PhD position in conservation genetics

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PhD position in conservation genetics: “The importance of inbreeding and genetic drift in conservation of fragmented populations”

We have a fully funded 3-year PhD position in conservation genetics available at the Centre for Biodiversity Dynamics, Department of Biology, NTNU. The appointment can be extended up to one year, subject to acceptance of 25% teaching duties in agreement with the Department of Biology.

The Centre for Biodiversity Dynamics (CBD) is a leading cross-disciplinary Centre of Excellence, with primary interests in population ecology, evolutionary biology and community dynamics. CBD works at the interface between biology and mathematical sciences, and strives to apply cutting-edge theoretical and statistical frameworks to field data to resolve key questions in the context of both fundamental and applied science. Further information is available at http://www.ntnu.edu/cbd

A major challenge in conservation biology is the lack of information needed to properly evaluate genetic risks of population extinction. Specifically, there is great need for a better understanding of the mechanisms underlying inbreeding depression and loss of genetic variation in nature, and how these processes affect the dynamics and viability of fragmented populations.

The PhD project is part of a research project recently funded by the Research Council of Norway (RCN) that aims to provide such insight. First, the PhD candidate will integrate genomic analyses of inbreeding and genetic drift with high-quality demographic data to identify the causes of spatio-temporal variation in inbreeding and inbreeding depression, and examine the occurrence and strength of drift load in subdivided house sparrow (Passer domesticus) populations at the coast of Norway. Second, data from both natural and experimentally manipulated populations will be used to examine the genetic architecture of inbreeding depression and heterosis. Third, novel quantitative genetics and genomics approaches will be used to quantify the effect of inbreeding and drift for the adaptive potential in subdivided populations. These results will be combined with results from other parts of the RCN project to evaluate the importance of genetic processes and spatial structure for the short- and long-term viability of fragmented populations.

The PhD student will work closely with two postdocs and national and international collaborators and will be supervised by Professor Henrik Jensen (main supervisor), Professor Jane Reid and Associate Professor Stefanie Muff (co-supervisors) at CBD, NTNU.

Main duties and responsibilities

- The PhD project will involve sophisticated statistical analyses of extensive genomic data (genome-wide high-density SNP genotypes and whole genome sequences) and field data (individual data on phenotypes, survival and reproduction).
- The PhD student is expected to participate in fieldwork and further research training in house sparrow populations at the coast of mid- and northern Norway.
- The project would suit a highly motivated and numerate student with enthusiasm for working on fundamental questions in conservation genetics using empirical data.
• Full training in key aspects of the project, and associated transferable skills, will be provided. The position provides an excellent opportunity for students who wish to qualify for future work in both basic and applied research positions and/or wish to pursue a career in academia.

**Qualification requirements**
The PhD-position’s main objective is to qualify for work in research positions. The qualification requirement is completion of a master’s degree or second degree (equivalent to 120 credits) with a strong academic background in biology or equivalent education with a grade of B or better in terms of NTNU’s grading scale. Applicants with no letter grades from previous studies must have an equally good academic foundation. Applicants who are unable to meet these criteria may be considered only if they can document that they are particularly suitable candidates for education leading to a PhD degree.

MSc students who expect to complete their master’s degree studies by summer 2020 are also encouraged to apply. Employment will then be postponed until the master’s degree is finished.

The appointment is to be made in accordance with the regulations in force concerning State Employees and Civil Servants and national guidelines for appointment as PhD, postdoctor and research assistant.

NTNU is committed to following evaluation criteria for research quality according to The San Francisco Declaration on Research Assessment - DORA.

**Other qualifications**
We seek candidates with a keen interest in conservation genetic questions and a strong academic record in quantitative evolutionary ecology and/or population genetics (including quantitative genetics and genomics). Good competence in R and/or other statistical programming languages is also important.

- Fundamental knowledge or very strong interest in relevant topics in conservation genetics and evolutionary biology, for example inbreeding depression, heterosis, genetic rescue, quantitative genetics
- Willingness to learn and use novel statistical and/or mathematical analysis methods
- Some experience with fieldwork and/or molecular genetic laboratory work is favourable
- Experience working with large genomics data sets would be advantageous
- Good written and oral English

**Personal characteristics:**

- Highly motivated and enthusiastic about conservation genetics
- Excellent team-working and written and verbal communication skills
- An independent, self-driven working style

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal suitability, as well as motivation, in terms of the qualification requirements specified in the advertisement
We offer

- An exciting and stimulating project that is part of a strong international academic research environment
- An open and inclusive work environment with dedicated and interactive supervisors and colleagues, fostering gender equality and international mobility in science
- Favourable terms in the Norwegian Public Service Pension Fund
- Employee benefits

Salary and conditions

PhD candidates are remunerated in code 1017, and are normally remunerated at gross from NOK 479 600 before tax per year. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

The period of employment is 3 years (with a possibility for up to one year extension with teaching duties). Appointment to a PhD position requires admission to the PhD programme in Biology (https://www.ntnu.edu/studies/phbi).

As a PhD candidate, you undertake to participate in an organized PhD programme during the employment period. A condition of appointment is that you are in fact qualified for admission to the PhD programme within three months.

General information

Information about working at NTNU can be found here: www.ntnu.edu/nirs

A good work environment is characterized by diversity. We encourage qualified candidates to apply, regardless of their gender, functional capacity or cultural background. Under the Freedom of Information Act (offentleglova), information about the applicant may be made public even if the applicant has requested not to have their name entered on the list of applicants.

Having a population of 200 000, Trondheim is a small city by international standards with low crime rates and little pollution (http://trondheim.com/). It also has easy access to a beautiful countryside with mountains and a dramatic coastline.

Questions about the position can be directed to Prof. Henrik Jensen, e-mail Henrik.Jensen@ntnu.no

About the application:

Publications and other academic works that the applicant would like to be considered in the evaluation must accompany the application. Joint works will be considered. If it is difficult to identify the individual applicant's contribution to joint works, the applicant must include a brief description of his or her contribution.

Please submit your application electronically via jobbnorge.no with your CV, diplomas and certificates. Applicants invited for interview must include certified copies of transcripts and reference letters. Please refer to the application number 18/20 when applying.

Application deadline: 15.03.2020

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The Norwegian University of Science and Technology (NTNU) creates knowledge for a better world and solutions that can change everyday life.
The Faculty of Natural Sciences

The Faculty of Natural Sciences is a key player in national and international research and education programmes in natural sciences and technology. Our research focuses on global challenges in the areas of energy, climate, the environment, food, water, health and welfare. The Faculty consists of eight departments as well as the Faculty Administration.

Apply for this job

Deadline
15th March 2020

Employer
NTNU - Norwegian University of Science and Technology

Municipality
Trondheim

Scope
Fulltime

Duration
Temporary

Jobbnorge ID
181497