Geophysical Research Abstracts,
Vol. 10, EGU2008-A-08585, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-08585
EGU General Assembly 2008

Systematic biodiversity conservation planning – quantifying area requirements for wetland species conservation in Europe

K. Jantke (1,2), U. Schneider (1,2)

(1) Research Unit Sustainability and Global Change, University of Hamburg, Germany,

(2) International Max Planck Research School on Earth System Modelling, Germany (Kerstin.Jantke@zmaw.de)

The current extent of protected areas for biodiversity conservation in the European Union is about 20 % of the total land area. Reservation has often been done ad hoc and uncoordinated between countries and despite increasing conservation effort, biodiversity loss is still accelerating. In view of the high competition for land, efforts to enhance conservation areas have to take place in the most efficient manner.

Systematic conservation planning provides tools to identify optimally located priority areas for reservation to represent the region's biodiversity. We follow and extend the "minimum set problem" by means of a deterministic, spatially differentiated mathematical optimization model. The model estimates habitat allocation under the objective of minimizing the total area for setting aside land for biodiversity conservation purposes.

The model is solved for different scenarios of cooperation in conservation planning (including political, systematic, and biogeographical cooperation of planning). The analysis is done for European wetland species but can easily be adapted to other species, biodiversity features, or regions. Our approach illustrates and quantifies the efficiency of multi-species versus single-species conservation activities.