



ForBio course in biogeography for systematists – tools and sources

19.-23. March 2012, University of Bergen

Biogeography is the study of distribution of taxa or communities in space and through (geological) time. Simple mapping of taxon distributions is definitely a very common task for systematists, but understanding the regular fashion that the organisms of interest vary along geographical gradients of latitude, elevation (or seafloor depth), and isolation can be very useful to tracing the evolution of species or populations. (Note that this course will not present any phylogeographic methods!)

ECTS: 3

Language of instruction: English

Course materials: reading list, suggested literature, suggested online material

Assessment: evaluation based on presence during the course and short presentation (10min) on a given topic, grade pass/fail; ForBio certificate over participation; knowledge of the material in the reading list is requested

Required previous knowledge/course specific requirements: no specific requirements; basic knowledge in using the R software package is beneficial and can be acquired by taking part in the 2-day introductory course provided 15.-16.3.

Course start: Monday 19.3.2012, 9:00

Course end: Friday 23.3.2012, 16:00

Locality: Bergen, Norway

Application deadline: 10.2.2012

Please use the course application form posted on

www.forbio.uio.no/events/courses/ForBio-CourseRegistrationForm.doc

Course contact: Christiane Todt (christiane.todt@bm.uib.no)

Accommodation: will be organized by ForBio

Aim of the course

This is a basic course presenting useful tools for mapping and species distribution modeling. It is designed for participants who want to learn how to access online geographical information (special focus Scandinavia) and how to handle simple datasets common in systematic studies (e.g., comprised of species, geographical coordinates, elevation, maximum summer temperature, minimum winter temperature). ArcGIS, SAM (Spatial analyses in Macroecology) and Maxent (software for species habitat modeling) will be introduced and used for computer lab exercises. In addition, the use of R software for modeling diversity patterns and changes in species distribution will be demonstrated (please note the extra 2 days R-intro-course offered 15.-16.3.!). In examples and exercises, a special focus will be set on the influence of climate change. Finally, the



participants' understanding of how biogeographic considerations can be useful for biosystematics will be broadened by a number of talks given by systematists with variable background and interests.

Main teachers/instructors/presenters

Eric Meineri (EECRG research group, Department of Biology, UiB)

John-Arvid Grytnes (EECRG research group, Department of Biology, UiB)

Pål Buhl Mortensen (Institute of Marine Research Bergen, MAREANO project)

Nils Valland (Artskart, Norsk Artsdatabanken)

Kjersti Sjøtun (Marine biodiversity research group, Department of Biology, UiB)

Endre Willassen, Manuel Malaquias, Christiane Todt (University Museum of Bergen, The natural history collections, research group Phylogenetic systematics and evolution)

Preliminary program

19.3. morning: Introduction; overview useful literature and online sources; presentation MAREANO project (Norwegian national project on marine habitats and biodiversity; speaker Pål Buhl Mortensen,);

afternoon: presentation and discussion ARTSKART (speaker Nils Valland); short self-presentations by participants

20.3. morning: Introduction mapping and species distribution modeling (teacher Eric Meineri)

afternoon: Computer lab: ArcGis, SAM, Maxent (Eric Meineri)

21.3. morning: 10 min presentations by the participants (course relevant topics, will be "handed out" in mid February)

21.3. afternoon: computer lab: software as day before, main topics climate change and predictions of future species distributions (Eric Meineri)

22.3. morning: diversity patterns and observed climate change effects of diversity (John Arvid-Grytnes, Department of Biology, UiB)

22.3. afternoon: computer lab, exercises to the topics presented in the morning, software: R (John-Arvid Grytnes)

23.3. presentation of various biogeographic-systematic studies (marine, terrestrial, plants, animals...); final discussion.