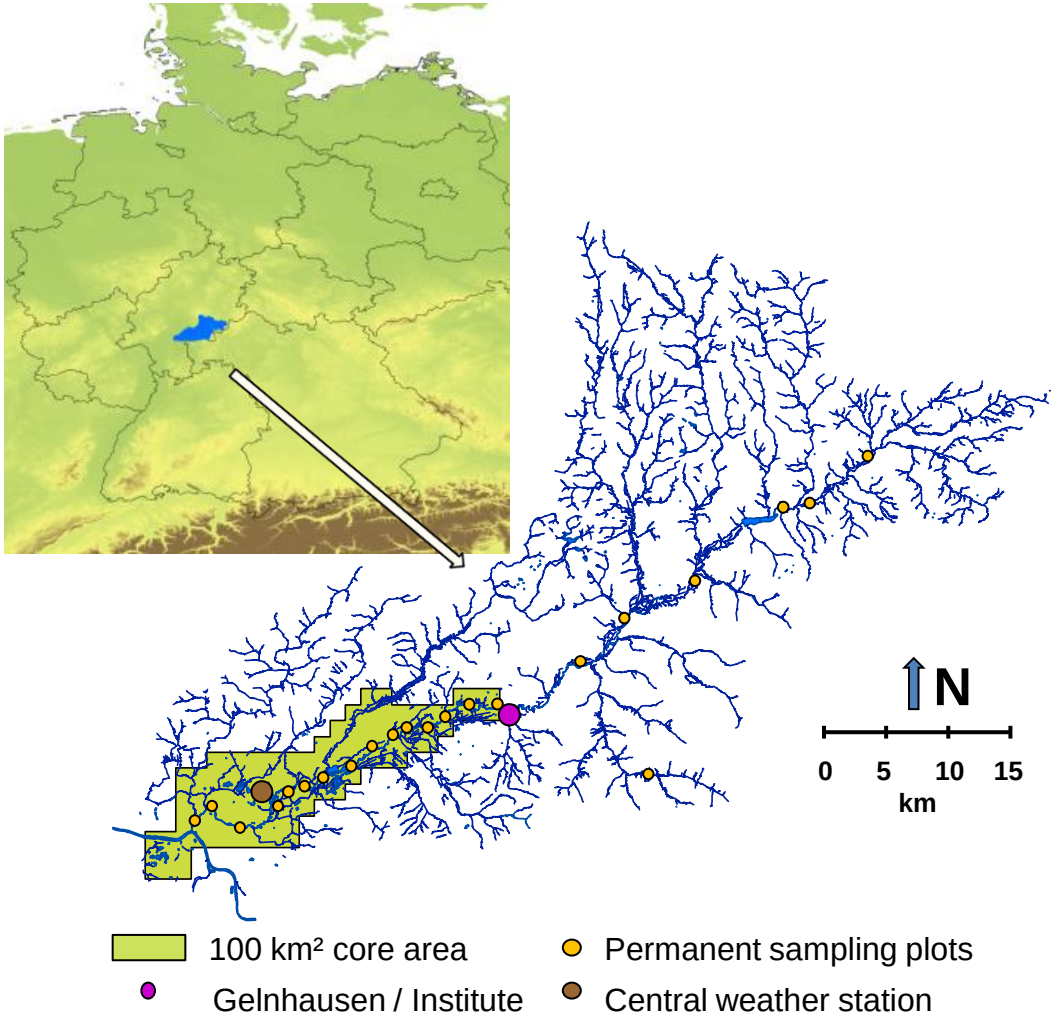
SENCKENBERG
world of biodiversity

Rhine-Main-Observatory

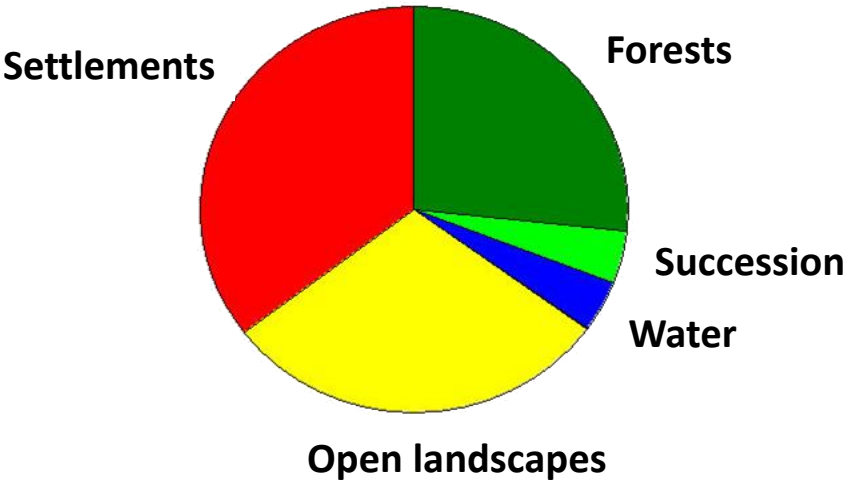
Stefan Stoll

Leibniz Gemeinschaft

Rhine-Main-Observatory



Design of the Rhine-Main-Observatory



Land use:

1. Rivers and their floodplains
2. Settlement areas

These habitat types are underrepresented in current long-term research programs.

