INSTITUTE OF NATURE CONSERVATION
POLISH ACADEMY OF SCIENCES

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Scholarship at the Institute of Nature Conservation Polish Academy of Sciences, Kraków on Winter Plankton Ecology

We invite applications for a **student/PhD student position** within the project: 'Perspective for a warming world: seasonal (dis-)connectivity and the contribution of the ice cover to the functioning of freshwater food webs' (2023/51/B/NZ8/01598; 'SUKCESJA'), financed by National Science Centre of Poland.

PROJECT DESCRIPTION

The biocoenoses of lentic freshwater habitats are characterized by a seasonal succession of plankton communities that is determined by nutrient concentration, light availability and temperature. The warming of freshwater ecosystems, which is a consequence of climatic changes, has a major impact on the interactions in the food web and thus on the functioning of the entire ecosystem. Another problem that appears to be a major threat to half of the world's lakes that periodically freeze are mild winters and the predicted loss of ice cover.

Originally, winter was considered a season of little interest in freshwater studies, as it was assumed that succession in the food web would be 'reset' due to the low temperature and low light availability. However, studies which covered the subject of winter plankton ecology reveal complex under-ice dynamics of planktonic communities, as well as the fact that spring community is strongly determined by the composition of the community in the previous fall. Predicted milder winters with shortened or absent ice-cover on the lakes highlight urgency of better understanding how freshwater food webs are functioning during the winter season. Therefore the aim of this project is to explore food web structure, and pathways of energy flow in small freshwater ecosystems during the winter season, with an emphasis on the role of the ice cover and cross-seasonal cascades in the food webs.

Key food web components will be subjected to measurements of stable isotopes of carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) ratios, which allow tracking carbon source in the diet of the organism and its trophic position. The isotopic niches of the food web components will be modeled using Stable Isotope Bayesian Ellipses. In addition, functional diversity metrics will be used to outline functional structure of phytoplankton and zooplankton communities. The project will consider: 1) pre-wintering conditions; 2) overwintering (including conditions under ice and ice cover simulation experiment); 3) post-wintering conditions (with an emphasis on how overwintering will unfold on spring plankton communities).

The work plan will consist of a field survey conducted in a set of small permanent water bodies and an in-lake mesocosm experiment. Studies will cover: measurements of physico-chemical parameters of water, ice cover, biological parameters (e.g taxonomic identities, abundances, functional diversity metrics of phyto- and zooplankton communities) and measurements of stable isotopes of carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) ratios in tissues of planktonic crustaceans, smaller fractions of planktonic community (<10 µm; 10 - 50 µm; 50 - 200 µm; 200 - 500 µm) and sediment.

The field survey carried out in two fall-to-spring seasons will aim to study community structure and pathways of energy flow in freshwater food webs during the winter season and explore cross seasonal (fall/winter and winter/spring) connectivity within the food webs. In-lake mesocosm experiment will be carried out to study how the length of the ice cover (regular vs. short-term ice cover) affects functioning of freshwater food web. Within the experiment, enclosures containing entire columns of unfiltered lake water and sediment will be used to simulate stagnant (non-mixed) under ice conditions.

KEYWORDS

shallow lakes, zooplankton, winter plankton, trophic interactions, overwintering, climate change, ice cover loss, seasonality, stable isotopes, functional diversity

SCOPE OF WORK

The research will focus on food web structure and pathways of energy flow in small freshwater ecosystems during the winter season, with an emphasis on the role of the ice cover and cross-seasonal cascades in the food webs. The student will actively participate in various tasks related to implementation of the project, including field sampling surveys, carrying out the field experiment, determination of physico-chemical parameters of water, preparation of stable isotopes samples and data analysis.

