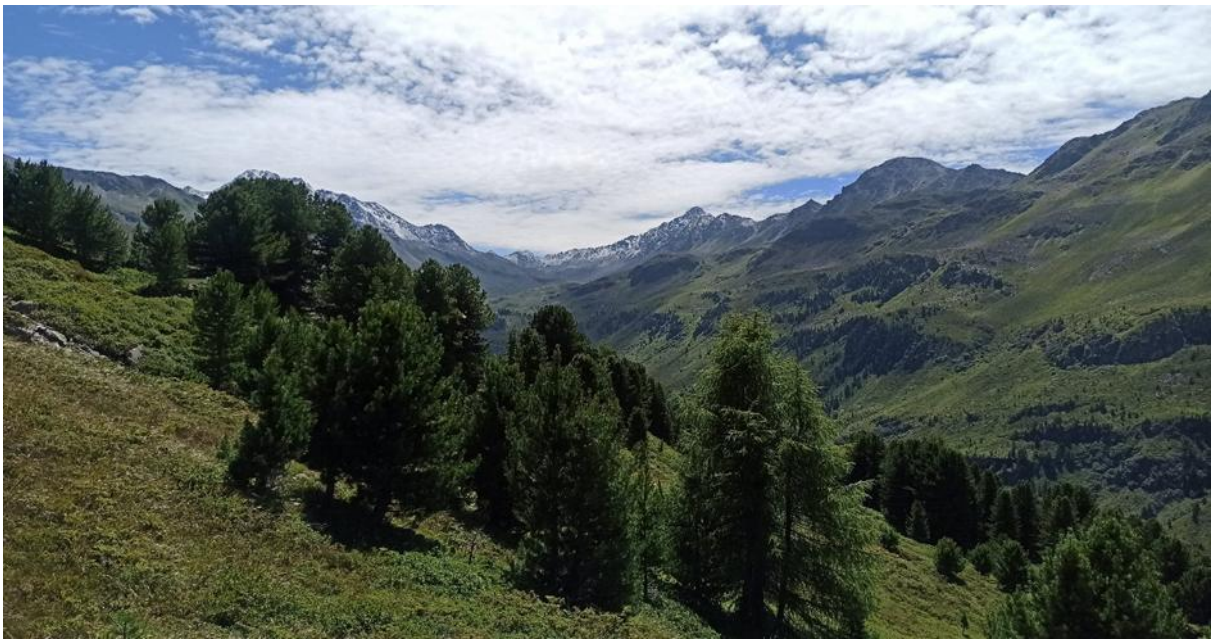
A PhD position in Mammal Research Institute, Polish Academy of Sciences, Białowieża, Poland

Mammal Research Institute
Polish Academy of Sciences
Białowieża

We are looking for a motivated PhD candidate to focus on forest ecology during the four-year position, to work in a project "***How does animal-mediated seed dispersal affect range shifts of European beech in the Swiss Alps?***". This position is funded by National Science Centre in Poland (NCN).



1. The project and the working environment

1.1. The project

Global warming drives range shifts of many organisms. Upslope shifts are often caused by the fact that conditions which used to be harsh at higher elevations become bearable. Thus, these areas can be occupied by species that previously lived at lower elevations. As a result, we can observe animals and plants moving upslope. However, while most of animals can move by themselves, plants are sessile organisms that depend on other vectors for dispersal.

Many tree species rely on animals as seed dispersal agents. One of the ways of such seed dispersal is collecting seeds by animals and burying them in stores for later consumption. But this is usually not the end of seeds' journey: such removed and buried seeds may be stolen and handled by other animals, leading to two-phase seed dispersal. Many of such buried seeds are left intact (because e.g., the cache owners die) and successfully germinate. This mechanism is used by nut-bearing tree species, both broadleaved and coniferous, for more effective spreading. Thus, it can have a huge impact on forest dynamics, including upslope movement of trees.

While the European beech is a common broadleaved tree species in lowlands and elevated areas, projections indicate that it will start to occupy higher elevations with progressive global warming. Nevertheless, this will only be possible if seed dispersers provide substantial upslope seed dispersal to microsites where recruitment is successful. Beech produces nuts that can be dispersed in a two-phase manner: first moved by avian seed dispersers, such as Eurasian jays, to their caches, and

then stolen and reused by rodents. But dispersal is not enough to succeed. In the Alps, when beechnuts reach higher elevations in the future, they will have to additionally cope with indirect interactions with other nuts - seeds of Swiss stone pine, i.e. a tree species which often covers high elevations and forms a tree line. This means that seeds of both species will have to compete for seed dispersers, while minimizing seed predation, where the winner will have higher probability of successful recruitment.

