STATISTICAL ECOTOXICOLOGY

TITLE2

by

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1.2 ECOLOGICAL RISK ASSESSMENT (ERA)

Ecological Risk Assessment is based on two main components: Effects and Exposure Assessment, which are combined in ecological risk assessment. Exposure Assessment aims to derive a predicted environmental concentration (PEC) using mainly modeling techniques. Effect Assessment identifies hazards to the environmental ....

1.3 STATISTICAL ECOTOXICOLOGY

1.4 ENVIRONMENTAL MONITORING

1.5 OBJECTIVES AND OUTLINE OF THE THESIS

This thesis pursues three objectives:

i to scrutinize new methods in statistical ecotoxicology,

ii explore available monitoring data and

iii provide tools to deal with data in ERA

Figure 1.1 provides an overview on the research performed and its relation to ERA. The thesis starts with a comparison of statistical methods to analyse ecotoxicological experiments (Chapter **??**). Specific questions addressed were:

- Are newer statistical methods more powerful than currently used methods?
- How much statistical power do current experimental designs in ecotoxicology exhibit?

ERA focuses with its predictions on small streams. xxxxxxxxxxxxxxxxxxxxxxx Specific goals were:

- Compile all available monitoring data on pesticides in Germany, with a focus on small streams.
- Derive thresholds for agricultural use and catchment size.
- Assess the current pollution in german streams.

The compilation of monitoring data from different data sources, lead to a big inhomogeneous amount of data that first needs to be harmonized. Chapters **??** (chemical data) and **??** (biological data) describe software solutions to simplify and accelerate the workflow of:

- validating and harmonizing chemical and taxonomic names
- link them to other datasets
- search properties and identifiers

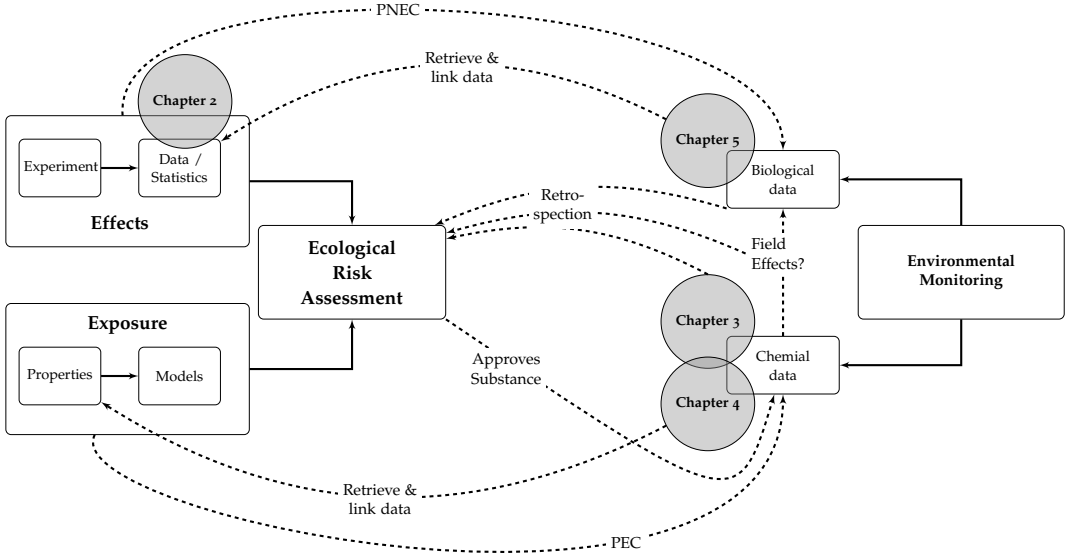

Figure 1.1: Conceptual overview on data in ecological risk assessment and environmental monitoring, as well as parts addressed by this thesis.