Ecological connectivity in the Alpine anthropic matrix:

natural reserves and corridors for the conservation of brown bear in the Alps

(ABC - AlpBearConnect)

A 3 yr- position is available at the University of Trento, with a co-funded project by University of Trento-Dept. of Civil, Environmental and Mechanic Engineering (Prof. Marco Ciolli), Fondazione Edmund Mach (Dr Francesca Cagnacci, Dr Annapaola Rizzoli), and Stelvio National Park (Dr Luca Pedrotti). The project will address relevant questions and proposed applied actions for the conservation of the brown bear population in Central-Eastern Alps, in close collaboration with the Biodiversa funded 'BearConnect' project (http://www.biodiversa.org/1010).

Project Logistics & Application

The candidate will be enrolled at the University of Trento, and spend time at all Institutions that have co-funded the project. Moreover, there will be opportunities to visit external international labs, especially those involved in the BearConnect project. The project will mainly utilize existing datasets, but may also include a fieldwork component. Hence, candidates with attitude for quantitative approaches to ecological questions, and motivation to work on a diversity of dataset typologies are strongly encouraged to apply.

Qualifications, skills and experience required

The candidate will essentially require:
- A basic understanding of animal ecology and behaviour.
- A flexible approach to travel and fit in multiple working environments and work under a tight schedule.
- Effective written and communication skills in English (proved by suitable certificates, if not native speaker)

Desirable skills:
- Knowledge of R programming language and/or PostgreSQL/PostGIS database environment and/or QGIS/Grass
- Fieldwork experience in rugged terrains

THE APPLICATION DEADLINE IS THE 29 th OF AUGUST 4pm CET 2017.

Application:

Interested, motivated candidates should apply online on the University of Trento PhD call website, for the PhD PROGRAMME IN CIVIL, ENVIRONMENTAL AND MECHANICAL ENGINEERING, 33rd cycle – Academic Year 2017-2018 http://www.unitn.it/en/ateneo/1954/announcement-of-selection
The list and details of topics can be downloaded on the same page. ABC is Curiculum A, #7, **ref. A2 for reserved scholarships UniTN and Edmund Mach Foundation Scholarships** (see also: http://www.unitn.it/en/ateneo/53711/icam-scholarshipsfellowships).

For any further enquiry, please contact Dr Cagnacci francesca.cagnacci@fmach.it, cceing Prof Ciolli marco.ciolli@unitn.it, and Dr Pedrotti luca.pedrotti@stelviopark.it

Project Description:

If current times are defined as 'Anthropocene' era, Europe is among the most anthropized areas of the planet. Primeval habitats are hardly found in continental Europe, and substantial anthropic influence in the composition, structure, and functionality of ecosystems has been continued for millennia. In parallel to population increase, though, human activities have cycled in Europe before than elsewhere, revealing an unexpected, parallel alternation of fragmentation and connectivity within European landscapes. Indeed, the last decades of the 20th century have been characterized by social, structural and ecosystemic changes, that have reshaped the cultural, economic and ecological landscape of Europe. In the Alpine region, such changes have been paramount. In parallel, territories abandoned by humans were recovered by natural habitats and used as connecting bridges for re-establishing wildlife species, also aided by EU regulations and network of protected areas. Among all, populations of large carnivores have increased and expanded, offering the unexpected outlook of a 'complete' trophic chain re-establishing at the very edge of highly anthropic areas. Nowadays, this process is at a tipping point. Re-establishment of biodiversity has clashed against major threats, such as geographic and functional barriers, for example valleys with a very dense anthropic concentration or disappearance of habitat types. In this project, we focus on the distribution of the brown bear population in the Alps, starting from the core of a reintroduction project happened in early 2000 in Trentino. We aim at a obtaining a realistic prediction of the distribution of the brown bear population in Trentino/Central Alps, and of the connectivity potential across the Alpine-Dinaric metapopulation, in presence of large stretches of under-utilized areas and, in contrast, hot-spots with intense anthropic use. These predictions will be compared with the current matrix of protected/non-protected areas, and with possible future scenarios of increased/decreased structural connectivity. The project will take advantage of the large amount of georeferenced data available in the study area and of advanced modeling and GIS techniques. The expected outputs will be the evaluation of the status quo for bear conservation and for the establishment of functional meta-population, and the assessment of ameliorating actions. The results of the project will be important for bear conservation, but also for an improved 'societal connectivity' between wilder areas and areas of intense anthropic presence and use.
The project will be developed in full harmonization with the objectives of the Biodiversa funded project 'Bearconnect' (Functional connectivity and ecological sustainability of European ecological networks: a case study with the brown bear), so that an intense scientific exchange and coordination with the Bearconnect consortium and network will be pursued. The project will also coordinate, when possible, with other existing projects (e.g. Life Dinalp Bear). The doctoral student will therefore work in a stimulating international research environment.