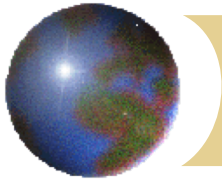


The Role of Biodiversity and Climate in the Functioning of Ecosystems

Oswaldo E. Sala

University of Buenos Aires and IFEVA-CONICET



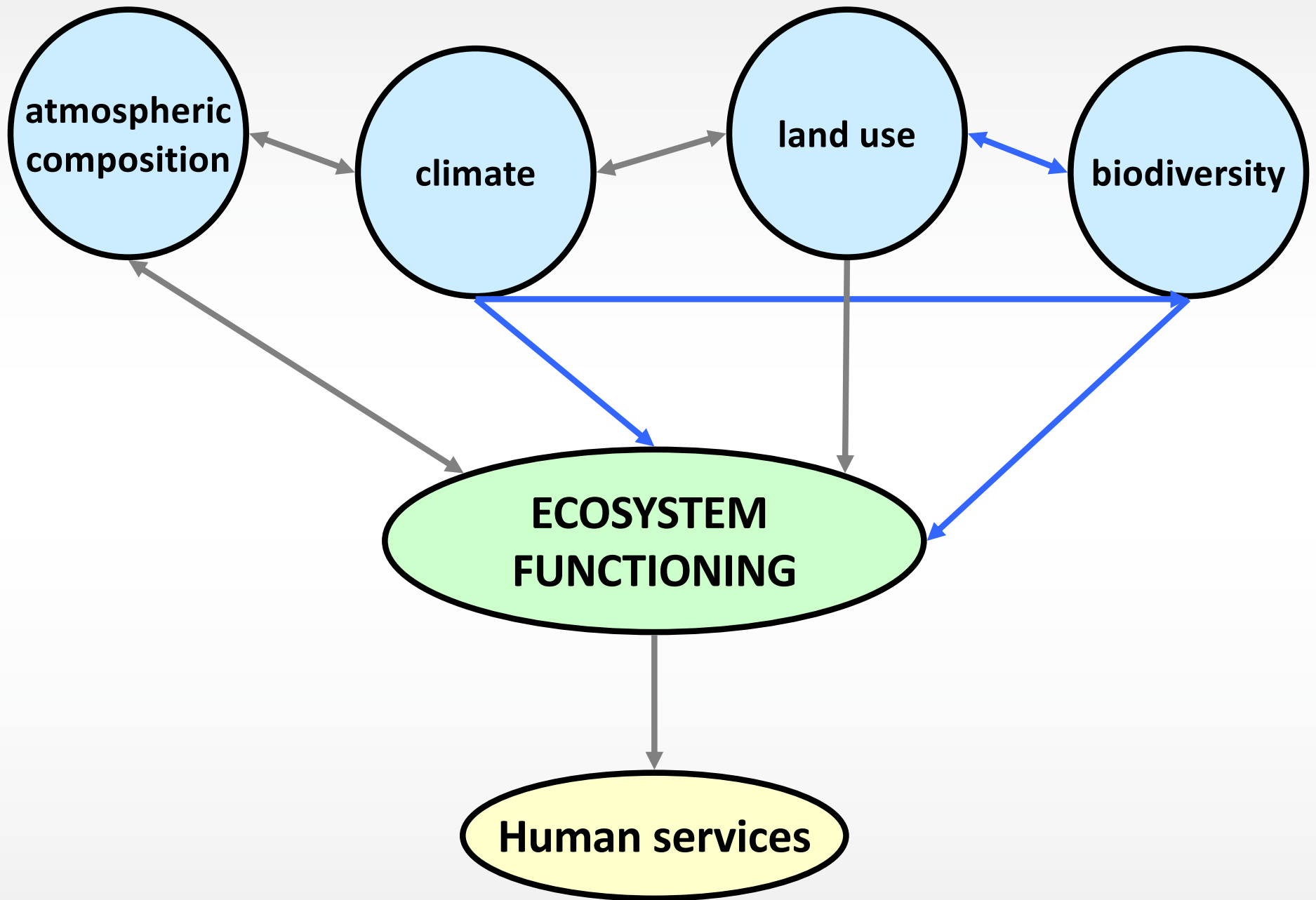
Collaborative Research Network

- ✦ CRN-012 Research
<http://www.ifeva.edu.ar/crn/>
- ✦ Inter-American Institute of Global Change Research <http://www.iai.int>
- ✦ Participants from six countries – Argentina, Chile, Mexico, United States, Uruguay, Venezuela