Monitoring program

Biotic components (permanent):

- river macroinvertebrates
- vascular plants
- carabid beetles
- spiders

Biotic components (campaigns):

- terrestrial molluscs
- wood louses
- fish
- …

Monitoring program

Biotic components (permanent):

river macroinvertebrates

vascular plants

carabid beetles

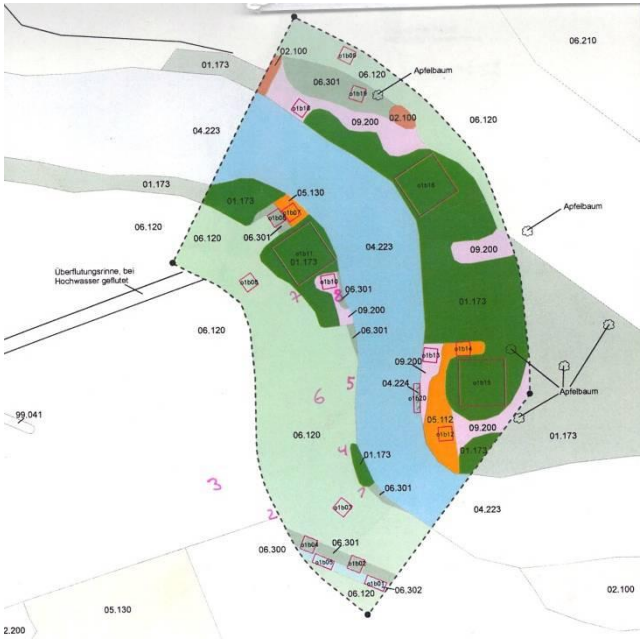
spiders

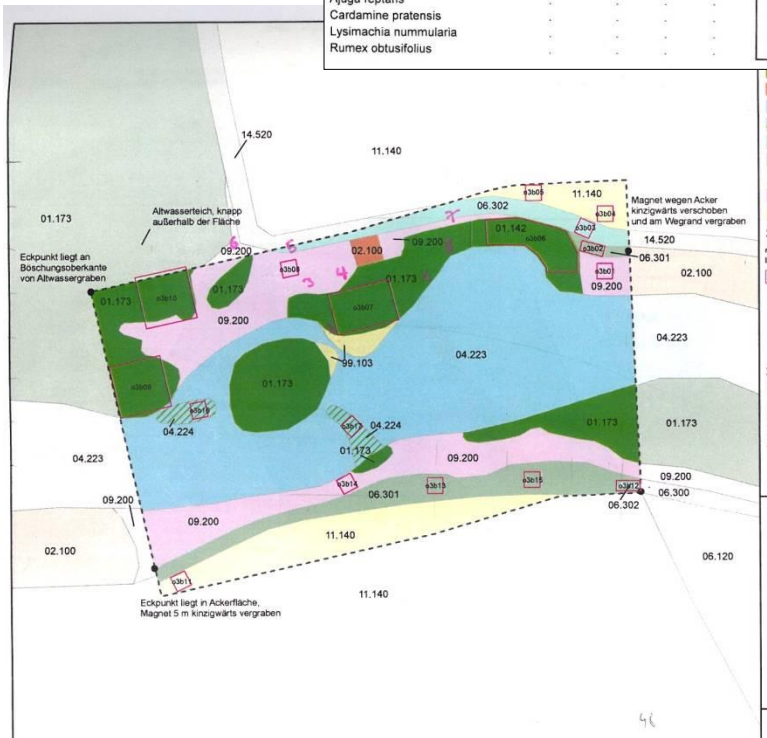
Monitoring program

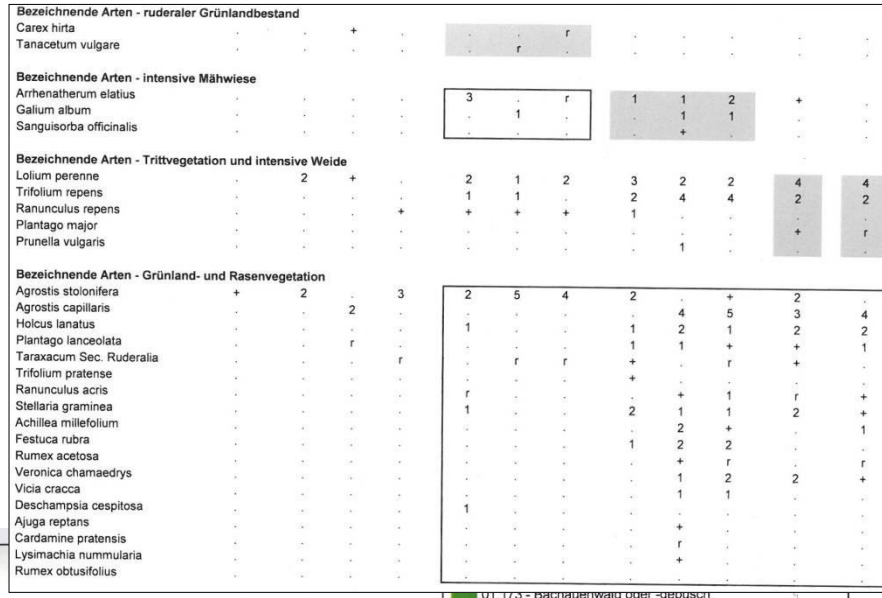
Biotic components (permanent):

