



PhD position on mapping major migratory flyways using meteorological radars

Trondheim NINA Søknadsfrist: 15.02.2023

We are opening a PhD position on mapping major migratory flyways across Norway using data collected via meteorological radars as well as mobile avian radar systems at the Norwegian Institute for Nature Research (NINA), Trondheim (Norway). The PhD degree will be associated with the Department of Theoretical and Computational Ecology at the Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam (UvA, the Netherlands).

This is a 3-year position starting 01.04.2023. The main affiliation is the Norwegian Institute for Nature Research (NINA), Trondheim (Norway) but research visits to University of Amsterdam (the Netherlands) are expected.

About the position

This position is linked to the project "**Visualizing avian migration across Norway supporting sustainable coastal and offshore wind energy development (VisAviS)**", funded by the Research Council of Norway. VisAviS' overarching goal is to learn about migratory behaviour and patterns at different spatial scales to better inform the wind energy sector and to reduce the impact of wind energy development on birds. VisAviS is structured in four work packages: 1) national mapping of major flyways, 2) local assessment of migratory behaviour, 3) spatio-temporal analysis of species-specific phenology, and 4) development of a multi-scale bird migration visualisation tool. The successful candidate will mainly work on work package 1, but will also participate and take part in the other work packages depending on the candidate's interests and skills as well as links across work packages.

The main goal of this PhD fellowship is to develop critical thinking and skills to obtain a doctoral degree in biology and environmental sciences. The candidate will analyse and visualise large-scale bird migration patterns derived from the nationwide network of meteorological radars in Norway. Specifically, using existing bird detection algorithms tailored to Norwegian radars, the PhD candidate will study and map the altitude distribution of migratory birds, factors influencing spatial variation, delimit main and secondary migratory flyways and pinpoint important stop-over sites across Norway. Furthermore, all the outcomes of this PhD project will be visualized in web-based interfaces. This latter activity is not directly associated to the PhD project, but the candidate will also be able to participate in the development of such a tool. This position, thus, is a combination of technical and methodological aspects regarding the analyses of radar data and applied ecology. The task of the PhD fellowship will be to take part in all aspects of the project, from data collection, analyses, statistical modelling and writing of scientific papers.

The working environment

The Norwegian Institute for Nature Research (NINA) is Norway's leading institution for applied ecological research, emphasising the interaction between human society, natural resources, and biodiversity. NINA is among Norway's largest applied ecology research institutes with c. 300 employees. Its staff conducts research within the natural and social sciences that are related to the interactions between humans and nature. NINA seeks to conduct research of very high quality, which is directly relevant for real world application. NINA's expertise include the genetic, population, species, ecosystem, and landscape level, in terrestrial, freshwater and coastal marine environments. It is an independent foundation established in 1988. The main office is in Trondheim, with branch offices in Tromsø, Lillehammer, Bergen, and Oslo. NINA's activities include both research and assessment, environmental monitoring, consulting, and evaluation. Our overall goal is that we will contribute to sustainable societal development by delivering research-based and current knowledge about biodiversity, climate, and society.

Research Director Dr. Svein-Håkon Lorentsen is the head of the Department of Terrestrial Ecology, where the candidate will be affiliated with. NINA's research within the Department of Terrestrial Ecology, including 40 employees from 10 different countries, is funded by a wide range of sources, including governmental environmental management agencies (at local, regional, and national levels), the Research Council of Norway, industry partners, and international organizations (including various EU research funding schemes). The department conducts research both within Norway and internationally.

The research team and the project

The candidate will work in a research team formed by scientists from NINA, UvA and the Norwegian Meteorological Institute. The main supervisors of the PhD candidate will be Senior Research Scientist Dr. Roel May and Research Scientist Dr. Diego Pavón-Jordán at the Department of Terrestrial ecology (Norwegian Institute for Nature Research) in Trondheim (Norway) who will be responsible for day-to-day supervision. In addition, the PhD candidate will have additional support and supervision from Professor Judy Shamoun-Baranes, head of the Department of Theoretical and Computational Ecology at the Institute for Biodiversity and Ecosystem Dynamics (University of Amsterdam).