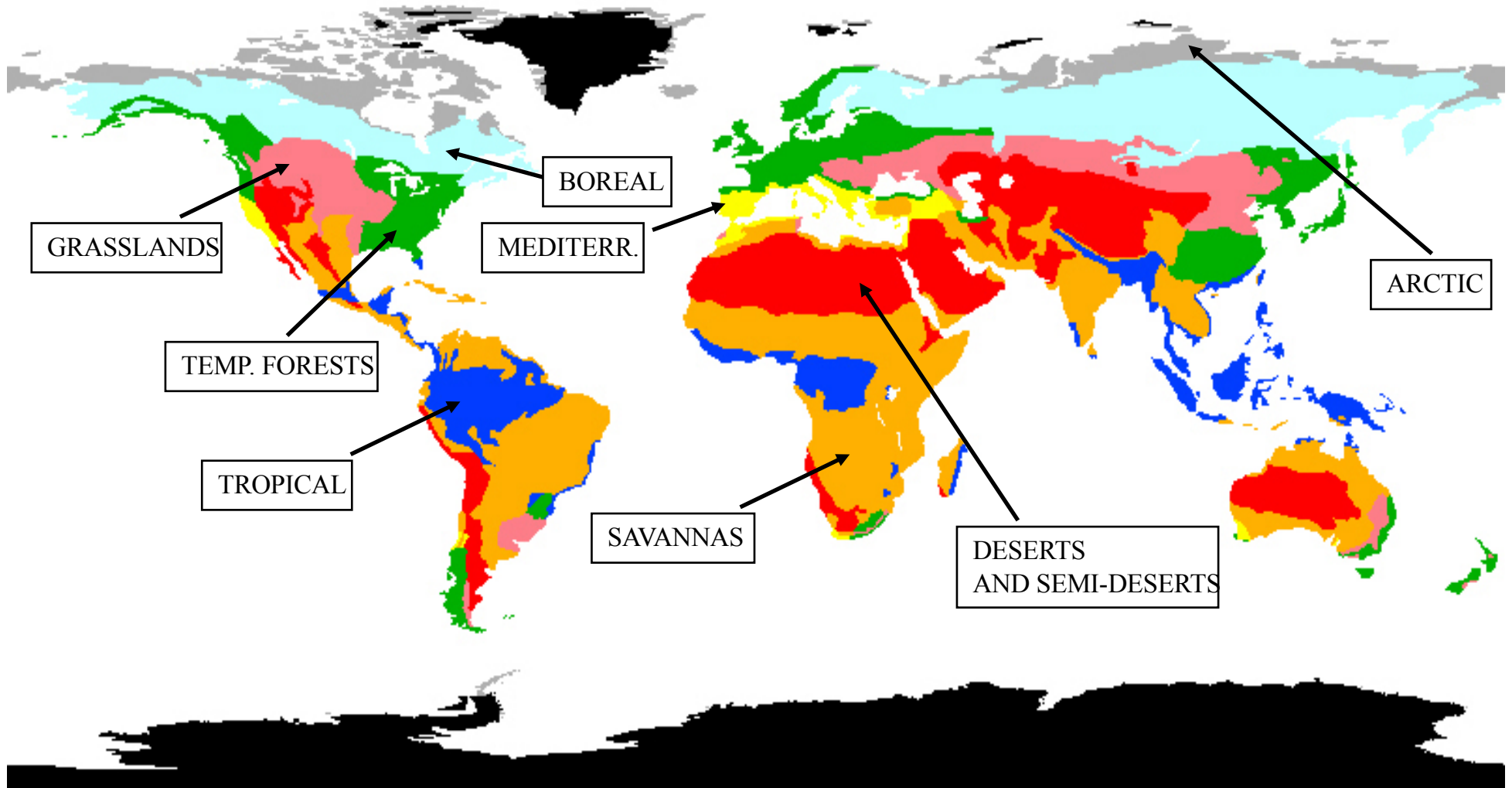
PARTICIPANTS

CRN-012