CANDIDATE PROFILE

The successful candidate will conduct research in the area of hydrobiology, using the approach based on functional traits and measurements of stable isotopes ($\delta^{13}C$, $\delta^{15}N$) ratios in the tissues of diverse planktonic organisms. We are looking for a highly motivated, creative student, with a strong commitment to work, extraordinary communications skills and willingness to work in a team. Research experience in hydrobiology and/or ecology and skill in performing statistical analyses (preferably in R statistical environment) are assets. Candidates must have excellent writing and verbal communication skills. A driving license and physical ability to work in a variety of field conditions, including operating on a boat in open waters, are fundamental. Candidates are expected to prepare scientific publications, participate in business trips (Poland and abroad) and present results at scientific conferences. All qualified applicants will receive consideration without regard to race, color, religion, sex, sexual orientation or identity, national origin or disability status.

CONDITIONS OF THE SCHOLARSHIP

Scholarship: 5000 PLN/month

Period: 36 months (6-months contract with the possibility of extension to 36 months is planned), starting not earlier than 1st September 2024.

Location: Institute of Nature Conservation Polish Academy of Sciences, Kraków

CANDIDATE REQUIREMENTS

- Bachelor student/MSc student/PhD student in biology, ecology, environmental sciences or other related disciplines to the topic of the project.
- Good command of oral and written English and good skills in scientific writing.
- Hydrobiological and/or ecological background.
- Basic knowledge in plankton ecology and application of stable isotopes in ecological researches
- Experience in statistical methods and data analysis (preferably R statistical environment)

Additional assets are:

- Documented previous research experience (publications, participation in scientific conferences or research projects).
- Good skills in the identification of freshwater planktonic organisms (phytoplankton, zooplankton)
- Experience with light microscope
- Experience with fieldwork
- Driver's license.

APPLICATION FOR THE SCHOLARSHIP

The required documents are:

- A copy of the Master or Bachelor degree or document confirming the completion of first or second degree studies in biology, ecology or other areas related to the topic of the project .

- Certificate of student status (Zaświadczenie o posiadaniu statusu studenta) to confirm the fulfilment of the requirements of the NCN regulations.

- A letter of interest (maximum 2 pages), detailing the qualifications of the candidate for the position, his/her research experience, and how this position will help to fulfill personal career goals. The letter should include contact information of the candidate.

- Curriculum vitae, including education, employment and research experience with a list of publications and a short description of scientific achievements, particularly information on participation in scientific conferences, workshops, training and internships, participation in research projects, involvement in learned societies and students' scientific associations, and awarded distinctions and scholarships.

- A copy of maximum three main scientific contributions of the candidate (articles, congress presentations, popular articles).

- Contact information to two academic referees or people with whom you have worked.

- Declaration of consent for processing of personal data for the purpose of recruitment (see below).

The recruitment rules will follow the National Science Centre regulations (in particular: Regulations for awarding NCN scholarships for NCN-funded research projects). The selection will be based on the qualifications of the candidates including scientific achievements, experience, awards, internships, skills and competences. An interview will be part of the selection of candidates. Recruitment is a two-stage process and includes: 1) evaluation of candidates' documentation and 2) an interview with selected candidates, which may be complemented with additional testing (e.g. presentation, writing an essay) at the request of the Evaluation Committee.

The documents should be combined into a single pdf and sent by email to the address sekretariat@iop.krakow.pl by 16th August 2024, 12:00 CET with the subject "SUKCESJA student application". The pre-selected candidates would be invited for an interview in the second half of August. Only applications meeting all requirements will be considered. The decision of the Evaluation Committee will be announced on the IOP website by 1st September 2024.

Information obligation concerning the processing of personal data (scholarships)

Pursuant to Article 13 of Regulation 2016/679 of the European Parliament and of the Council of the European Union 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 Data Protection Regulation), the Institute of Nature Conservation, Polish Academy of Sciences informs you that:

1. The administrator of your personal data is the Institute of Nature Conservation, Polish Academy of Sciences, al. Adama Mickiewicza 33, 31-120 Kraków, Poland represented by the Director of INC PAS.
2. The data protection officer at the Institute of Nature Conservation is Mr. Rafał Andrzejewski, al. Adama Mickiewicza 33, 31-120 Kraków, e-mail address: iod.r.andrzejewski@szkoleniaprawnicze.com.pl, tel. 504976690.
3. Your personal data will be processed for the purpose necessary to carry out the process of awarding the OPUS doctoral scholarship in research projects financed by the National Science Centre, and in the case of selection for the position of a doctoral student in connection with receiving the OPUS doctoral scholarship on the basis of the Regulations for the awarding of funds for the implementation of tasks financed by the National Science Centre in the field of research projects (annex to the resolution of the NCN Council No. 95/2020 of 14 September 2020) contract for the implementation and financing of the research project in which the competition for the position of a doctoral student - scholarship holder is conducted.
4. Legal basis for the processing of your personal data:
    - Article 6(1)(c) and (e) of the GDPR in connection with the Act of 30 April 2010 on the Polish Academy of Sciences (Journal of Laws No. 96, item 619), and Resolution No. 1/93 of the Presidium of the Polish Academy of Sciences of 1 February 1993 on the establishment of the Institute of Nature Conservation, Polish Academy of Sciences approved by the President of the RM on 12 March 1993. ; the Statutes of the Polish Academy of Sciences constituting an annex to Resolution No. 8/2010 of the General Assembly of the Polish Academy of Sciences of 24 November 2010; the Statutes of the Institute of Nature Conservation, Polish Academy of Sciences; the Act of 20 July 2018. Law on Higher Education and Science; the Law on Accounting.
    - Article 6(1)(b) of the GDPR - for the purpose of concluding, performing the contract;
    - Art. 6(1)(a) GDPR - your consent - insofar as you provide data beyond that which the Administrator is authorized by law to process.
5. The provision of your personal data is necessary in order to participate in the recruitment procedure for the post of doctoral scholarship holder.
6. Recipients of your personal data will be: members of the Competition Committee, including the Project Manager, the Legal Counsel of INC PAS, the relevant Tax Office, the National Science Centre. We will also be able to make your data available to entities with whom we have concluded an entrustment agreement on the basis of Article 28 GDPR. In particular, this may involve entrusting your data to providers of technological (ICT service providers), organisational solutions. Your data in the scope of your name and surname, information about the scholarship award will be published on the Institute's website (it constitutes public information, therefore your consent is not required).
7. Data retention period With regard to the data that the Administrator processes on the basis of Article 6(1)(c) and (e) of the GDPR - for the period necessary under the law, e.g. for accounting purposes and for tax reasons. Under current legislation, this is a period of 5 years calculated from the end of the calendar year in which the tax obligation arose. Once the original purpose for which your data was collected has been fulfilled (e.g. performance of a

contract, implementation of a scientific project), your data will bę processed for archival purposes for a period of time in accordance with the archival regulations applicable to us, as well as for the period of time necessary for the protection against claims, the assertion of claims (i.e. the period of their limitation period).

8. You have the right to: access to and rectification of your data, and the right to erasure, restriction of processing, data portability, to object to processing - in the cases and under the conditions set out in the General Regulation.
9. If the processing is based on consent, you also have the right to withdraw your consent at any time without affecting the lawfulness of the processing carried out on the basis of your consent prior to its withdrawal. Withdrawal of consent for the processing of personal data can be sent by e-mail to: sekretariat@iop.krakow.pl; by post to: Institute of Nature Conservation Nature, Polish Academy of Sciences, Aleja Adama Mickiewicza 33, 31-120 Krakow or withdraw in person by presenting yourself at the Secretariat of IOP PAN, Aleja Adama Mickiewicza 33, 31-120 Kraków, room 14.
10. You have the right to lodge a complaint with the President of the Office for the Protection of Personal Data if you consider that the processing of your personal data violates the provisions of the General Regulation.

I confirm that I have read and acknowledge the above information.

……..
Name, place, date, legible signature

Consent to processing of personal data

……
Full name

I give my consent to:

- processing of my personal data, in a broader scope than required by law - i.e. in particular my telephone number, e-mail address / other enclosed data indicated by me in the form for the purposes of contact / realisation of the process of granting the OPUS doctoral scholarship in research projects financed by the National Science Centre.

You also have the right to withdraw your consent at any time without affecting the lawfulness of the processing carried out on the basis of your consent prior to its withdrawal.

…….
Place, date, legible signature