river macroinvertebrates

vascular plants





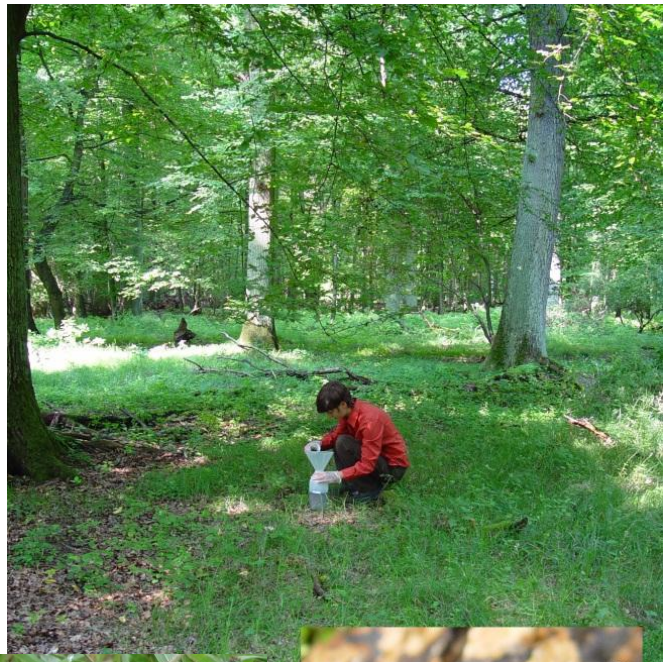


| Bezeichnende Arten - ruderaler Grünlandbestand | | |

Monitoring program

Biotic components (permanent):