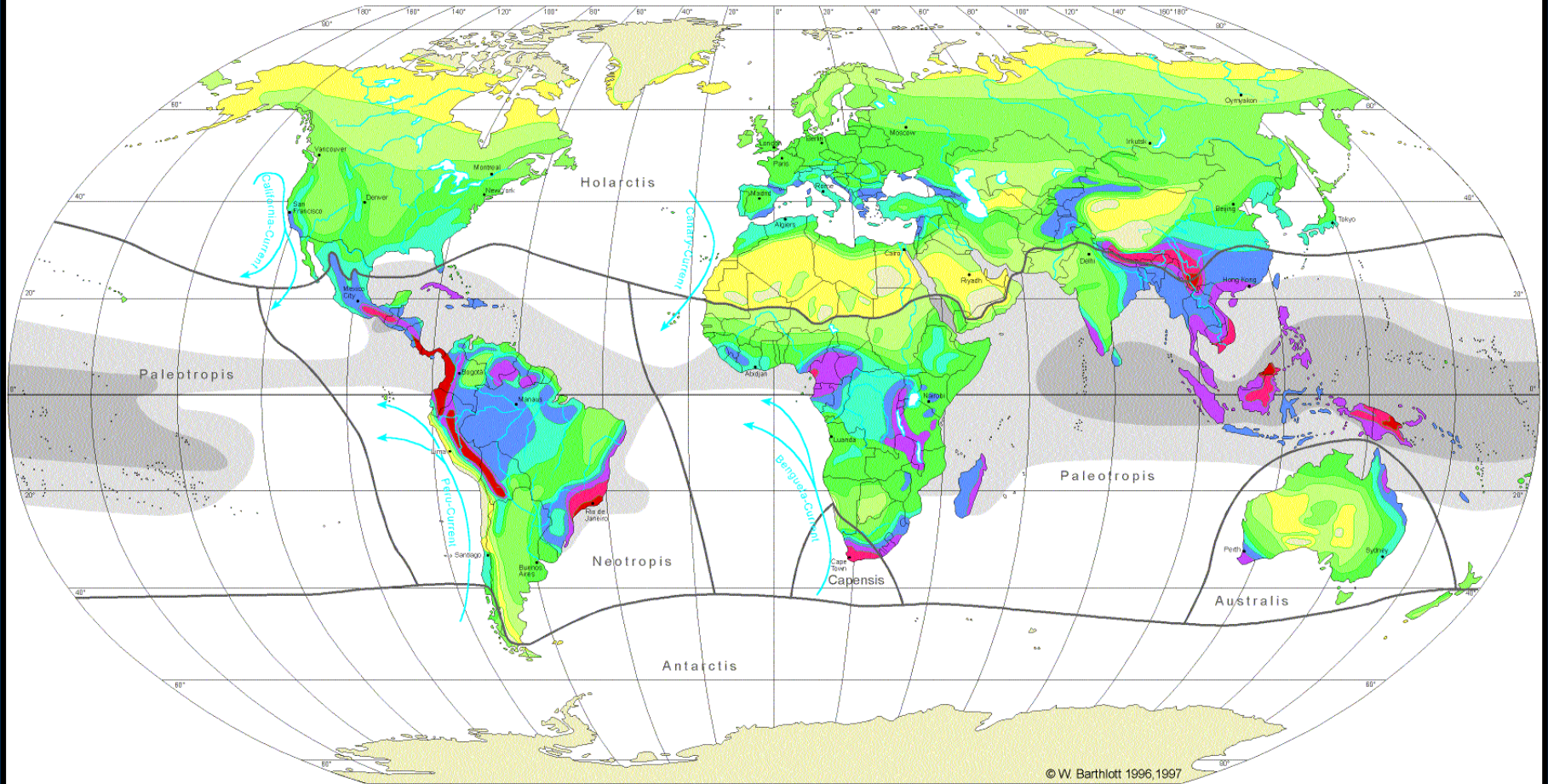


ECOREGIONS OF THE WORLD



after Bailey (1998)

