

# Eduard Szöcs

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## Personal

Date of birth 16.06.1987  
Nationality german  
Marital Status single

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## Education

- 04.2014–present **Ph.D. Environmental Sciences**, *University of Koblenz-Landau*, Landau.  
Quantification of large scale effects of pesticides on freshwater ecosystems.
- 04.2012–03.2014 **M. Sc. Ecotoxicology**, *University of Koblenz-Landau*, Landau.  
Thesis: Analysing mesocosm experiments: Principal Response Curves vs. Multivariate Generalized Linear Models.
- 11.2011 **B. Sc. Umweltwissenschaften**, *University of Koblenz-Landau*, Landau.  
Thesis: Effects of salinity and pesticides on community structure of macroinvertebrates in Australian streams.
- 09.2007–11.2011 **Dipl. Umweltwissenschaften**, *University of Koblenz-Landau*, Landau.

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## Work Experience and Teaching

- 04.2015 – present **Research Assistant**, *University of Koblenz-Landau*, Landau.  
UBA Project: "PSM in Kleingewässern" (FKZ 3714674040/1). Building, maintaining and analysing a nation-wide german pesticide monitoring database.
- 05.2014 – 04.2015 **Research Assistant**, *University of Koblenz-Landau*, Landau.  
Data analyses, maintenance of databases and servers, PhD research.
- 12.2014 – 02.2015 **Teaching Assistant**, *University of Koblenz-Landau*, Landau.  
Multivariate Statistics Course.
- 12.2013 – 02.2014 **Teaching Assistant**, *University of Koblenz-Landau*, Landau.  
Multivariate Statistics Course.

- 12.2013 **Research Assistant**, *University of Koblenz-Landau*, Landau.  
Development of a PostgreSQL-database of german physico-chemical data.
- 12.2012 – 02.2013 **Teaching Assistant**, *University of Koblenz-Landau*, Landau.  
Multivariate Statistics Course.
- 12.2012 **Research Assistant**, *Department System Ecotoxicology, UFZ – Helmholtz Centre for Environmental Research*, Leipzig.  
Development of rspear R-package.
- 05.2012 – 07.2012 **Internship**, *Department System Ecotoxicology, UFZ – Helmholtz Centre for Environmental Research*, Leipzig.  
Field Study on the effects of pesticides on macroinvertebrates.
- 12.2011 – 02.2012 **Teaching Assistant**, *University of Koblenz-Landau*, Landau.  
Multivariate Statistics Course.
- 07.2010 **Teaching Assistant**, *University of Koblenz-Landau*, Landau.  
Aquatic Field Course.
- 06.2006 – 07.2007 **Internship**, *Landschaftspflegeverband Südpfalz e. V.*, Landau.  
Freiwilliges Ökologisches Jahr.

## Programming Skills

Expert R  
Intermediate PostgreSQL, PostGIS, GrassGIS, L<sup>A</sup>T<sub>E</sub>X, git, xpath, regex  
Beginner Python, bash, NetLogo, C++

(Beginner = "I know the basics and can get the job done"; Intermediate = "I can effectively apply these tools"; Expert = "I can develop and expand these tools.")

## Software

I have developed the following software for the R platform:

- The **rspear** package calculates SPEAR<sub>pesticides</sub> in R.
- The **webchem** package to retrieve chemical information from the web.
- The **taxize** package (together with Scott Chamberlain) allows taxonomic search, retrieval and handling in R.
- I contributed some functions to the vegan package (**simper**, **dispweight** and others.)
- A web application to calculate statistical power for population endpoints in mesocosm experiments (available at <http://52.28.43.83/shinypower>).
- Various R functions related to ecotoxicology in my **esmisc** package.

## Publications and Conference contributions

### Peer-reviewed articles

- [1] John G. Mbaka, **Eduard Szöcs**, and Ralf B. Schäfer. "Meta-analysis on the responses of traits of different taxonomic groups to global and local stressors". In: *Acta Oecologica* 69 (2015), 65–70.

- [2] **Eduard Szöcs**, Paul J. van den Brink, Laurent Lagadic, Thierry Caquet, Marc Roucaute, Arnaud Auber, Yannick Bayona, Matthias Liess, Peter Ebke, Alessio Ippolito, Cajo J. F. ter Braak, Theo C. M. Brock, and Ralf B. Schäfer. "Analysing chemical-induced changes in macroinvertebrate communities in aquatic mesocosm experiments: a comparison of methods". In: *Ecotoxicology* 24.4 (2015), 760–769.
- [3] **Eduard Szöcs** and Ralf B. Schäfer. "Ecotoxicology is not normal: A comparison of statistical approaches for analysis of count and proportion data in ecotoxicology". In: *Environmental Science and Pollution Research* 22.18 (2015), 13990–13999.
- [4] **Eduard Szöcs**, Eckhard Coring, Jürgen Bäche, and Ralf B. Schäfer. "Effects of anthropogenic salinization on biological traits and community composition of stream macroinvertebrates". In: *Science of The Total Environment* 468–469 (2014), 943–949.
- [5] Scott A. Chamberlain and **Eduard Szöcs**. "taxize: taxonomic search and retrieval in R [v2; ref status: indexed, <http://f1000r.es/24v>"]". In: *F1000Research* 2.191 (2013). DOI: 10.12688/f1000research.2-191.v2.
- [6] Ralf B. Schäfer, Mirco Bundschuh, Duncan A. Rouch, **Eduard Szöcs**, Peter C. von der Ohe, Vincent Pettigrove, Ralf Schulz, Dayanthi Nuggeoda, and Ben J. Kefford. "Effects of pesticide toxicity, salinity and other environmental variables on selected ecosystem functions in streams and the relevance for ecosystem services". In: *Science of the Total Environment* 415.1 (2012), 69–78.
- [7] **Eduard Szöcs**, Ben J. Kefford, and Ralf B. Schäfer. "Is there an interaction of the effects of salinity and pesticides on the community structure of macroinvertebrates?" In: *Science of the Total Environment* 437.1 (2012), 121–126.

#### Poster presentations

- [1] **Eduard Szöcs** and Ralf B. Schäfer. "Ecotoxicology is not normal". SETAC Europe; Barcelona, 2015.
- [2] **Eduard Szöcs** and Scott A. Chamberlain. "taxize: taxonomic search and retrieval in R". International Statistical Ecology Conference; Montpellier, 2014.
- [3] **Eduard Szöcs**, Ben J. Kefford, V. Pettigrove, and Ralf B. Schäfer. "Einfluss von Pestiziden und Salinität auf Makroinvertebratengemeinschaften". SETAC GLB; Landau, 2011.

#### Workshops

- 07.2015 **Data analysis in freshwater ecology using R**, *9th Symposium for European Freshwater Sciences*, Geneva.  
Workshop held together with Dr. Ralf B. Schäfer and Avit Kumar Bhowmik.  
Homepage: [https://github.com/EDiLD/sefs9\\_Rworkshop](https://github.com/EDiLD/sefs9_Rworkshop)

Neustadt a.d. Weinstraße, September 30, 2015