The aim of this project is to test how biotic interactions can affect upslope shifts of trees in the Swiss Alps. More precisely, we will investigate the effects of seed dispersal by avian and rodent seed dispersers: whether does this activity slow down the beech recruitment and its encroachment into higher elevations, or on the contrary – intensive removal and burial of beechnuts by various dispersers as well as intensive pine seed consumption by rodents promotes beech upslope encroachment? Do jays already remove beechnuts upslope and store them above beech current range? What is the contribution of various seed dispersers to beech recruitment within and above its current range? Which ones: beech vs. pine seeds – will have a higher chance of being cached, while the other will be readily eaten by rodents? Will high-elevation plants help beech seeds cope with harsher conditions and germinate? We will carry out comprehensive experiments and observations to answer all of these questions. We will also create simulation models, into which we include the results obtained from our experiments and observations, to assess the potential indirect impact of climate change on population dynamics of trees in montane ecosystems and tree range shifts.

Furthermore, there is also an opportunity for a PhD student to expand the project within the Białowieża Forest focusing on animal-mediated seed dispersal. The forest's diverse ecosystem offers numerous research avenues, including the study of seed dispersal in invasive species, such as Northern red oak. We encourage potential candidates to contact us for further information (see: 5. Contact person). For additional contextual background, please see:

1. Zwolak, R., Celebias, P., Zduniak, M., Bogdziewicz, M., Wróbel, A. (2024) Scatterhoarder abundance and advantages of seed burial drive dynamics of a tree – rodent interaction. Journal of Ecology 112(9): 1940-1951

2. Wróbel, A., Kurek, P., Bogdziewicz, M., Dobrowolska, D., Zwolak, R. (2022) Avian dispersal of an invasive oak is modulated by acorn traits and the presence of a native oak. Forest Ecology and Management 505: 119866

3. Wróbel, A., Kurek, P., Dobrowolska, D. (2021) Acorn storage in tree cavities by Eurasian jay (*Garrulus glandarius* L.). Journal of Ornithology 162(3): 931-934

4. Wróbel, A., Zwolak, R. (2019) Habitat-dependent seed dispersal of an introduced tree species by native rodents. Forest Ecology and Management 433: 563-568

5. Wróbel, A., Zwolak, R. (2017) Deciphering the effects of disperser assemblages and seed mass on patterns of seed dispersal in a rodent community. Integrative Zoology 12(6): 457-467

6. Zwolak, R., Bogdziewicz, M., Wróbel, A. Crone E. E. (2016) Advantages of masting in European beech: timing of granivore satiation and benefits of seed caching support the predator dispersal hypothesis. Oecologia 180: 749 – 758

1.2. The working environment

The Mammal Research Institute, Polish Academy of Sciences (MRIPAS) in Białowieża, established in 1952, conducts research in ecology, ethology, morphology, population genetics, and the management and conservation of mammals and other terrestrial vertebrates. The Institute's mission is to acquire, advance, and disseminate knowledge of natural patterns and processes to strengthen the scientific basis for effective nature conservation and sustainable development. While primarily focusing on the Białowieża Primeval Forest (a UNESCO Biosphere Reserve and World Heritage Site), research also extends to other regions of Poland and Europe. The Institute employs 60 people, including researchers, PhD students, and skilled technical and administrative staff.

2. Description of a PhD position and application requirements

We are looking for one highly motivated PhD candidate who is interested in forest ecology, including interest in plant-animal interactions, as well as has knowledge in statistical analysis tools.

2.1. Tasks and duties of a PhD student

- Data collection in the Swiss Alps and/or the Białowieża Forest, including learning and executing necessary experiments (such as camera trap deployment and seed tracking experiments) and managing collected data. Fieldwork, requiring extended periods in the field, is essential.
- Handling and performing statistical analyses of data collected, preparing visualisations of the results.
- Participating in scientific community through writing scientific papers and attending to relevant conferences and workshops.
- Complete and successfully defend a PhD dissertation within four years of employment.

2.2. Mandatory qualifications and skills

- M.Sc. degree in Biology, Ecology or other relevant subject (candidates must obtain M.Sc. degree before 01.10.2025).
- Good knowledge on ecology of European forests.
- Good written and spoken English.
- Skills in the use of statistical methods in ecology.
- Knowledge on R language and environment.
- Experience in field work.
- Good interpersonal and organizational skills, analytical and problem-solving skills. The ability to work both as a team member and to take initiatives and work independently are essential.
- Valid driving licence.