river macroinvertebrates
vascular plants
carabid beetles
spiders



Databases

FENA: amphibians, reptiles, fish, butterflies, bats, dragonflies,…

HLUG: river macroinvertebrates,…

=> We constantly try to enlarge taxonomic range, update datasets

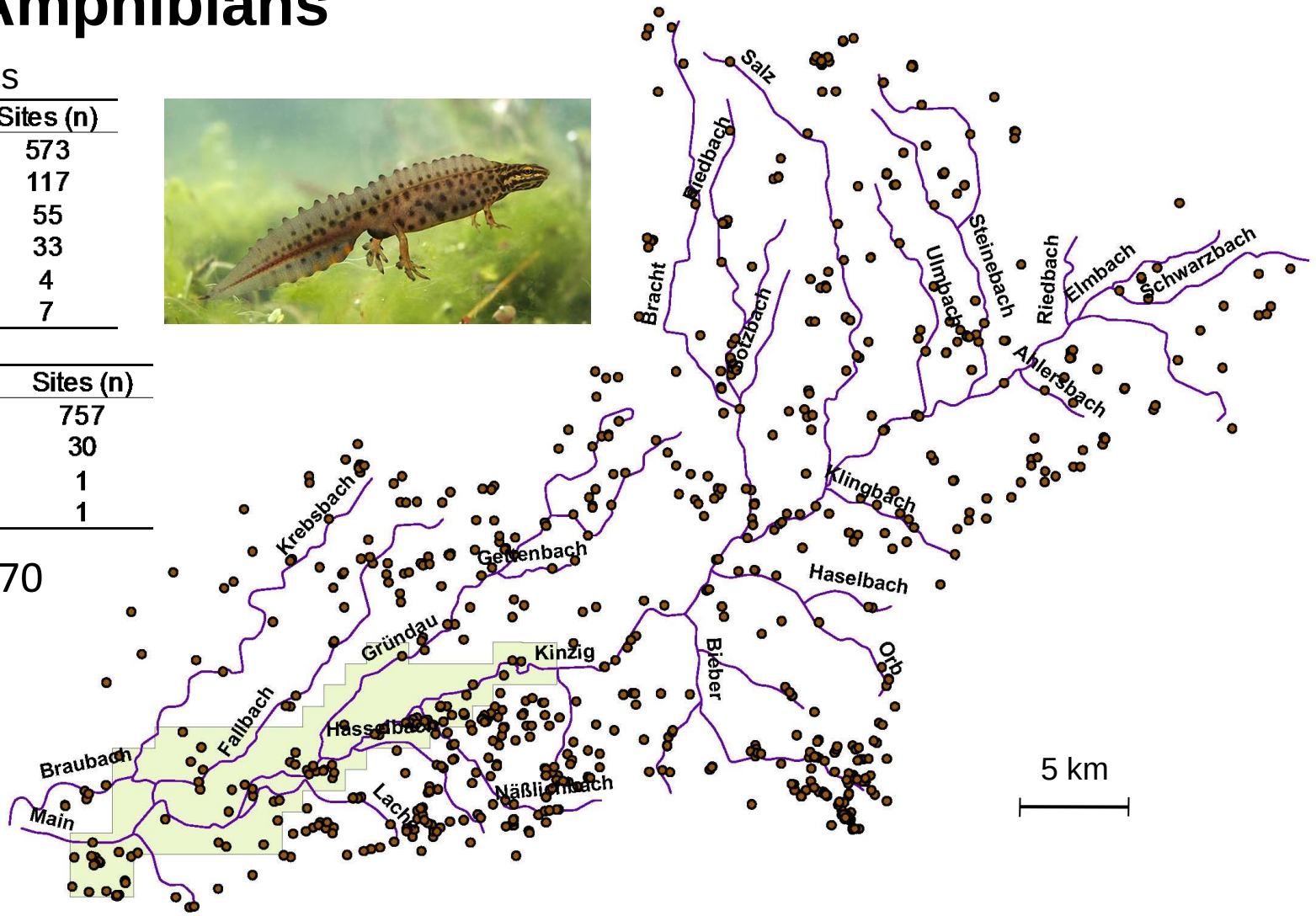
Amphibians

789 records

Years (n)	Sites (n)
1	573
2	117
3	55
4	33
5	4
10	7

Decades (n)	Sites (n)
1	757
2	30
3	1
4	1

since 1970



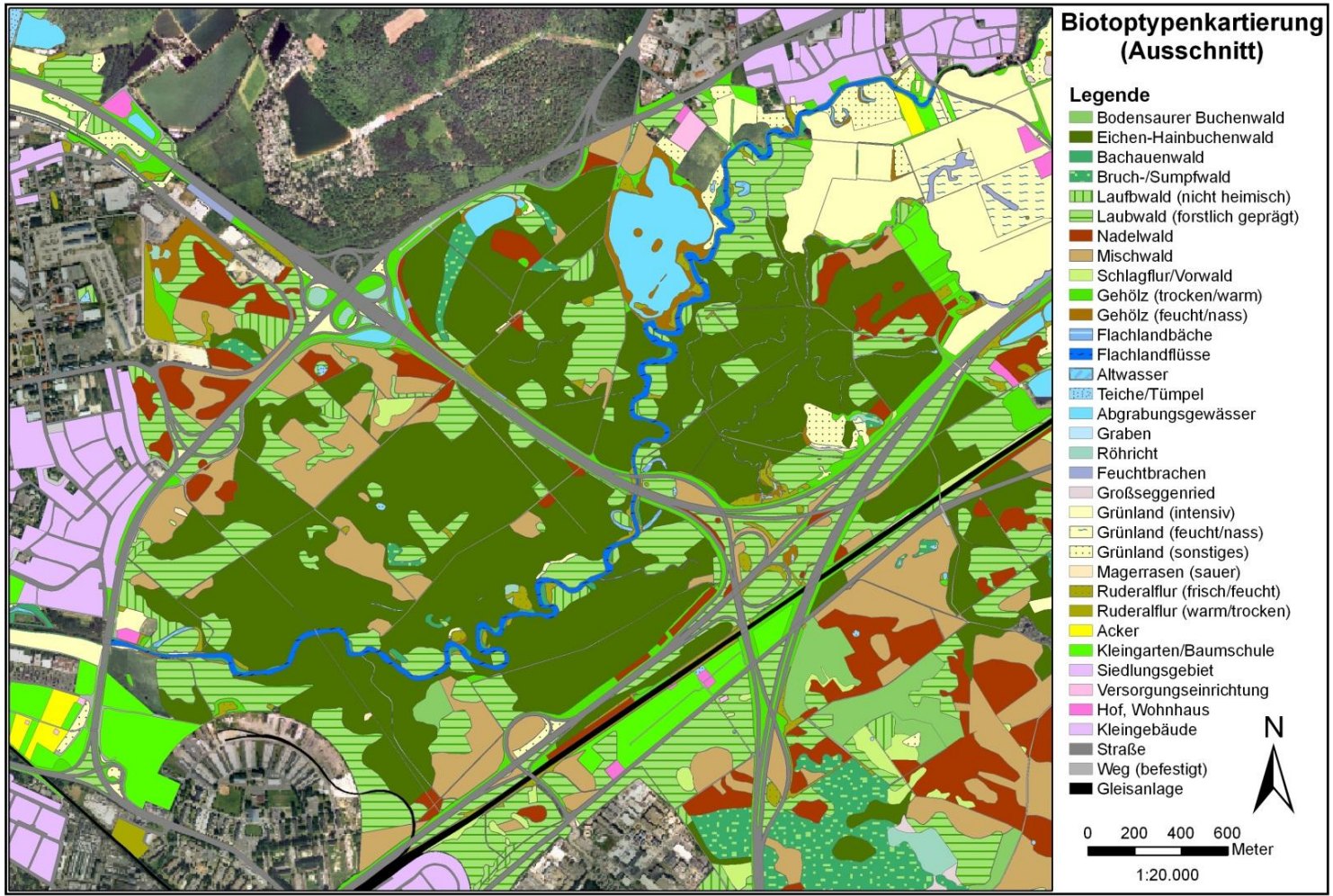
Monitoring program

Abiotic components (permanent):

- Land use
- Meteorological data
- Hydrological data
- Physico-chemical data

Monitoring program

Land use

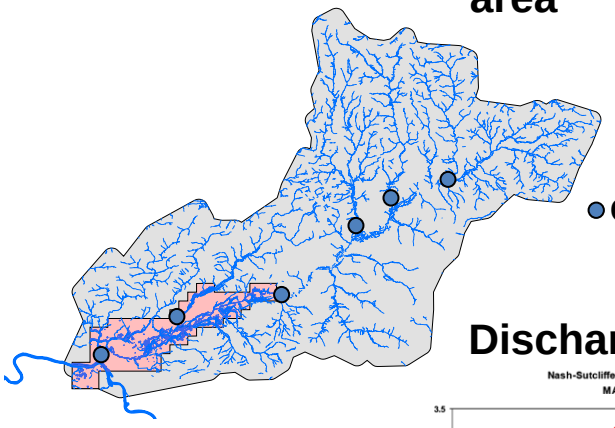


Monitoring program

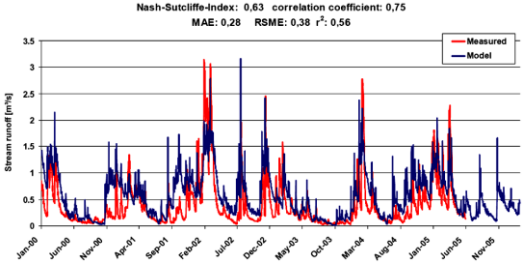
Abiotic components:

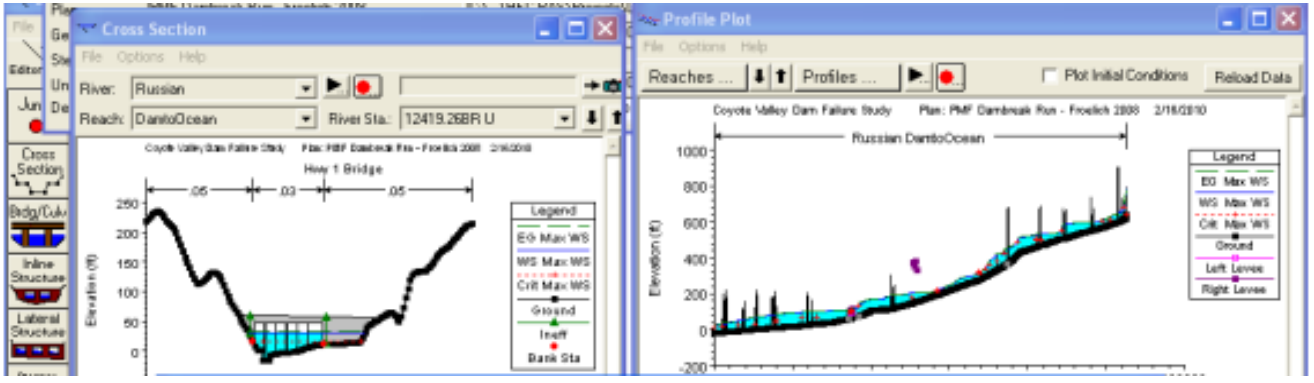
- Land use
- Meteorological data
- **Hydrological data**
- **Physico-chemical data**

Processes in catchment area



Discharge & Sediment





Processes in river (1D, 2D)

Water depth, Current velocity, Substrate distribution, Temperature

Monitoring data

Data:
Data has been stored centrally on server as access-database, excel, txt-files,…

mySQL-database for monitoring data has been programmed, is currently filled with monitoring data

Data collected in the context of the LTER project „EnvEurope“ is available online via the EnvEurope database

Metadata:
Site metadata and metadata on datasets is available via DEIMS

LTER Germany is currently preparing a „monitoring of monitoring database“ MoMo => overview of long-term monitoring data in public administration

LTER - Germany

Incorporated society, currently 29 member institutions: 6 Helmholtz-Centres, 11 Universities, 6 Leibniz-Institutes, Federal and State Research Institutes, 5 National Parks, 1 Nature protection society.

EnvEurope

- **Aim**: Development of a common strategy for cross-ecosystem comparison of monitoring data based on the LTER-Europe network.
- **17 partner institutionen in 11 countries:** Austria, Bulgaria, Finland, Germany, Hungary, Italy, Lithuania, Poland, Romania, Spain, Sweden
- **Duration:** 01/01/2010 - 31/12/2013
- **External partners of Senckenberg:** FZ Jülich, ZALF, Uni Rostock, Uni Kiel

Major products of EnvEurope

ECOPAR => interactive web tool (database/wiki) to identify / comment / discuss best parameters and monitoring techniques in environmental long-term monitoring.
Monitoring goals: assess ecosystem integrity and ecosystem services

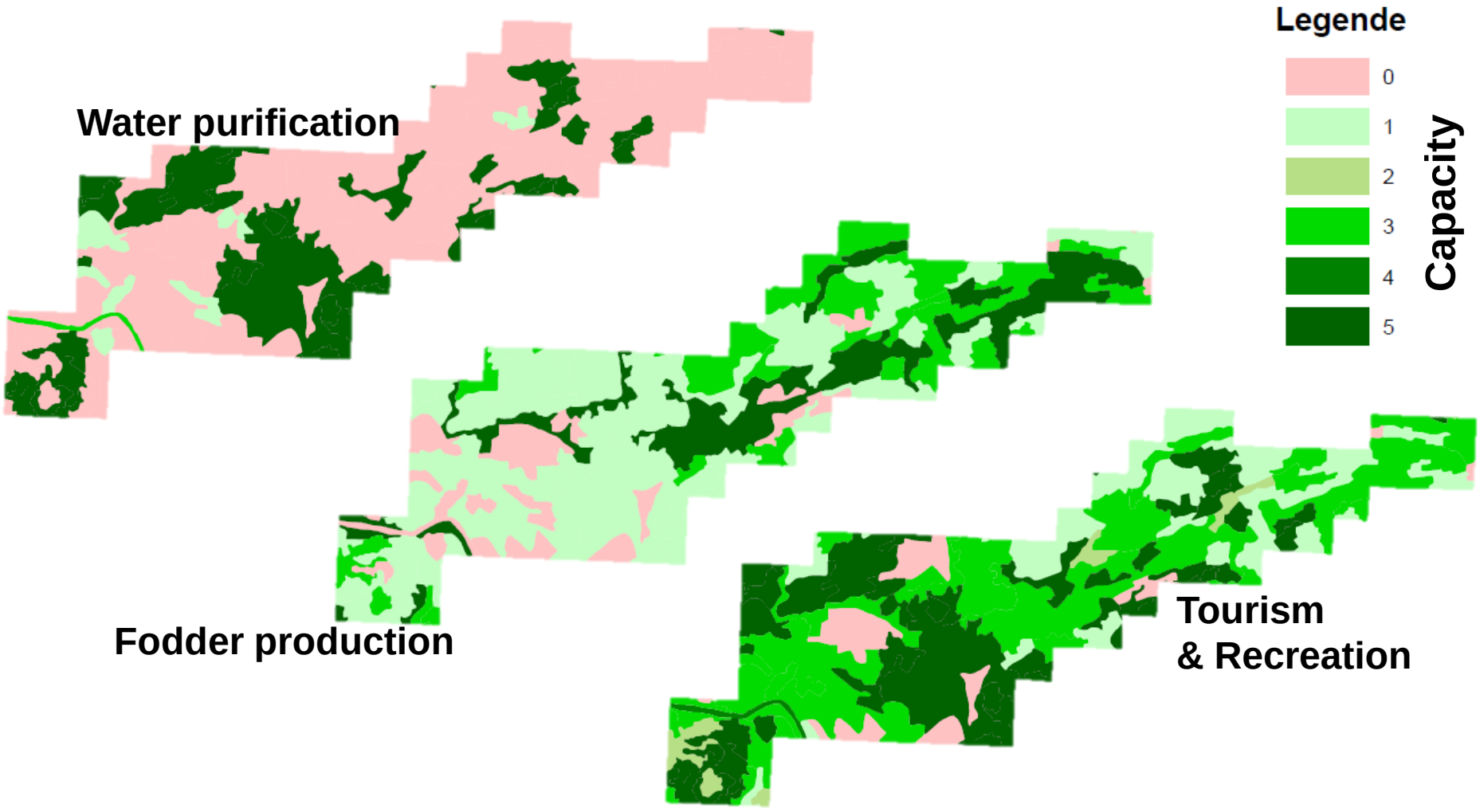
DEIMS => (I)LTER metadata- and database. Find information about long-term monitoring & long-term monitoring data in the LTER community.