GLOBAL BIODIVERSITY: SPECIES NUMBERS OF VASCULAR PLANTS



© W. Barthlott 1996, 1997

Robinson Projection
Standard Parallels 38°N und 38°S
Scale 1: 130000000


Diversity Zones (DZ): Number of species per 10.000km²



Capensis floristic regions

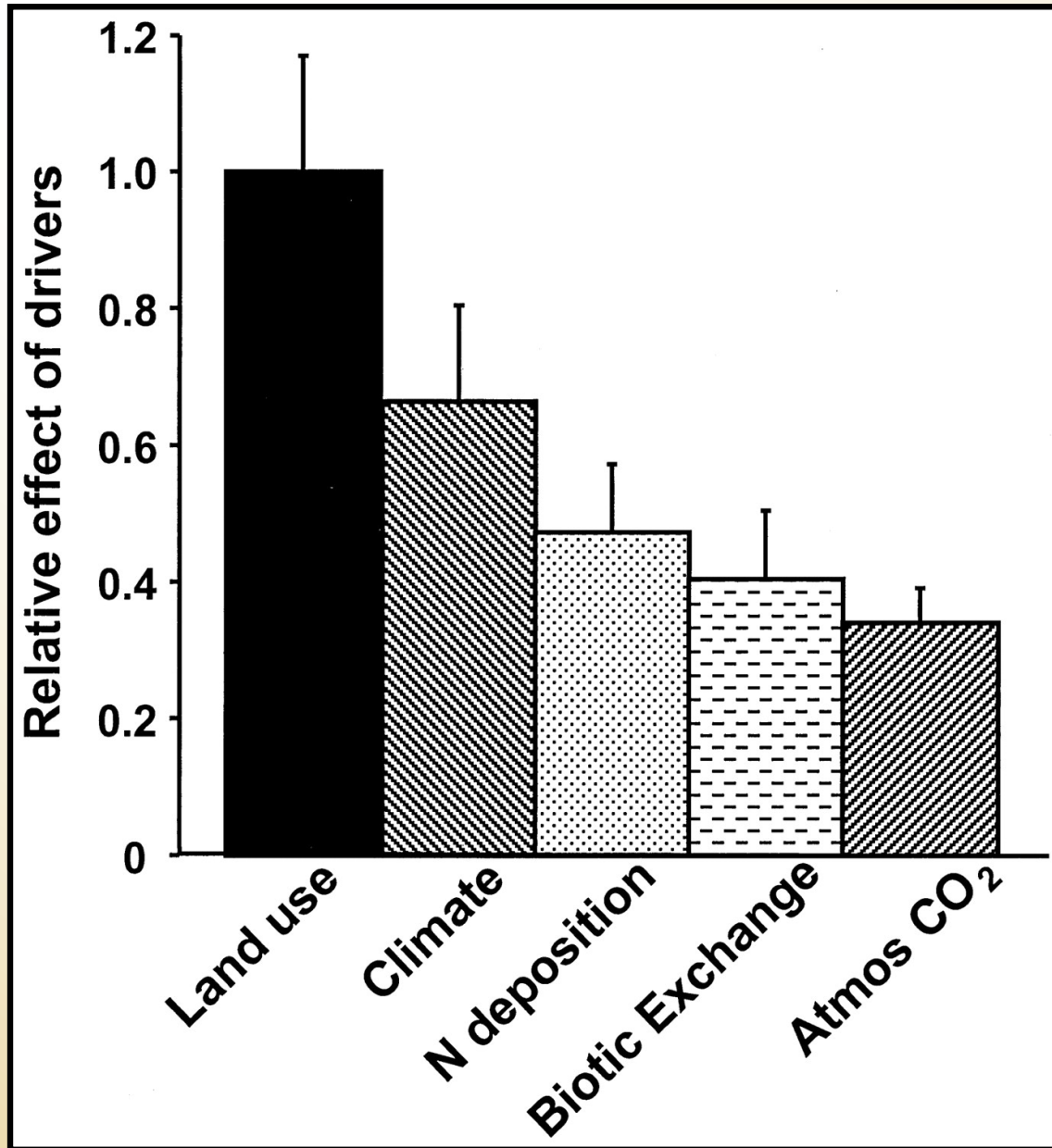
sea surface temperature



 cold currents