Duties of PhD position

- Perform literature review and carry out statistical analyses
- Take the leadership in designing and conducting research
- Have fluent communication with collaborators at UvA and NINA
- Actively participate in group meetings and discussions
- Attend conferences and present the findings in VisAviS meetings.
- Fulfil the requirements for completing a PhD degree at the University of Amsterdam
- Write and defend a PhD thesis in English. The Thesis consists in 4 research chapters (i.e. scientific papers), one of which has to be published in a scientific journal through peer-review process before acceptance of the Thesis.

Qualifications and personal qualities

We seek a highly motivated candidate to work with us on the project outlined above. The successful candidate will have the following qualifications:

- You must have completed a master's degree with direct relevance to the position (e.g. biological or environmental sciences, but also other fields in natural and exact sciences with strong affinity to ecological research will be considered)
- Meet the requirements for admission to the faculty's doctoral program

(<https://www.uva.nl/en/research/phd/doctoral-programme/doctoral-programme.html>)

- Experience with data analysis, handling large datasets, data science, database
- The applicant should have strong quantitative skills, for example spatial modelling of large datasets and/or animal tracking data. New statistical methods will be learned
- Demonstrated competence in statistical programming (e.g. R) is a prerequisite
- Skills in ornithology, and familiarity/experience with working on interactions between birds and human activities (e.g. fisheries, renewable energy, oil and gas) will be preferred
- Familiarity with radar ornithology or using radar systems will be an advantage
- Proficiency in both written and spoken English
- The candidate will be encouraged to explore their own ideas and research questions related to the overall goals of the PhD project. Therefore, proactive problem-solving skills will be highly valued
- Work independently and in a structured manner, and can cooperate with others in the project and the research group
- Willingness to travel between Norway and the Netherlands

Terms of employment

- Exciting and stimulating academic working environment
 - An open and inclusive work environment with dedicated colleagues
 - Flexible working hours
 - Training in science and research with supervision
 - Good opportunities for professional development
- Good pension and collective life insurance

The position will be based in the Trondheim office; exchange visits to UvA are expected.

A good work environment is characterized by diversity. NINA has a personnel policy objective that the staff must reflect the composition of the population to the greatest possible extent. We encourage qualified candidates to apply, regardless of their gender, functional capacity or cultural background. NINA would like to increase the percentage of female scientists within the institute and therefore encourages female candidates to apply.

A PhD candidate will be employed at the Norwegian Institute for Nature Research (NINA). Salary will be at Norwegian pay scale of NOK 517 600 - 544 400 per annum before tax.

The period of employment is 3 years, with preferred start date on 01.04.2023.

Appointment to a PhD position requires that the candidate is admitted to the PhD program in Biology within three months of employment, and that participates in an organized PhD program during the employment period. It is a prerequisite that the candidate is present at and accessible to the institution on a daily basis.

About the application

The application and supporting documentation to be used as the basis for the assessment must be in English.

Publications and other scientific work must follow the application. Please note that applications are only evaluated based on the information available on the application deadline.

The application must include:

- A cover letter (1-2 pages) where the candidate explains their motivation for applying for this

PhD fellowship, answers to the defined qualifications and details a brief description of the scientific relevance of the candidate's research experience.

- A CV including a list of publications with bibliographical references and contact details (telephone and e-mail) for three referees.
- Certificates, diplomas, and transcripts in English. If the master's degree is not yet awarded, a confirmation that the thesis has been submitted is required
- A copy of the master's thesis (or confirmation of submission, see above)
- A publication list (if applicable) with description of the applicant's role

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience, and personal and interpersonal qualities. Motivation, ambitions, and potential will also count in the assessment of the candidates.

Application deadline: 15.02.2023.

Any questions regarding the position and/or the project can be referred to Senior Research Scientist Roel May (phone: +47 95785995; e-mail: roel.may@nina.no) or Research Scientist Diego Pavón-Jordán (phone +47 40485250; email: diego.pavon-jordan@nina.no).

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