More details: Johannes

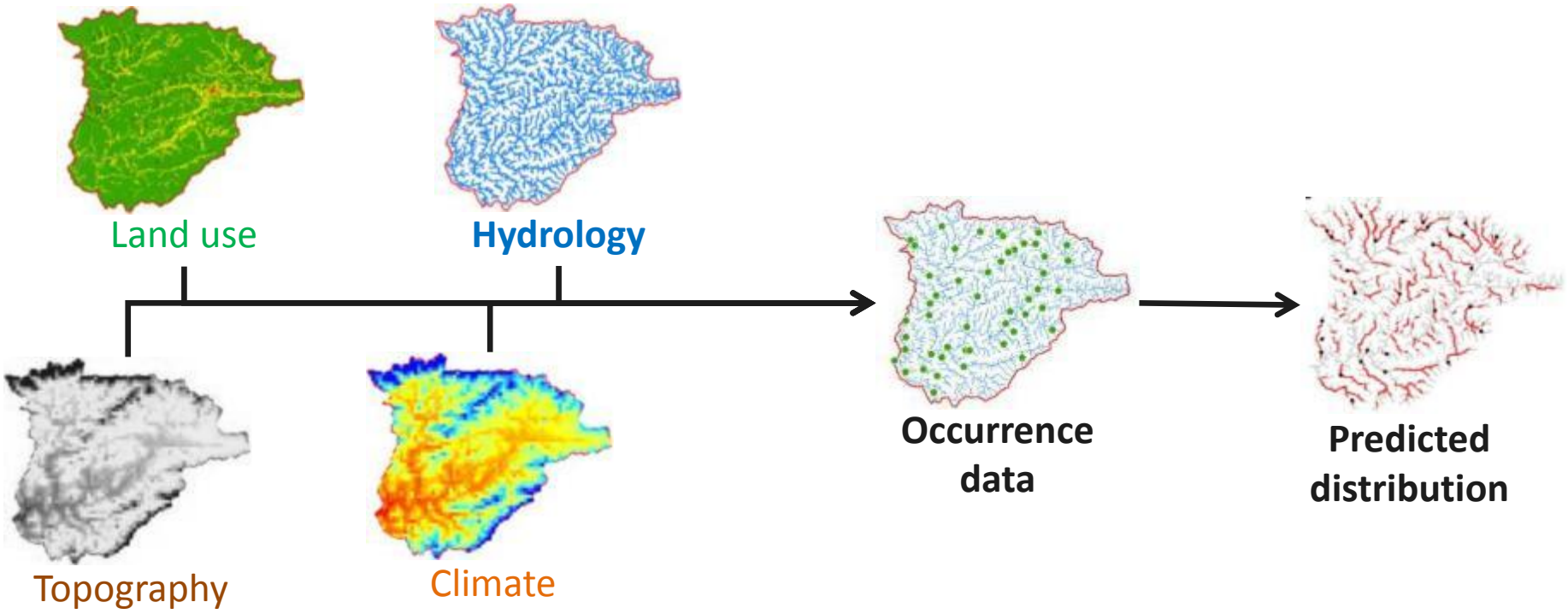
EnvThes => Thesaurus for environmental data. Common language enables easy keywording and search for data.

