.....
Signature

I consent to the processing of my personal data by the Mammal Research Institute of the Polish Academy of Sciences in Białowieża for the purposes of the recruitment and awarding of scientific scholarships in research projects funded by the National Science Centre (required if the data provided include special categories of personal data referred to in Article 9(1) of the GDPR).

.....
Place, date

.....
Signature

Information Clause on the Processing of Personal Data under the General Data Protection Regulation (GDPR)

This information clause is provided pursuant to Article 13 of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (GDPR).

1. Administrator of Personal Data

The Administrator of your personal data is the Mammal Research Institute of the Polish Academy of Sciences in Białowieża, represented by its Director, located at 1 Stoczek St., 17-230 Białowieża, Poland, e-mail: mripas@ibs.bialowieza.pl, phone: +48 85 682 77 50.

2. Data Protection Officer (DPO)

Questions regarding the processing of your personal data and the exercise of your rights under GDPR can be directed to the designated Data Protection Officer at iod@ibs.bialowieza.pl, or by mail to the address above with the reference "Data Protection Officer".

3. Purpose and Legal Basis for Processing

Your personal data will be processed for the purpose and in the scope necessary to carry out the competition procedure for the scholarship, awarding scientific scholarships in research projects funded by the National Centre for Science, and in the case of selection for the position of a scholarship holder, in connection with the conclusion of a scholarship agreement for the payment of a scientific scholarship and activities connected with the collection of the scientific scholarship,

The legal bases for processing are:

- a) **Article 6(1)(b) GDPR** – for the performance of obligations arising from the rules of the scholarship procedure and project agreements on the basis of the Rules of Procedure for Awarding Scientific Scholarships in Research Projects Funded by the National Centre for Science, the Agreement for the Implementation and Financing of the Research Project (hereinafter referred to as "Project") in the framework of which the competition for the position of a scholarship holder is carried out
- b) **Article 6(1)(a) GDPR and Article 9(2)(a) GDPR** – based on your consent, for the purposes of participation in the recruitment procedure;
- c) **Article 6(1)(f) GDPR** – for the legitimate interests of the Administrator, e.g., in order to service, to investigate and defend mutual claims arising in connection with the scholarship.

4. Recipients of Personal Data

Your personal data may be shared with:

- a) The National Science Centre in Cracow;
- b) The appointed Scholarship Committee;
- c) Entities assessing or controlling proper project implementation;
- d) Other entities legally entitled to access the data.

Recipients will process your data only for purposes specified by the Administrator.

5. Data Retention Period

- a) Your personal data will be stored until the end of the recruitment process unless you withdraw your consent earlier or restrict it, subject to point 6.
- b) If data are processed after the recruitment process based on the Administrator's legitimate interest (e.g. in connection with the proceedings before the administrative court initiated by the candidate as a result of the refusal to grant the NCN research scholarship or suspension of the NCN research scholarship payment in connection with the termination of the scholarship agreement), they will be stored until the completion of such proceedings or until you lodge an effective objection.

6. Scholarship Award

If you are awarded a NCN research scholarship, your personal data will be processed for the duration of the project agreement and financing concluded with National Science Centre, until the completion and settlement of the project, and thereafter for the period required by law for archiving purposes for the period provided for by the law and the limitation of any claims arising from the agreement.

7. Your Rights

You have the right to:

- a) Access your personal data, including receiving a copy;
- b) Rectify, erase, or restrict processing of your data;
- c) Object to processing;
- d) Data portability;
- e) Lodge a complaint with the supervisory authority (in Poland: the Inspector General for the Office for Personal Data Protection, ul. Stawki 2, 00-193 Warsaw).

8. Withdrawal of Consent

You also have the right to withdraw your consent to data processing at any time. Withdrawal does not affect the lawfulness of processing carried out prior to withdrawal. However, revoking consent during the recruitment process may prevent the award of the NCN research scholarship.

9. Voluntariness of Providing Data

Providing your personal data is voluntary but necessary to participate in the recruitment process. For scholarship recipients, it is a condition for the conclusion and performance of the NCN scholarship agreement.

10. Data Transfer to Third Countries

Your personal data obtained for recruitment purposes will not be transferred to third countries or international organizations.

11. Automated Decision-Making and Profiling

Your personal data will not be subject to automated decision-making, including profiling.