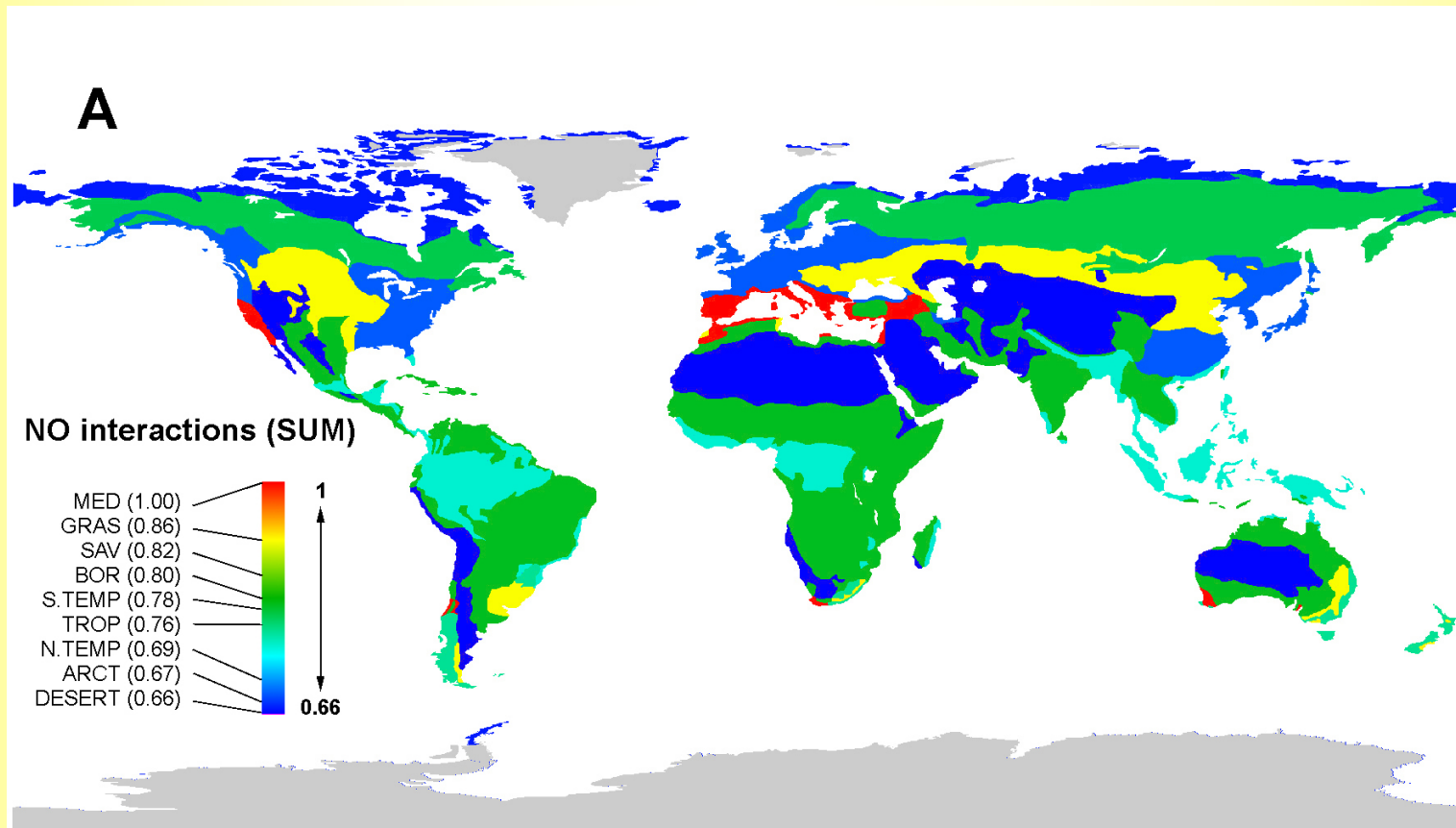
W. Barthlott, N. Biedinger, G. Braun
F. Feig, G. Kier, W. Lauer & J. Mutke 1997
modified after
W. Barthlott, W. Lauer & A. Placke 1996
Department of Botany and Geography
University of Bonn
German Aerospace Research Establishment, Cologne
Cartography: M. Gref
Department of Geography
University of Bonn