More details: Johannes

Areal assessment and comparison of ecosystem services

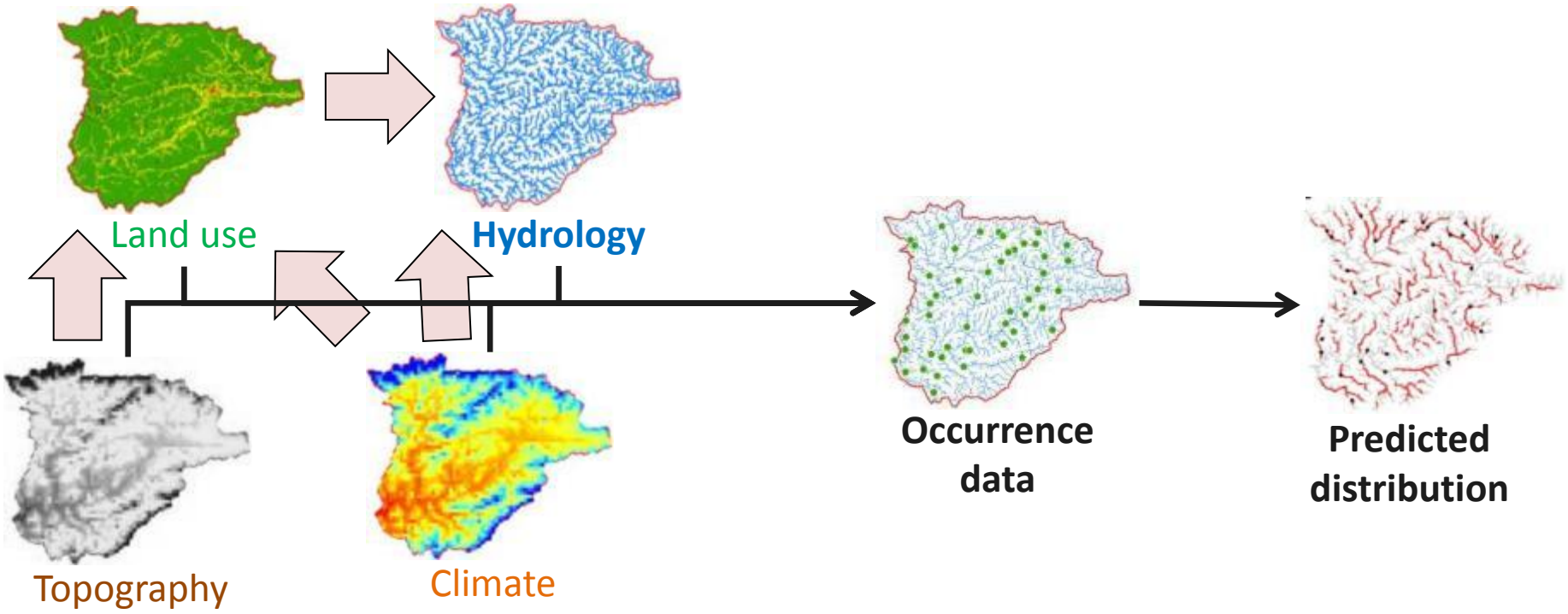


EU BON WP4 Species distribution modeling



Kuemmerlen et. al 2012, HyWa, 56, 185–192.

