

Grassland conservation by grazing?

Experiences in managing grassland for biodiversity
in the Biosphere Reserve 'Rhön', Germany

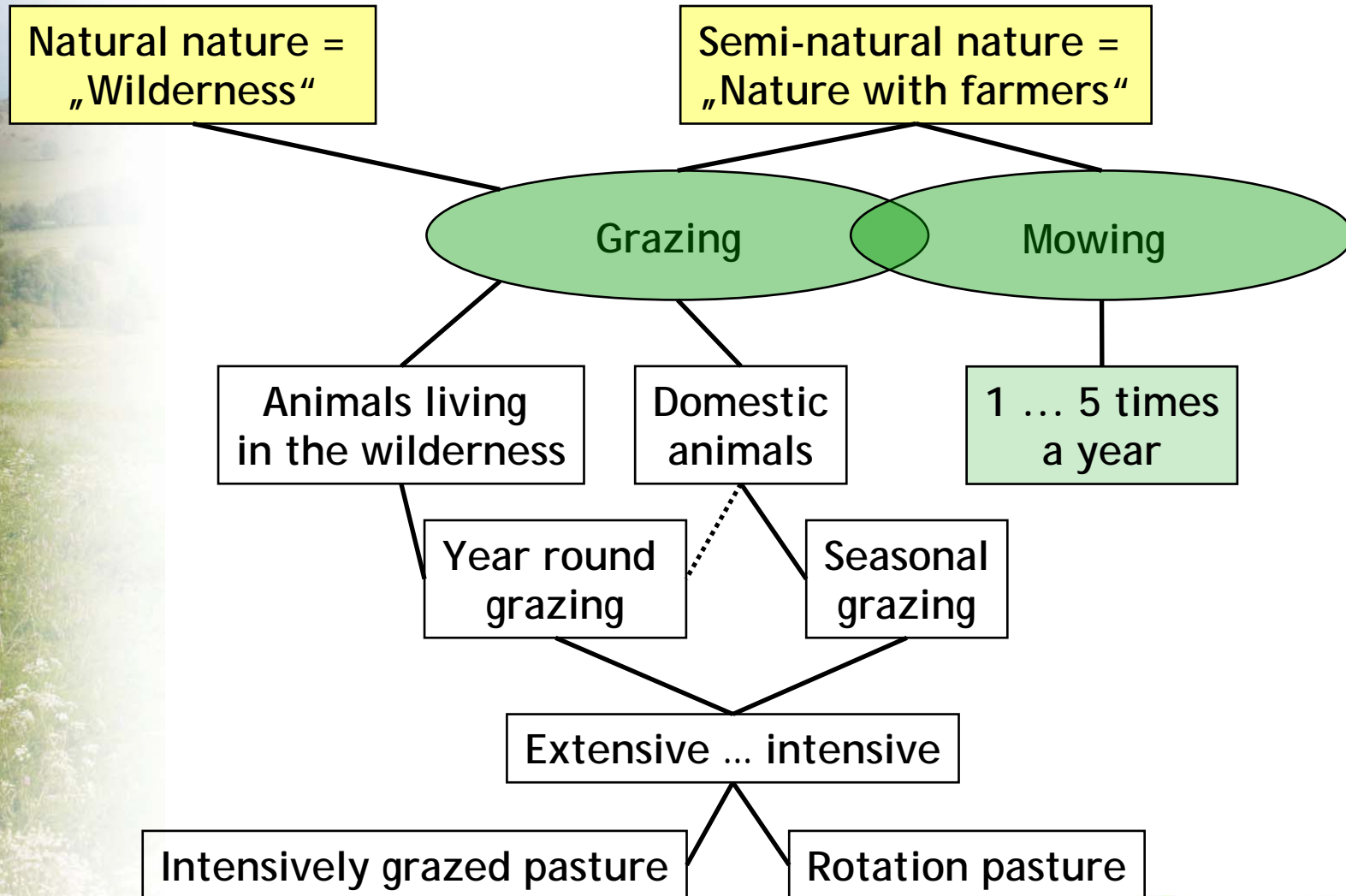


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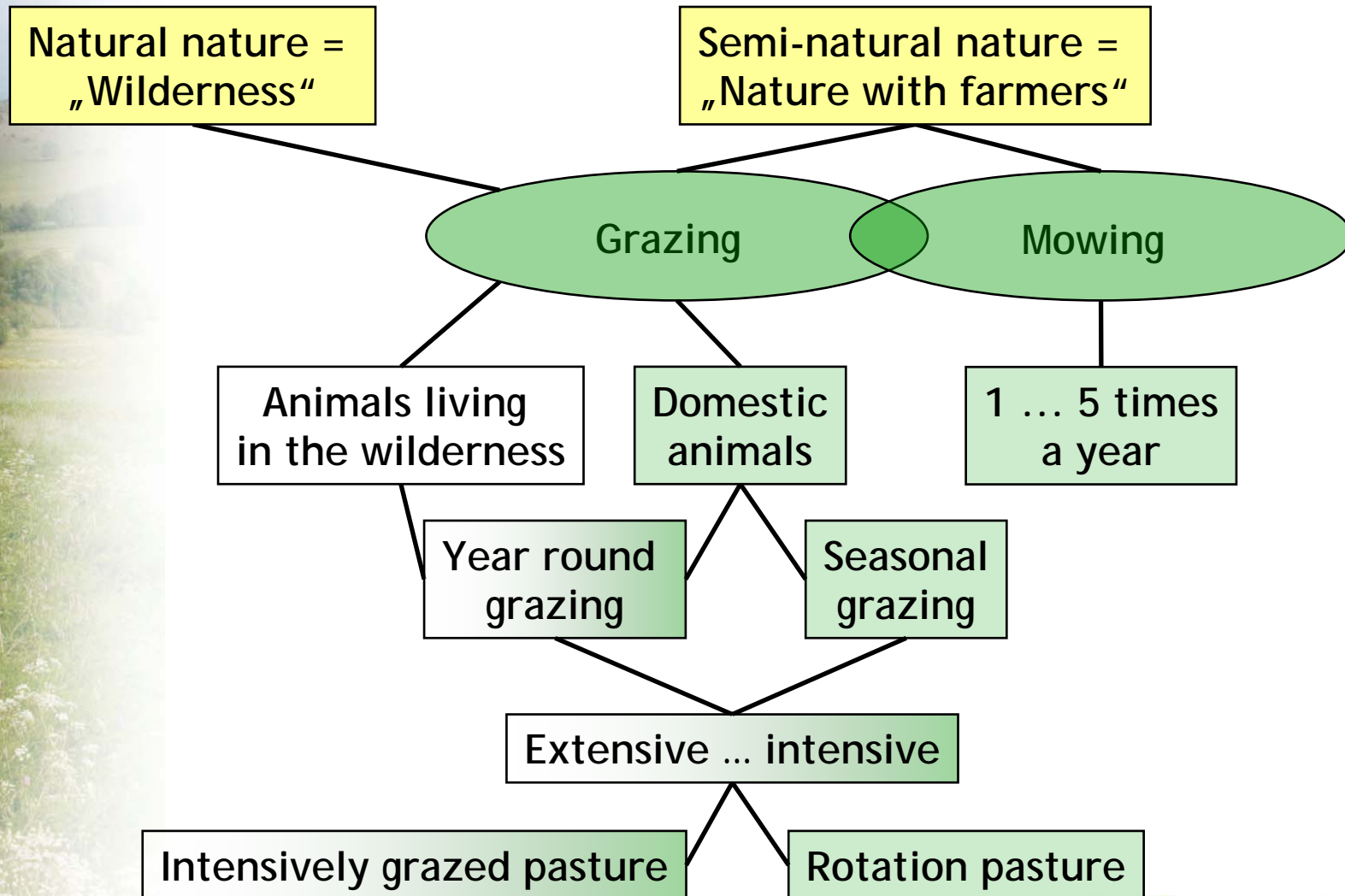
1. Grassland biotopes:

Natural or manmade - managing methods



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Natural nature =
„Wilderness“



1. Grassland biotopes:

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Semi-natural nature =
„Nature with farmers“

Grazing

Mowing



1. Grassland biotopes:

Managing intensity of grassland

Naturalness

Degree of anthropogenous control

Wilderness

Semi-open
pasture landscape

Habitat
management

Intensive
pasture

- **Starting point for nature conservation:**
 - Mowing needs not be better than grazing
 - All grazing is not the same
 - Actual grassland farming causes decline in species diversity
 - Maximum biodiversity on marginal sites - but not profitable for farming
- Concepts both for intensive and marginal sites, combining species diversity and economic needs of agriculture

2. The concept of semi-open pasture landscapes:

New strategies for nature conservation

- Aims of nature conservation for **large areas** by defining the modality of grazing (low-intensity pastoral systems)
 - Difference to habitat protection: choosing the best way of utilization to protect target species on a single field (e.g. ground breeders)
- Guideline: **a mosaic of grassland und woodland habitats**, kept open by grazing cattle with different intensity
 - No fertilization, year-round grazing by different grazing animals
 - → many ecotones, maximum biodiversity
- Adaption of **traditional pastoral systems** (common grazing forests) to changing socio-economic conditions

3. The low intensity grazing project in the 'Rhön': Impressions of the Biosphere Reserve



3. The low intensity grazing project in the 'Rhön':

Project aims

- **problem:**

large scale stop of grassland cultivation

- **project aims:**

- ✓ testing of different forms of low-intensity farming on a large scale
- ✓ analysis of socio-economic and nature conservation factors → obtaining basic data for the future
- ✓ win-win strategy will become reality, added value for agriculture and nature conservation

3. The low intensity grazing project in the 'Rhön':

Conditions of grazing



- ... predominant with cattle (seasonal and year-round grazing)
- ... partial with sheep, goats, horses, donkeys
- ... multi-species pasturing
- ... 0.3 - 0.6 (0.8) live stock units per hectare



3. The low intensity grazing project in the 'Rhön':

Project status

- Funding: promotion by the „Deutsche Bundesstiftung Umwelt“ for 4 years
- Up to now 20 pastures with 558 hectares (10 to 101 hectares per unit)
- aim: approx. 1.000 hectares
- individual farmers and grazing societies



4. Grazing or mowing?

Hypotheses

- Low-intensity pastoral systems can keep alive biodiversity of grassland ecosystems
 - Species stock of meadow will be preserve on a landscape level
 - Biodiversity will increase because of typical pasture species
 - Space-structural diversity is higher than in hayfields
- Springs, runnig waters and rocks can be involved into grazing