Biodiversity Scenarios for 2100



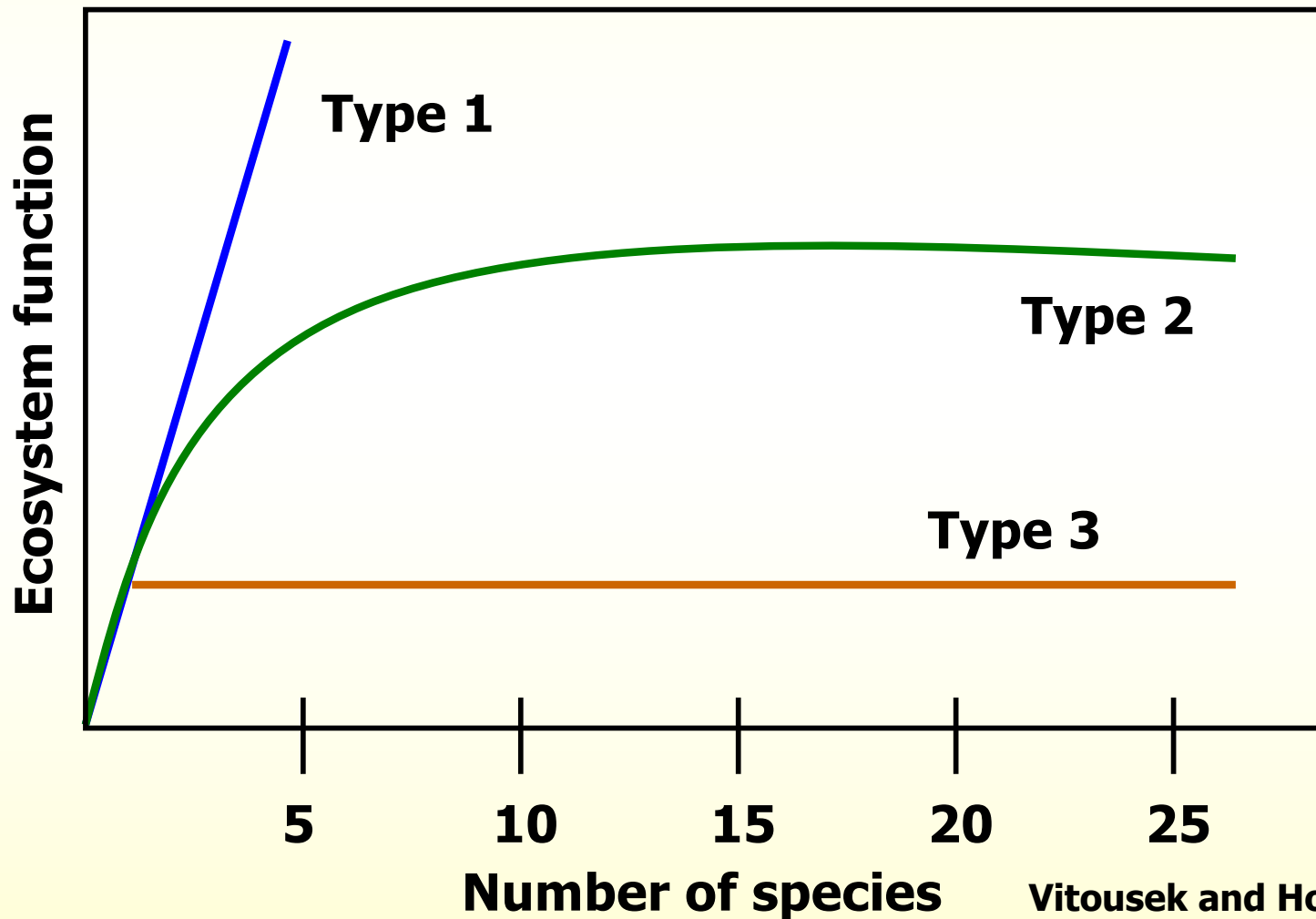
Sala et al. 2000
***Science* 287:1770-1774**

Biodiversity Scenarios for 2100



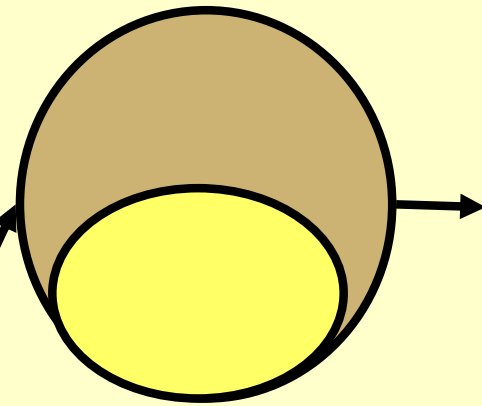
Sala et al. 2000
***Science* 287:1770-1774**

Biodiversity and Ecosystem Functioning



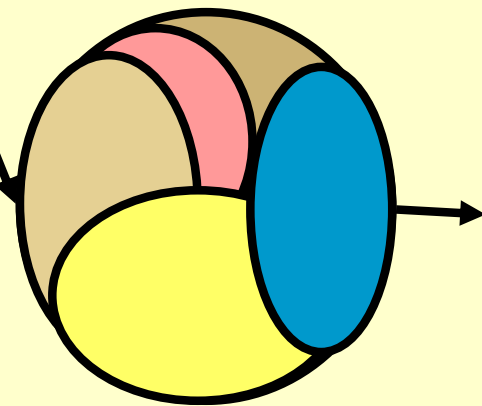
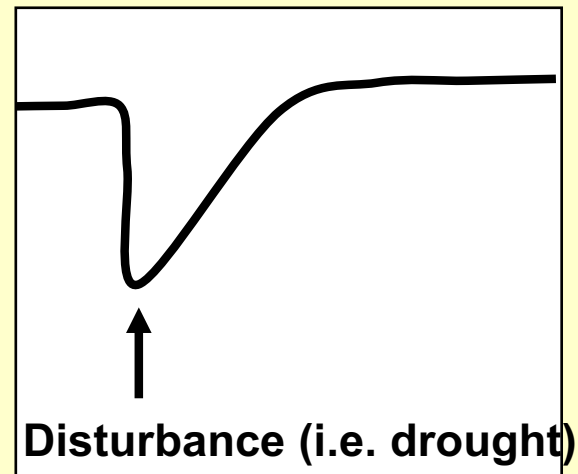
Vitousek and Hooper 1993

