SPRING SCHOOL

Habitat distribution models and their applications in ecology, evolutionary ecology and conservation

12-16 March 2012,
at the University of Grenoble, France

Organizers:
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An initiative of the FP6 ECOCHANGE project (http://www.ecochange-project.eu/)

Species distribution models (SDM, i.e. habitat suitability models, ecological niche models) have become the tools of choice to investigate various questions in ecology, such as the main correlates of species ranges, the potential impacts of environmental change on biodiversity, the macroevolution of ecological niches, or the potential spread of invasive species in an adventive range.
The last 10 years have seen tremendous improvements in SDMs, the increase of freely available software (e.g. BIOMOD, DIVA, Dismo, NicheMapper, Maxent), and the possibility now to run alternative models in one row in order to have the uncertainty associated with predictions/projections. Whereas it was somehow challenging 10 years ago, running a species distribution model for a particular species has become relatively easy during the last few years. Better data availability, improved tools and a better understanding of the statistics behind the tools are the ingredients for such an increase in capacity and popularity.

Our third (spring) school will not focus primarily on practicing the techniques per se, but rather on applying them in various fields of ecology and evolutionary ecology. Therefore, every attendee should have a good knowledge of R and associated packages necessary for the school (e.g. raster, BIOMOD, presence-absence).
Lessons and practical material from past Summer Schools will be made available to students a month or two prior to the school in order to allow the attendees to get familiar with the material and to deepen the necessary principles, concepts and tools.

The Spring School will consist on the one hand of lectures, in which concepts and theory will be presented, and specific examples will be presented demonstrating different fields where SDMs have been used and applied successfully (climate change, community ecology, niche evolution, invasive spread).
On the other hand, the Spring School will be dedicated to specifically prepared, and moderately complex analytical exercises, among which the students will choose one, solve them analytically, and present the results in short lectures. The exercises (all carried out in R) will be related to topics such as: invasive species modelling, climate-change induced migrations, niche evolution and conservation planning, and will include elements such as designing stratified sampling schemes, GIS analyses and point/raster overlay.

In summary, the Spring School will be organised as follow:

Monday 12 March
14-17h
Concepts, refreshers, theories, and few examples
17-18h
Short presentation or poster by students

Tuesday 13 March
8:30-12h
Keynotes related to different uses of SDMs in Ecology, Evolutionary Ecology and Conservation.
14-17h
Open discussion and problems with past practicals
17-18h
Short presentation or poster by students

Wednesday 14 March
8:30-10h
Short presentation of the exercises by 'tutors'
12-14h and 14-17h
Practicals/exercises
17-18h
Open questions

Thursday 15 March
8:30-12h
Practicals/exercices
14-17h
Presentation of the exercise results by students

Friday 16 March
8:30-12h
Remaining questions / discussion on own research.

Fees: €800, including registration, accommodations, all meals and breaks
Venue: At the middle of French Alps mountains: http://www.pbetoile.com/

Participants will be limited to 30. Applications (incl. CV and motivation) should be sent to wilfried.thuiller@ujf-grenoble.fr no later than 31 January 2012