

**sDiv Workshop**  
***“ Biodiversity across spatial scales - linking macroecological models to local-scale biodiversity patterns by explicit delineation of the regional species pool – sREGPOOL ”***  
**02.-06.12.2013**  
**Workshop Summary**

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### **Summary**

The workshop aimed to integrate macroecological approaches to describe and explain local-scale biodiversity patterns by developing methods for the appropriate delineation of regional species pools. We aimed to provide a consistent macroecological approach to assess the species pool of a local community, and develop a highly useful tool for community ecologists and conservation planning.

### **Workshop program**

The workshop started off with presentations of all participants. The presentations pointed out the importance of species pools for enumerated possibilities, questions and applications of species pool related concepts. They also showed that delineating species pools can be challenging in many cases and researchers have used different approaches.

To delineate species pools, a number of factors have to be considered and a unified concept needs to be developed to create comparable results for different studies.

After the presentations the group had a day of round table discussions in which the problems and challenges of delineating species pools were addressed. During the round table discussion the participants developed a unified model to delineate species pools and checked for datasets to test the concept.

The remaining days focused on work in short groups. Three different groups were formed. One focused on the theoretical concept and started write the manuscript. The two other groups worked on empirical examples each. The result of the empirical examples showed that the theoretical concept can be applied in macroecological and community ecology studies.

### **Brief summary of presentations**

Presentations were 12 minutes with 3 minutes for questions. A brief summary of the topics discussed is given below:

**Dirk Nikolaus Karger:** Presented the influences changing species pool sizes can have on patterns of biodiversity and community composition across different spatial scales.

**Anna Cord:** Presented influences and challenges of spatial scale on species distribution modelling over larger timeframes

**Michael Kessler:** Presented patterns of local and regional diversity from a community ecology perspective and showed possible causes for differences in biodiversity patterns at different spatial scales.

**Holger Kreft:** Presented regional and local patterns of biodiversity from a macroecological perspective, their explanations and possible challenges.

**Ingolf Kühn:** Pointed out challenges in delineating species pools in species distribution modeling and presented current approaches in delineating species pools in macroecology.

**Brody Sandel:** Presented ideas of delineating species pools for community ecology and discussed the possibility of a probabilistic approach.

**Juliano Sarmiento Cabral:** Discussed the importance of species pools in ecological niche modeling.

**Adam Smith:** Showed the importance of different mechanisms on community assembly and the challenges in disentangling processes in community ecology.

**Jens-Christian Svenning:** Presented ongoing, state of the art research in which a clear and practical species pool definition could have a huge impact.

**Hanna Tuomisto:** Showed current pitfalls in recent publications which led to questionable inference about the effect of regional richness and species pools on community assembly processes.

**Patrick Weigelt:** Presented possibilities of measuring numerous factors influencing species pool size by showing examples from island biogeography.

**Karsten Wesche:** Discussed the influence of different environmental factors on local communities.

### Planned outputs and work plan

The group plans one publication in peer-reviewed journals, which will focus on the topics discussed during the workshop. The manuscript will present a unified concept of delineating species pools and adds novel properties to species pools which allow for inference of community assembly processes, checking for under sampling or can show if a specific local site is more prone to biological invasions as others.

80% The manuscript were already written during the workshop. After the workshop the missing parts of the manuscript will be added by the responsible persons.

### Publications

Karger, D.N., Cord, A., Kessler, M., Kreft, H., Kühn, I., Sandel, B., Sarmiento Cabral, J., Smith, A., Svenning, J.-C., Tuomisto, H., Weigelt, P., Wesche, K. (in prep.) *Defining species pools in ecology\**

\*preliminary title

Presentations of workshop results at international conferences are also planned for the near future.

### Working balance

Brain storming: 20%  
working in groups: 60%  
Presentations: 20%

### Working atmosphere and feedback on sDiv support

The sDiv support was excellent and the rooms were well equipped. The feedback of the participants was enthusiastic, and the working atmosphere was excellent.

### Participants

Surname	Name	Institution	Homepage
Cord	Anna	Helmholtz Centre for Environmental Research - UFZ	<a href="https://www.ufz.de/index.php?de=30669">https://www.ufz.de/index.php?de=30669</a>
Karger	Dirk Nikolaus	University of Zurich	<a href="http://www.systbot.uzh.ch/Personen/Postdoktoranten/DirkKarger.html">www.systbot.uzh.ch/Personen/Postdoktoranten/DirkKarger.html</a>
Kessler	Michael	University of Zurich	<a href="http://www.systbot.uzh.ch/Personen/ProfessorenundDozenten/MichaelKessler.html">www.systbot.uzh.ch/Personen/ProfessorenundDozenten/MichaelKessler.html</a>
Kreft	Holger	University of Goettingen	<a href="http://www.uni-goettingen.de/biodiversity">www.uni-goettingen.de/biodiversity</a>
Kühn	Ingolf	Helmholtz Centre for Environmental Research - UFZ	<a href="http://www.ufz.de">www.ufz.de</a>
Sandel	Brody	University of Aarhus	<a href="http://brodysandel.wordpress.com">http://brodysandel.wordpress.com</a>
Sarmiento Cabral	Juliano	University of Goettingen	<a href="http://www.uni-goettingen.de/en/156341.html">http://www.uni-goettingen.de/en/156341.html</a>
Smith	Adam	Missouri Botanical Garden	<a href="http://www.adamlilith.net">www.adamlilith.net</a>
Svenning	Jens-Christian	University of Aarhus	<a href="http://pure.au.dk/portal/da/svenning@biology.au.dk">http://pure.au.dk/portal/da/svenning@biology.au.dk</a>
Tuomisto	Hanna	University of Turku	<a href="http://www.sci.utu.fi/sivustot/amazon">http://www.sci.utu.fi/sivustot/amazon</a>

Weigelt	Patrick	University of Goettingen	<a href="http://www.uni-goettingen.de/en/157014.html">www.uni- goettingen.de/en/157014.html</a>
Wesche	Karsten	Senckenberg Museum für Naturkunde Görlitz	<a href="http://www.senckenberg.de/goerlitz">http://www.senckenberg.de/go erlitz</a>