4. Grazing or mowing?

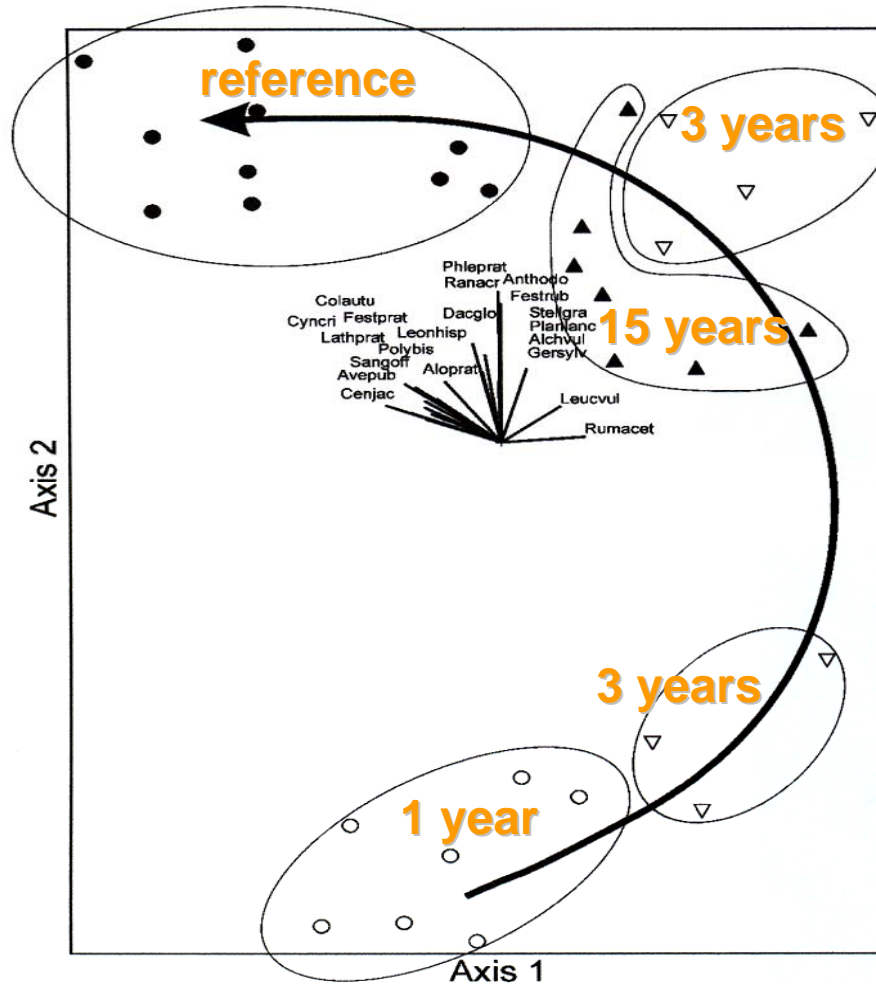
EU habitat directive

- Types of mowing grassland especially
 - 6510 Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*)
 - 6520 Mountain hay meadows (*Geranium sylvaticum*)



4. Grazing or mowing?

EU habitat directive



Grazing by horses on fallow fields - is it possible to regenerate vegetation of FFH mowing grassland by grazing?