**EXOGENOUS
DISTURBANCE**



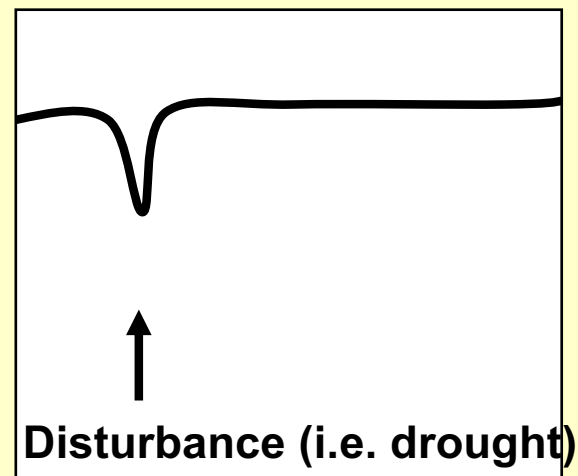
Δ ecosystem

functioning



Δ ecosystem

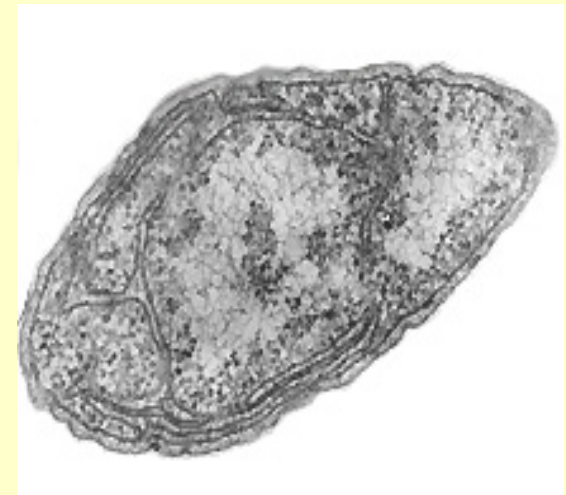
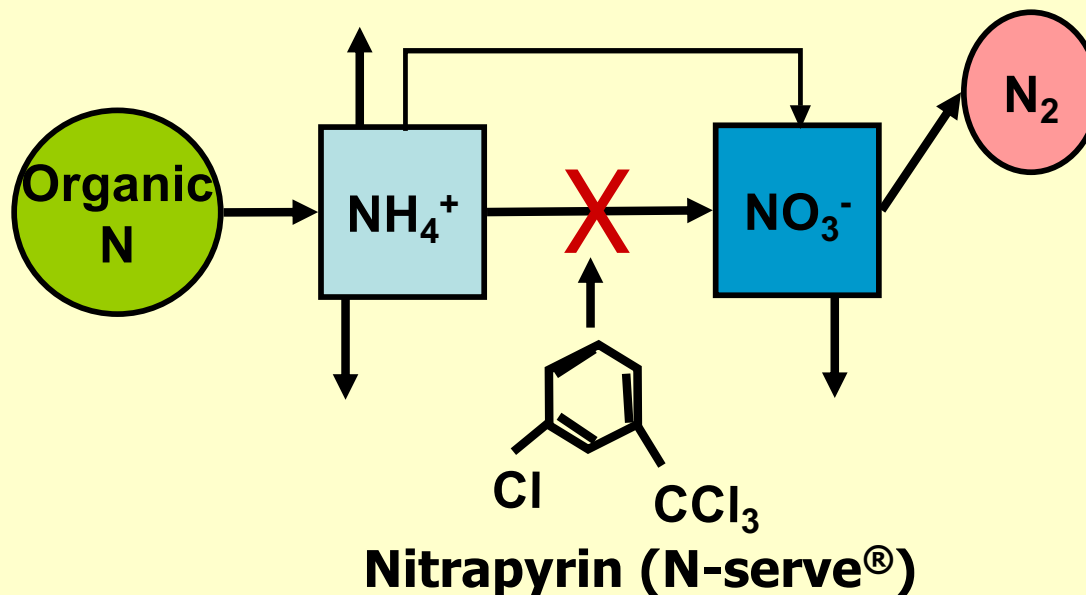
functioning