EU BON WP4 Species distribution modeling



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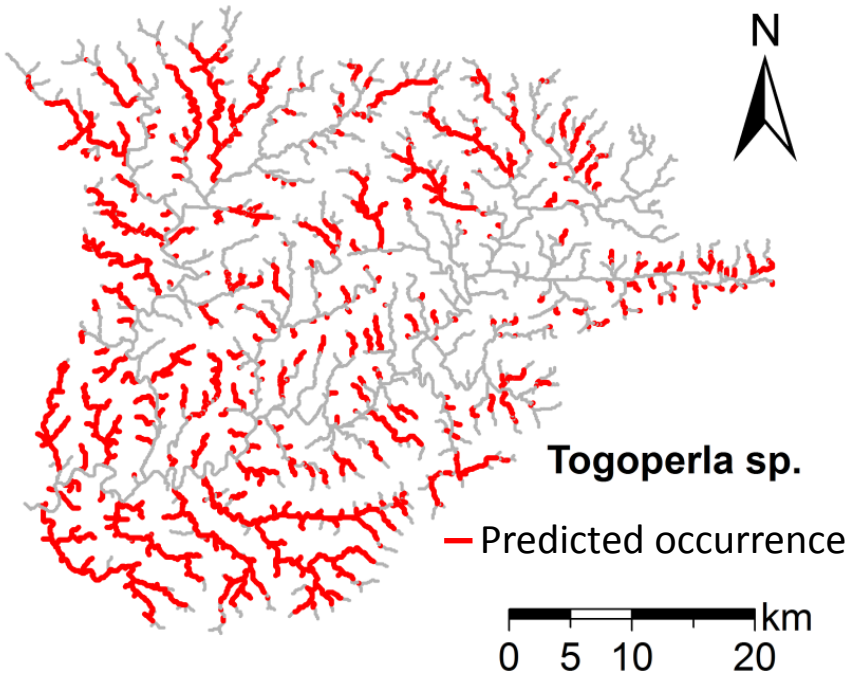
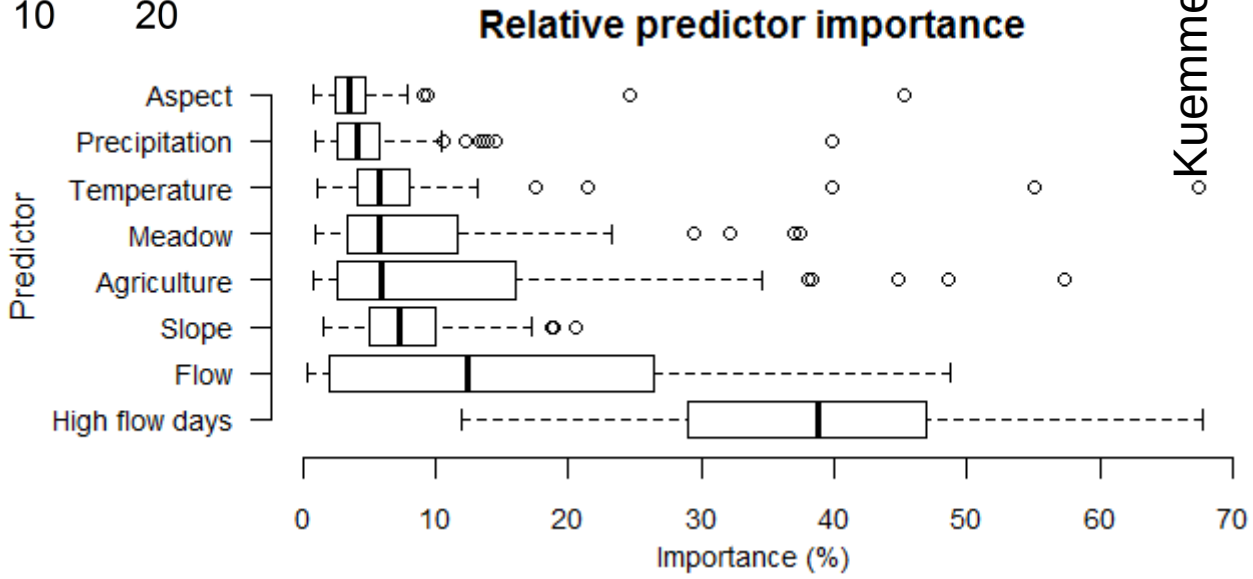
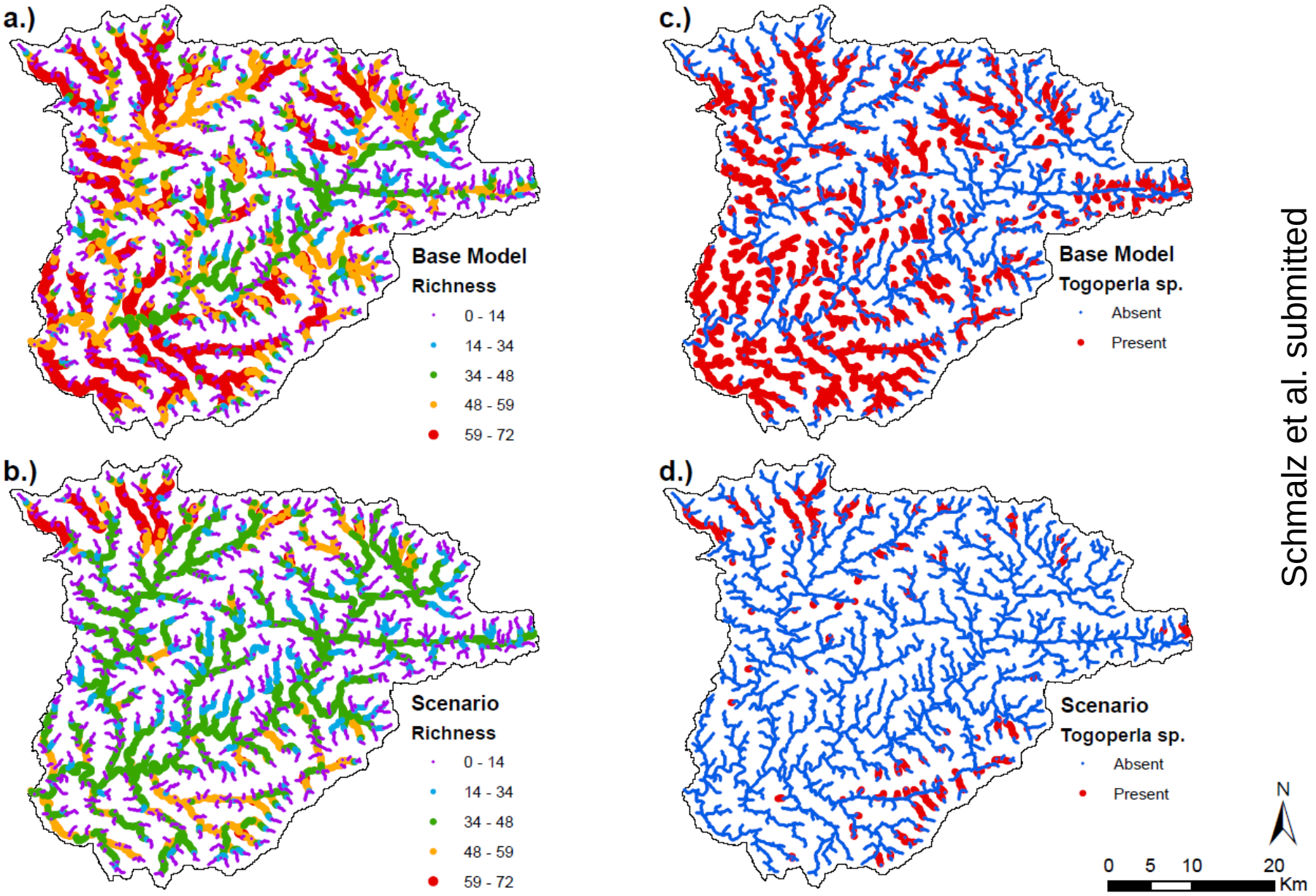
Changjiang SDM setup





Kuemmerlen et al. submitted



Schmalz et al. submitted

EU BON WP5

Task 5.1 In situ testing of EU BON information services through researchers and stakeholders

-contribute experience from previous data integration initiatives

Task 5.2 Testing EU BON tools for data analysis and interpretation

-lead by SGN

-co-operation with WP3 and 4

-application of Kinzig models: up-/downscaling; enhanced distribution models; building scenarios, risk assessment

Task 5.3 Testing EU BON services for management, decision makers and stakeholders: applications across different scales

-provide scenario outputs from Kinzig model (e.g. endangered/alien species)

Task 5.4 Networking and expanding EU BON sites and acquiring additional support

-proposal in ERAfrica call

-contact to LTER-Europe

Thank you for your attention!

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