2.3. Additional (non-obligatory) qualifications

- Experience in small-mammal capture and knowledge of European mammal species.
- Documented publication record preferably in ecology.

2.4. Additional things to consider

- The PhD student will be based in Białowieża, Poland (52.70398N, 23.84985E) for the duration of the project, a remote village of approximately 1,500 people, about 20km from the nearest city. Białowieża's location near the Polish-Belarus border, where a humanitarian crisis is ongoing, may result in increased military presence and related disruptions. Candidates should be aware of these potential challenges.
- Please note that fieldwork in mountainous environments requires a substantial level of physical fitness and tolerance to harsh conditions. While conditions in the Białowieża Forest are less demanding, such skills are also recommended.

- Substantial part of work as a PhD candidate will be based on computer work in the Institute (watching videos obtained from camera traps, analyses, statistics, reading scientific literature, writing manuscripts, etc.) so be aware that fieldwork will constitute only part of candidate's activity.
- If a candidate is already hired somewhere or involved in other projects and seeking for additional activity, our project will not be a good choice – we expect a candidate to be full-time involved in the PhD project in MRIPAS – combining the PhD with other form of employment is unrealistic.

3. What do we offer?

We offer a PhD student excellent conditions to conduct their doctoral project – MRIPAS is a place you will grow as a researcher, you will be involved in a scientific study, you will be part of the team, and you will have prospects after you finish:

- Strong support by the project leader and MRIPAS staff to a PhD candidate: help with data collecting, analysing, interpretation and scientific writing. A PhD candidate will be provided with many opportunities to quickly improve their skills and competences in the field of ecology, scientific writing and data analysis.
- Monthly gross salary 5000 PLN (i.e., 4191 PLN net; the highest National Science Centre allows for PhD students), ensuring pretty good life standard in Białowieża.
- We offer employment as a PhD student for 4 years, starting October 2025.
- Help with accommodation – we have inexpensive flats in Białowieża, situated close to MRIPAS that can be rented by PhD students. Please note, however, that their availability may vary. In case our flats are unavailable, MRIPAS will assist in finding alternative accommodation.
- Possibility to work and live in a nice place: a village (i.e., Białowieża) located in the middle of Białowieża Primeval Forest – one of the most important biodiversity hotspot in Europe. MRIPAS is located 2 km from the Strict Reserve of Białowieża National Park.
- Possibility to attend courses, workshops and conferences organized by MRIPAS and BioPlanet doctoral school.
- Possibility to develop your own ideas and to apply for your own projects.

4. Application and recruitment

4.1. Deadline for applying

Applications should be sent directly to Aleksandra Wróbel (see 5. Contact person) by letter or electronically no later than 2nd July 2025. The selected candidates will be invited to an online interview and the decision will be announced no later than 31th July 2025.

4.2. Documents that need to be delivered

- Application for admission to the BIOPLANET Doctoral School along with consent for the personal data to be processed for the purpose of recruitment, and declaration of acceptance of the terms and conditions of admission (application form).
- A curriculum vitae that includes your education, academic record, former experience in ecological research, skills (language, programs, methods), conferences, workshops, courses, internships, awards, and publications (if any).
- Copy of M.Sc. diploma (in case you plan to defend your master degree in September, the diploma can be delivered later but before 01.10.2025).
- A full-text version (pdf file) of your master thesis.
- An opinion on the applicant and their past scientific activity from an academic staff member or a university teacher with at least a doctoral degree. Instead of providing such a document, a person who is an academic staff member or a university teacher and holds at least a doctoral

degree can be designated from whom the Recruitment Committee can obtain their opinion on the applicant independently.

- Declaration of consent for processing of personal data, attached below (only first page signed should be delivered via email)

Documents should be send via e-mail to **Aleksandra Wróbel**: **a.wrobel@ibs.bialowieza.pl** (subject of an e-mail: "Application, Sonata")

4.3. Recruitment

The recruitment rules will follow National Science Centre regulations. The selection will be based on the qualifications of the candidates including scientific achievements, experience, awards, internships, skills and competences. Recruitment is a two-stage process and includes: 1) evaluation of candidates' documentation and 2) an interview with selected candidates. Successful candidates will need to recruit to BioPlanet Doctoral School, you will find all details on the school webpage.

5. Contact person

Aleksandra Wróbel (a.wrobel@ibs.bialowieza.pl; ORCID; Research Gate profile) is a principal investigator of the project. It is highly recommended that you contact me as soon as you decide to apply for this position, if you want to learn details concerning the project, the PhD student duties or necessary qualifications and any other important issues related with the project – I will be very happy to informally meet and talk to potential candidates (e.g., via Zoom), so do not hesitate to contact me.