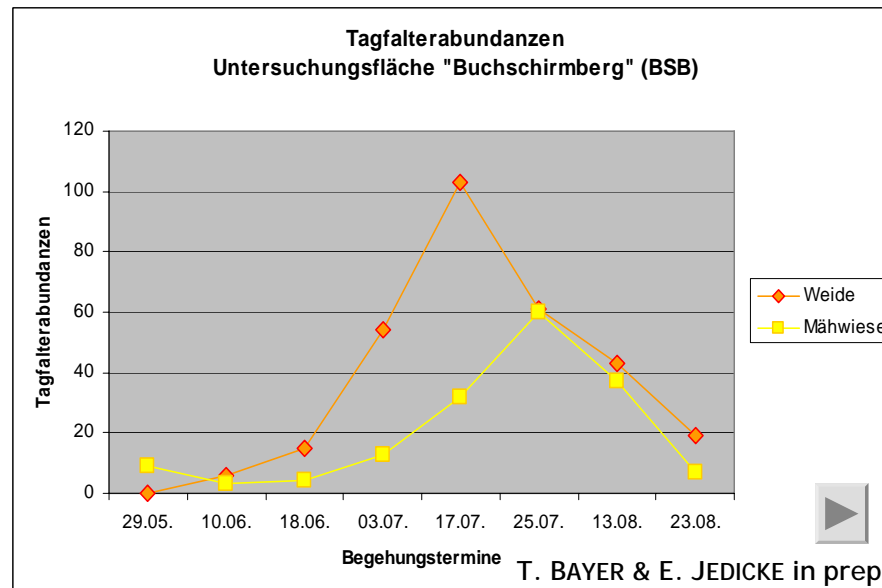
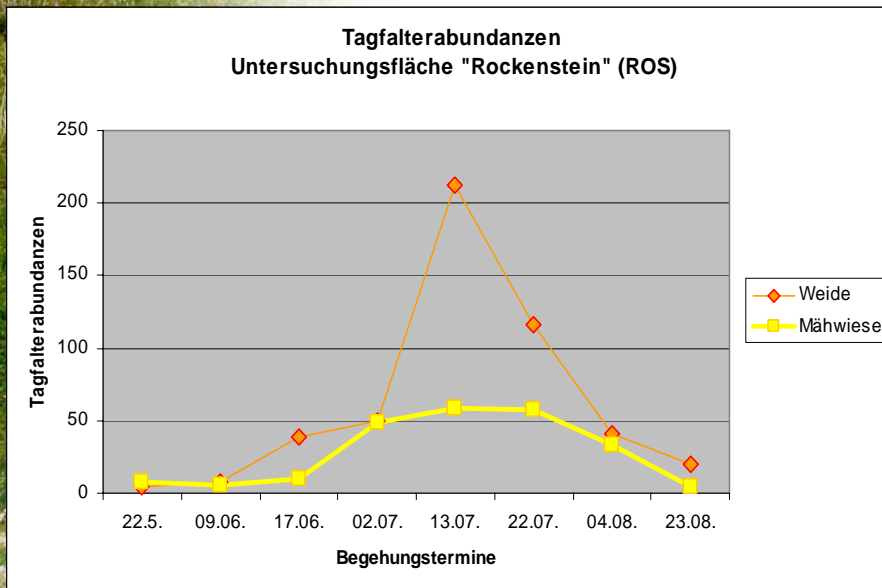
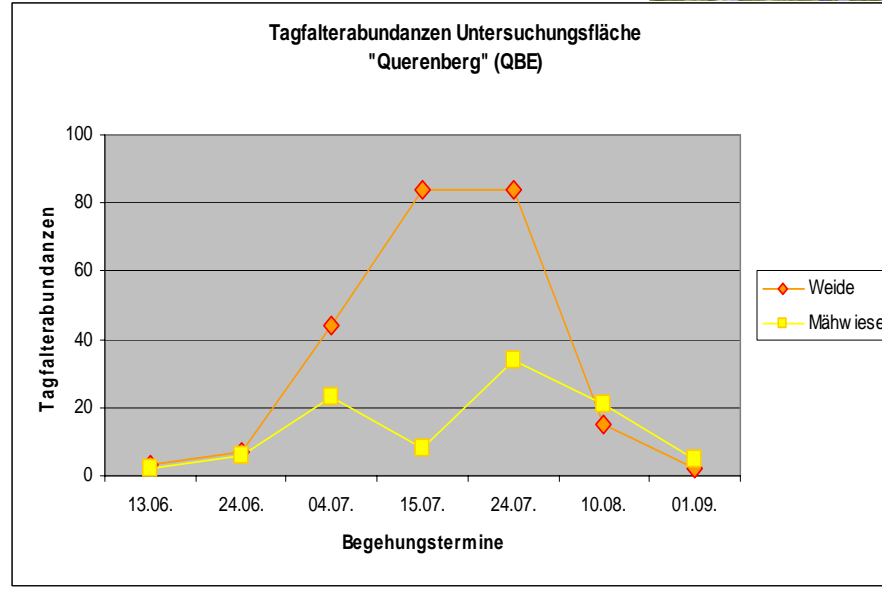
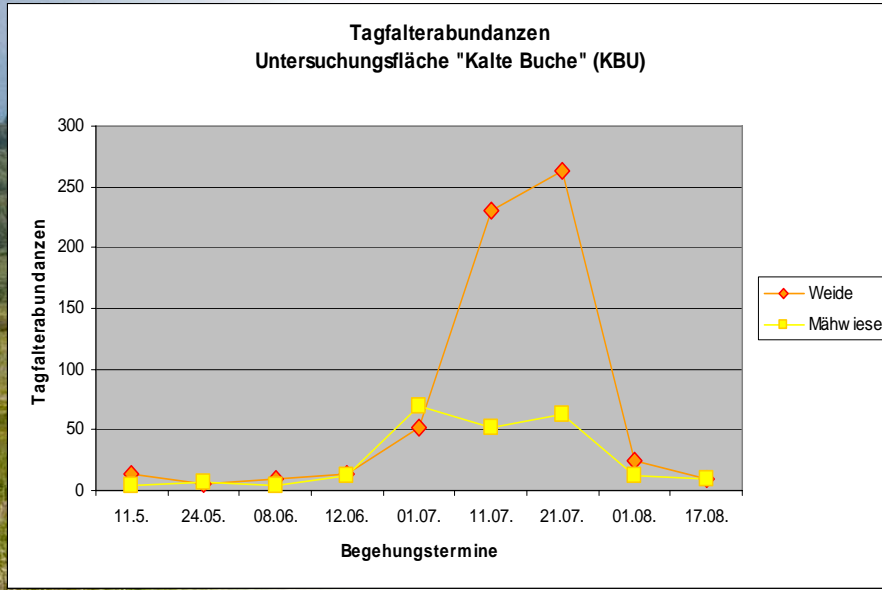
An experiment in the Rhön project