time

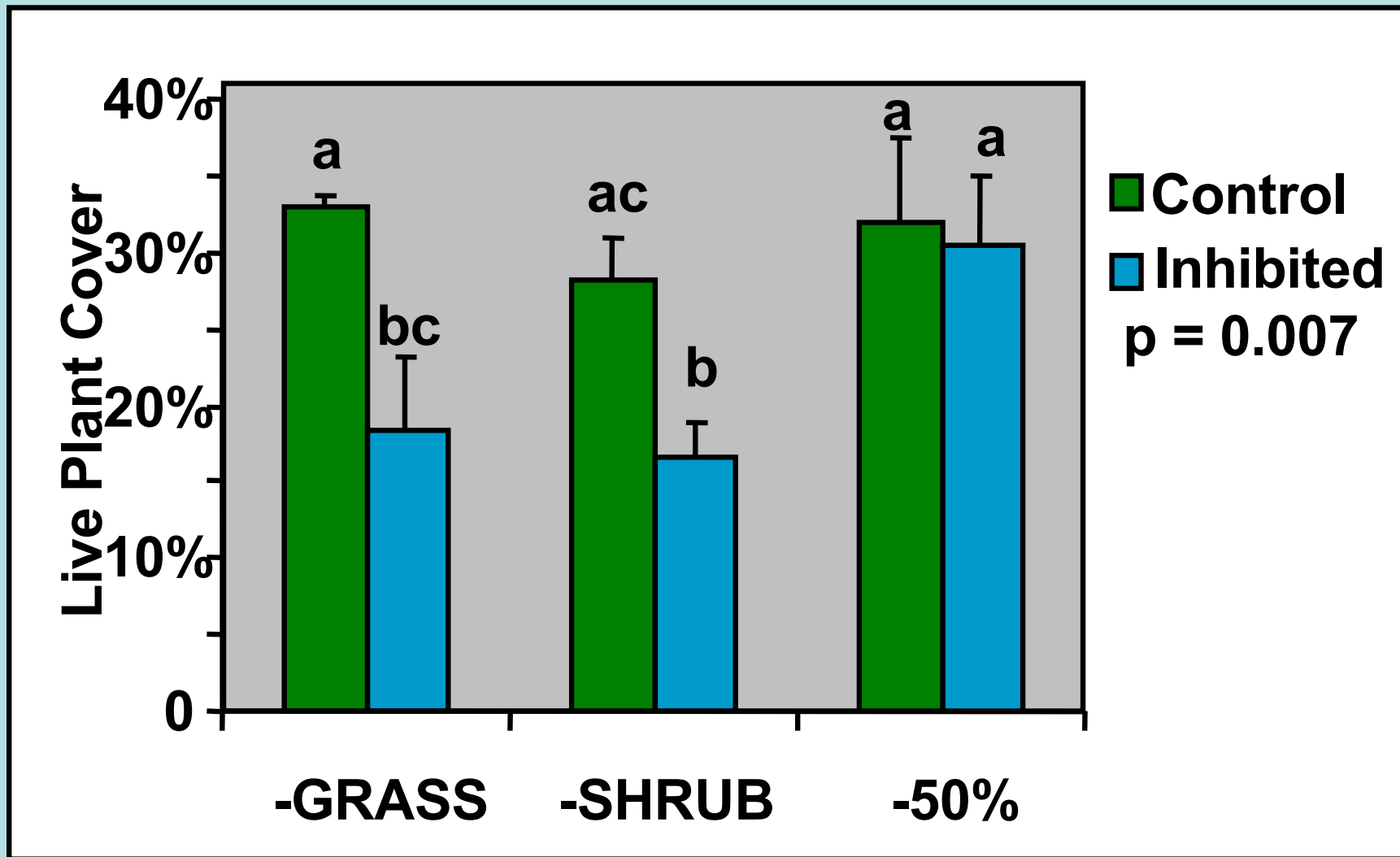
Endogenous disturbance

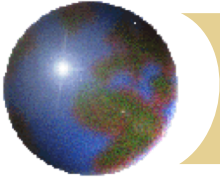
- ✦ Inhibition of nitrification
- ✦ Keystone process of the nitrogen cycle



Nitrosomonas europaea

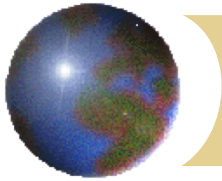
Effects of disturbance on ecosystem functioning





Future Research

- ✚ Relationship between above and belowground biodiversity
- ✚ Regional biodiversity scenarios
- ✚ Modeling biodiversity and ecosystem functioning



Future networking

- ✦ Latin American consortia of libraries
- ✦ Access to large databases and synthesis information
- ✦ Interchange of students from various institutions
- ✦ Closure of the digital divide 