4$^{\text{TH}}$ NECLIME WORKSHOP ON DIGITAL PLANT DISTRIBUTION

LIÈGE, MAY 30 – 31, 2017

1$^{\text{ST}}$ CIRCULAR

Dear colleagues and members of NECLIME,

It is our pleasure to invite you to the 4$^{\text{th}}$ NECLIME workshop on digital plant distribution that will be held at the Unité de Modélisation du Climat et des Cycles Biogéochimiques, Université de Liège, Belgium, from **May 30 to 31, 2017**. The workshop will be organized by Louis François, Alexandra Henrot, Angela Bruch, and Torsten Utescher.

On the workshop we will address issues related to climate requirements of plants and biome modelling. For each scientific topic we plan an introductory talk followed by a round table discussion.

Scientific topics

- Quantification of climate requirements of plant taxa using digital data on plant distribution

  So far, NECLIME has a large inventory of climate data of modern plants (cf. Palaeoflora Database at www.palaeoflora.de). These data are used to reconstruct palaeoclimate using various methods (e.g., Coexistence Approach). Palaeoflora data are based on analogue chorological resources. In order to improve the climatic resolution and reliability of the data we intend to make available climatic data for plants based on better resolving, digital resources.

- Setting up a NECLIME standard for the generation of climate data sets based on digital resources

  This topic will focus on statistical procedures regarding the numerical treatment of grid cells defining the border of the plant distribution area. A special focus will be on possible algorithms to be used in areas with high altitude / steep topography in order to minimize unwelcome bias introduced by microclimates. Moreover, considerations on the usefulness of density functions for plant occurrences in their distribution areas will be included.

- Additional sensitive climate variables in palaeoclimate reconstruction

  In palaeoclimate reconstructions using the Coexistence Approach 3 temperature (mean annual, warmest and coldest months means) and 4 precipitation variables (annual mean and three monthly means) are used as a standard. However, there are other, so-called bioclimatic variables such as temperature extremes or quantifiers of duration and temperature of the growing season, on which

plants may respond more sensitively. These additional variables can be assessed from climatologies using digital plant distribution. Moreover, these variables play an important role when defining climatic thresholds of Plant Functional Types in biome modelling.

- The role of CO_2 in triggering climatic requirements of plants

The role of CO_2 in palaeoclimate reconstructions was already discussed on the 3rd NECLIME workshop on digital plant distribution, held in Stratton Audley, UK, in 2014. Based on this it was concluded that palaeoclimate reconstructions for time-spans with high atmospheric CO_2 might be biased, mainly with respect to palaeo-precipitation. Here we would like to discuss intended studies including proxy data interpretations and modelling to substantiate this assumption.

Venue

Unité de Modélisation du Climat et des Cycles Biogéochimiques, Université de Liège, Belgium.

Preliminary schedule

May 29 – arrival

May 30 – 31 scientific programme

June 1 – departure

The **workshop fee** will be **50.- Euro** per person to cover costs for conference facilities, and coffee breaks payable on site.

Further details will be distributed with the second circular to be sent end of February 2017 to all of you who registered.

Please register for the workshop **not later than February 15, 2017** sending email to **Louis François** (Louis.Francois@ulg.ac.be). Please feel free to make any suggestions, propose contribution, etc.

If you require an official invitation for your visa application, please ensure to timely inform Louis.

We are looking forward to seeing you in Liège.

Yours,

Louis François, Alexandra Henrot, Angela Bruch, and Torsten Utescher