Biplot of ordination results by Nonmetric Multidimensional Scaling (NEUGEBAUER et al. 2006)

4. Grazing or mowing? Butterflies

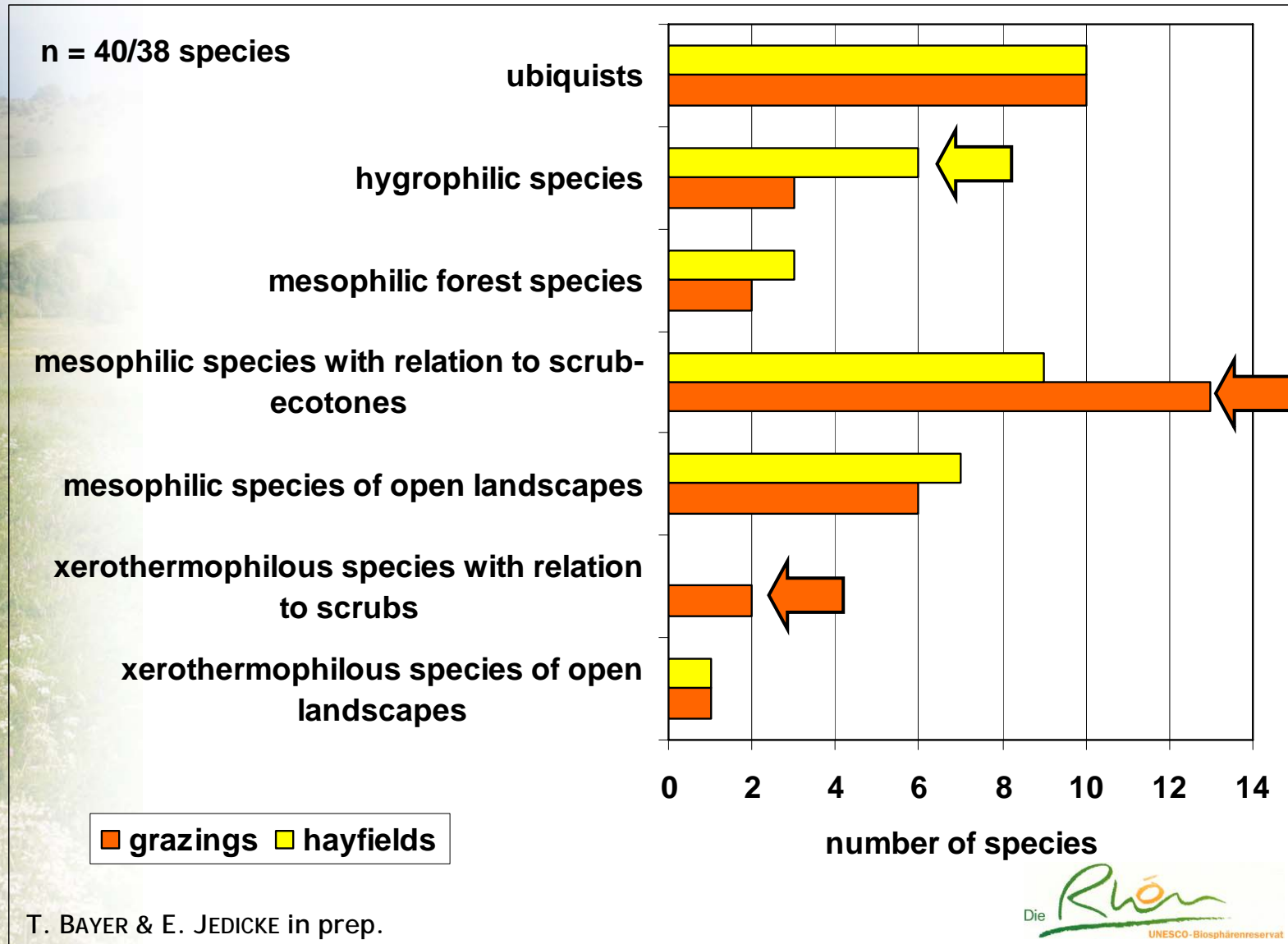


Abundances at grazings and hayfields



4. Grazing or mowing?

Butterflies: guilds in grazings and meadows



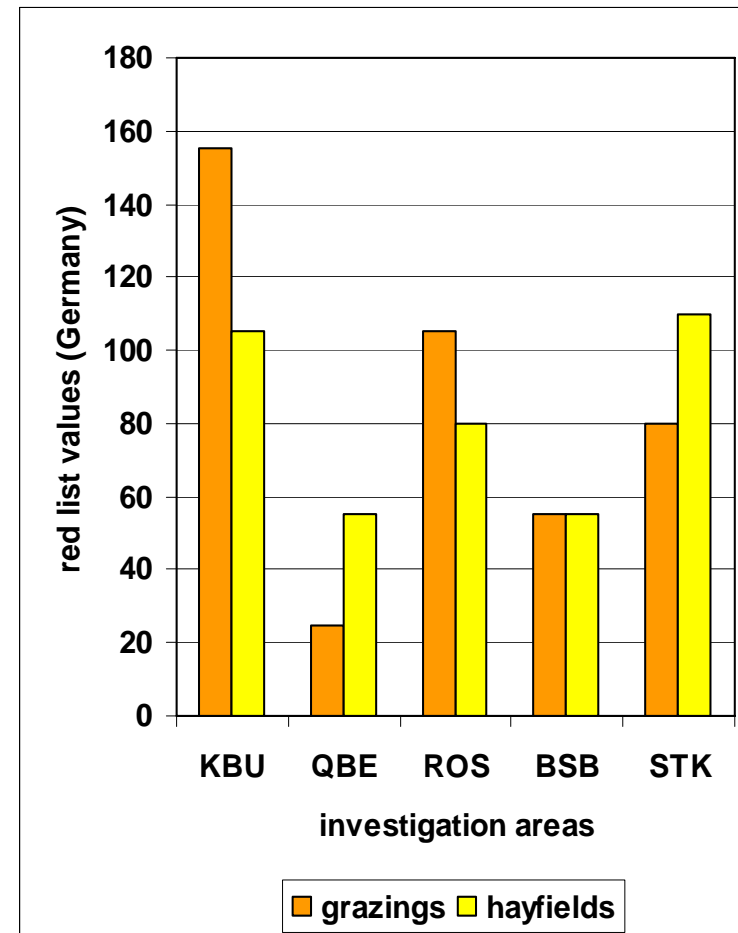
4. Grazing or mowing?

Butterflies: grazings and meadows



- Similarity of fauna:
 - only flower visitors:
 - both in grazings and hayfields: 17
 - exclusive in grazings: 15
 - exclusive in hayfields: 4
 - only reproductive species:
 - both in grazings and hayfields: 29
 - exclusive in grazings: 9
 - exclusive in hayfields: 4

- Red list species:



5. Consequences

Grazing or mowing?

1. Grazing and mowing - both belongs together!

- Year-round grazing needs also hay in winter!

2. Concept of semi-open pasture landscapes enables benefits for ecology and economy

3. Common Agricultural Policy of EU decides about the economic balance

4. nature conservation needs more answers by biology and landscape ecology → monitoring and research

5. Building a network of nordic-baltic and European projects is the correct answer!

