Task 1

Introduction to structural equation modeling and mixed models in 

Day 10: SEM

Oksana Buzhdygan

oksana.buzh@fu-berlin.de

Task 1

Jena Biodiversity Experiment

Day 10 Task 1

Jena Biodiversity Experiment

www.THE-JENA-EXPERIMENT.de

- Established in 2002
- 82 plots of 20 x 20 m
- Experimentally manipulated plant species richness: 1, 2, 4, 8, 16, 60 species

Photo credit: *A. Weigelt*.

```
read.csv("Data/Jena.csv")
> str(jena)
'data.frame': 82 obs. of  7 variables:
 $ plant_sr      : int  1 1 1 1 1 1 1 1 1 1 ...
 $ legumes       : chr  "absent" "absent" "absent" "absent" ...
 $ plant_biom    : num  50.1 139.4 55.1 76.4 180.6 ...
 $ C_stor        : num  0.925 6.405 1.134 6.048 2.452 ...
 $ decomposition: num  0.101 0.569 0.12 0.581 0.179 ...
 $ pollination   : num  0.146 0.438 0.124 0.381 0.114 ...
 $ predation     : num  0.0254 0.4806 0.1141 0.3783 0.0616 ...
```

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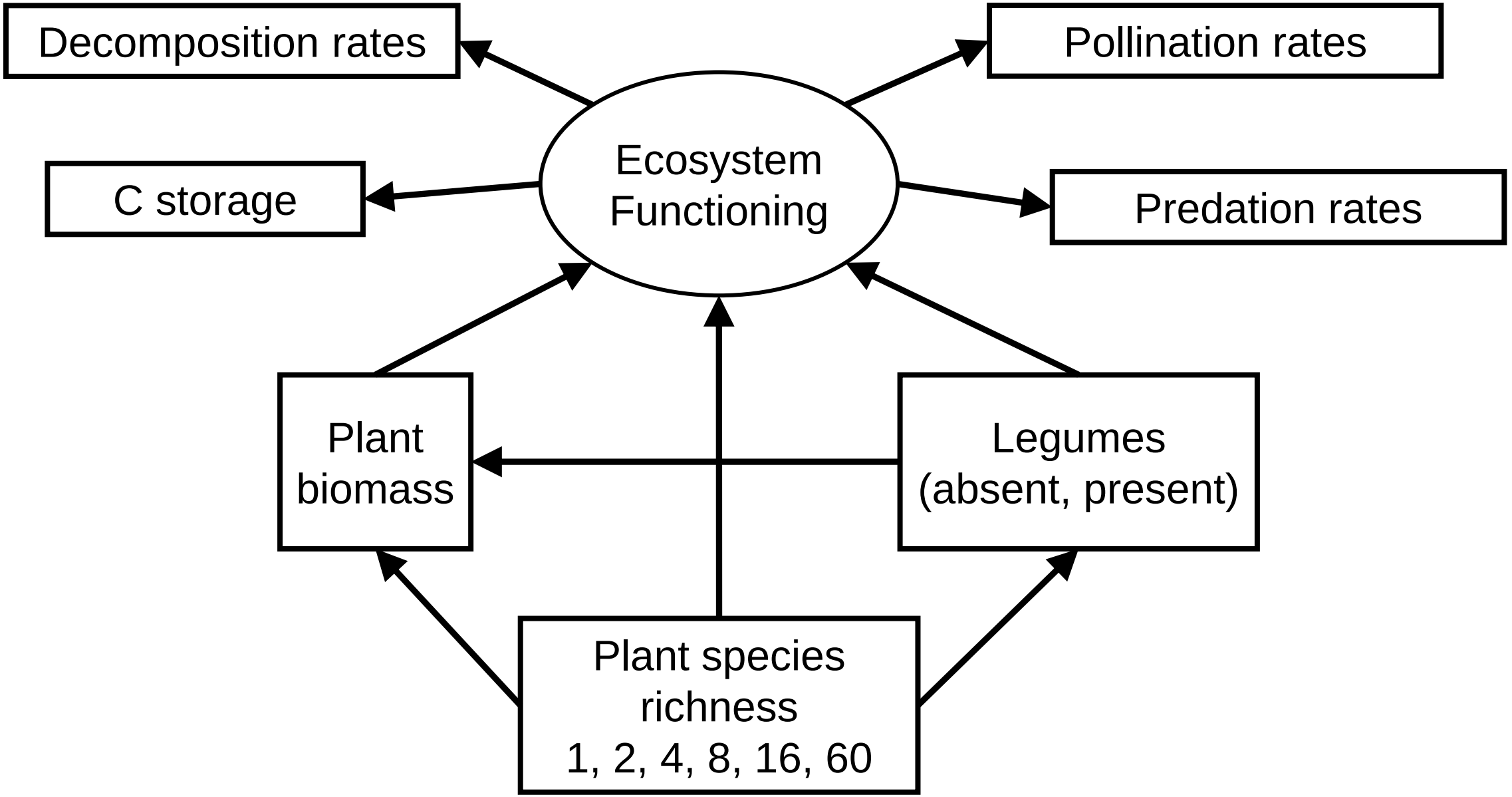
Jena Biodiversity Experiment



