

Eduard Szöcs



Personal

Date of birth 16.06.1987
Nationality german
Marital Status single

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.

Work Experience and Teaching

- 11.2015 – present **Freelance Scientist & Consultant**.
Data sourcing, cleaning and analysis with specialization in Environmental & Ecological data. Courses in ecological statistics with the software "R".
- 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.

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- 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^AT_EX, git, xpath, regex, html, xml

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 **taxize** package (together with Scott Chamberlain) allows taxonomic search, retrieval and handling in R.
- The **webchem** package to retrieve chemical information from the web.
- The **rspear** package calculates SPEAR_{pesticides} in R (out-of-date).
- Minor contributions to the **vegan** package (simpler, dispweight and others.)
- A web application to calculate statistical power for population endpoints in mesocosm experiments (currently offline).
- Various other R functions related to ecology and ecotoxicology.

All of this software is open-source and available from my github account (<https://github.com/EDiLD>).

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.
Workshop homepage: https://github.com/EDiLD/sefs9_Rworkshop
- 11.2015 **Introduction to ggplot2**, *Workshop held at Young Academics Conference 2015 - Land-Water-Interactions*, Klingenmünster.
Workshop homepage: https://github.com/EDiLD/r_landau_2015

Neustadt a.d. Weinstraße, November 23, 2015