Declaration of consent for processing of personal data within the framework of the competition procedure for granting scientific scholarships in research projects funded by the National Science Centre

I consent for my personal data to be processed by the Institute of Mammal Research Institute Polish Academy of Sciences (hereinafter referred to as IBS PAN) for the purposes necessary for the recruitment process on the award of scientific scholarships in research projects funded by the National Science Centre (in accordance with the Regulation of the European Parliament and of the Council (EU) 2016/679 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, and repealing Directive 95/46/EC (General Regulation on Data Protection) (J.L. EU. 2016, No. 119, p. 1)- hereinafter referred to as RODO, and national data protection regulations issued on its basis.

....

Place, date Signature

I consent for my personal data to be processed by the Mammal Research Institute Polish Academy of Sciences in Białowieża (hereinafter referred to as IBS PAN) for the purposes of the recruitment process for the award of scientific scholarships in research projects funded by the National Science Centre (required if the data provided include special categories of data referred to in Article 9(1) of the RODO).

....

Place, date Signature

General Regulation on Data Protection (RODO) information clause

(drawn up in connection with the implementation of the obligation indicated in 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 in connection with the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC. (Official Journal of the EU L 119, p. 1).

1. The Administrator of your personal data is the Mammal Research Institute of the Polish Academy of Sciences in Białowieża (hereinafter referred to as IBS PAN), represented by the Director of IBS PAN, 1 Stoczek St., 17-230 Białowieża, e-mail address: mripas@ibs.bialowieza.pl, tel. 85 682 77 50.
2. Any questions regarding the manner and extent of the processing of your personal data and your rights under the RODO, can be directed to the designated Data Protection Officer at email address: iod@ibs.bialowieza.pl or by writing to the registered office address indicated above with the reference "Data Protection Officer".
3. 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, your data will be processed 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 (art. 6 1(b) RODO). Your personal data will also be processed on the basis of your consent to the processing of data in order to carry out the competition procedure - the basis for the processing of personal data will then be Article 6(1)(a) RODO and Article 9(2)(a) RODO. The Administrator may also process personal data in order to protect its legitimate interests (Article 6(1)(f) RODO) - in order to service, investigate and defend in the event of the occurrence of mutual claims.
4. The recipients of your personal data will be: The National Science Centre in Cracow, the appointed Scholarship Committee, entities assessing or controlling the proper implementation of the Project, within the framework of which the agreement was concluded, entities conducting control and evaluation and other entities entitled to obtain data on the basis of legal regulations.
5. Your personal data will be stored until the end of the recruitment process from the date of your application, unless, before the expiry of the period indicated above, you withdraw your consent to the processing of your data or restrict it, subject to point 6. In the event, that the basis for the processing of your personal data after the recruitment process has been completed is the legitimate interest of the administrator (e.g. in case when the processing of your personal data after the recruitment process is based on the legitimate interest of the administrator (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), your personal data will be processed only until the proceedings based on the legitimate interest of the administrator is completed or until you make an effective objection.
6. In the case of obtaining a NCN research scholarship (i.e. successful completion of the recruitment process and conclusion of an agreement for a NCN research scholarship payment), the processing of your personal data will take place for the entire period of the agreement for the implementation and financing of the research project within the framework of which the competition for the position of a scholarship holder was held, until the completion of Project implementation and settlement of the agreement for Project implementation and financing concluded with National Science Centre, and then until the expiration of the period of limitation of any possible claims resulting from the contract in the Project, and after that period the data will be kept for archiving purposes - for the period provided for by the law.
7. You have the right to request access to your personal data (including making a copy of it) and, under the conditions set out in the RODO, the right to rectify (amend), erase or restrict processing, object to the processing of your data, transfer your data and the right to lodge a complaint to the supervisory authority, which in Poland is the Inspector General for the Office for Personal Data Protection, having its registered office at: Office for Personal Data Protection, 2 Stawki St., 00-193 Warsaw.
8. You also have the right to withdraw your consent for the control to process your personal data at any time. Withdrawal of consent does not affect the compliance of the processing of your personal data which was performed on the basis of consent given before its withdrawal. However, revoking your consent to data processing during the recruitment process may make it impossible to grant an NCN research scholarship.
9. Providing your personal data is voluntary, but necessary to participate in the competition procedure in the competition procedure, and in the case of a scholarship award it is a condition for the conclusion and performance of the agreement for the payment of a NCN research scholarship.
10. Your personal data obtained for recruitment purposes will not be transferred to a third country or international organization.
11. Your personal data will not be subject to automated decision-making, including in the form of profiling.