Day 10 Task 1

Effects of land use on food webs in grasslands

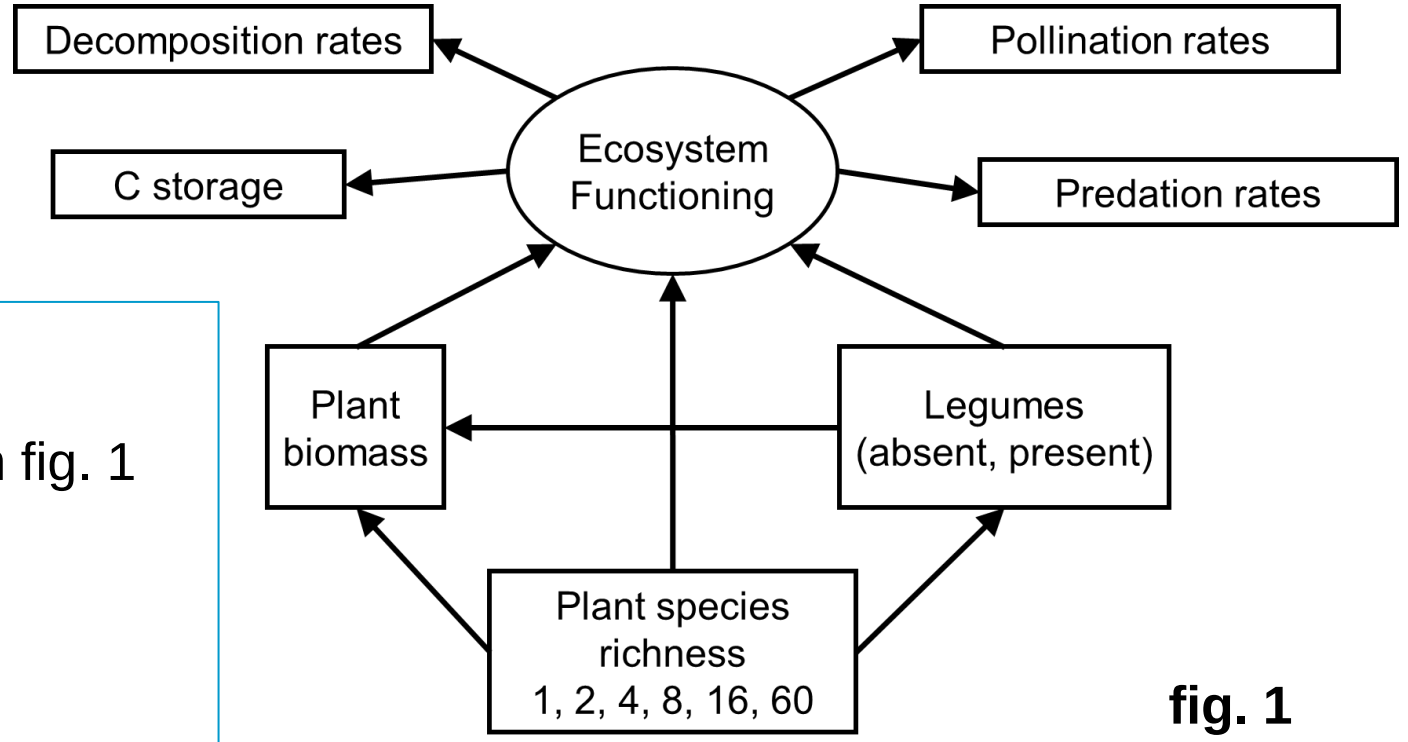


fig. 1

Tasks:

1. Build and assess the SEM model shown on fig. 1

2. Test the model fit

3. Fill in the standardized coefficients

4. Fill in the explained variances for each endogenous variable in the model.

5. Calculate direct, indirect, and total effects of "Plant species richness" on "Ecosystem Functioning"