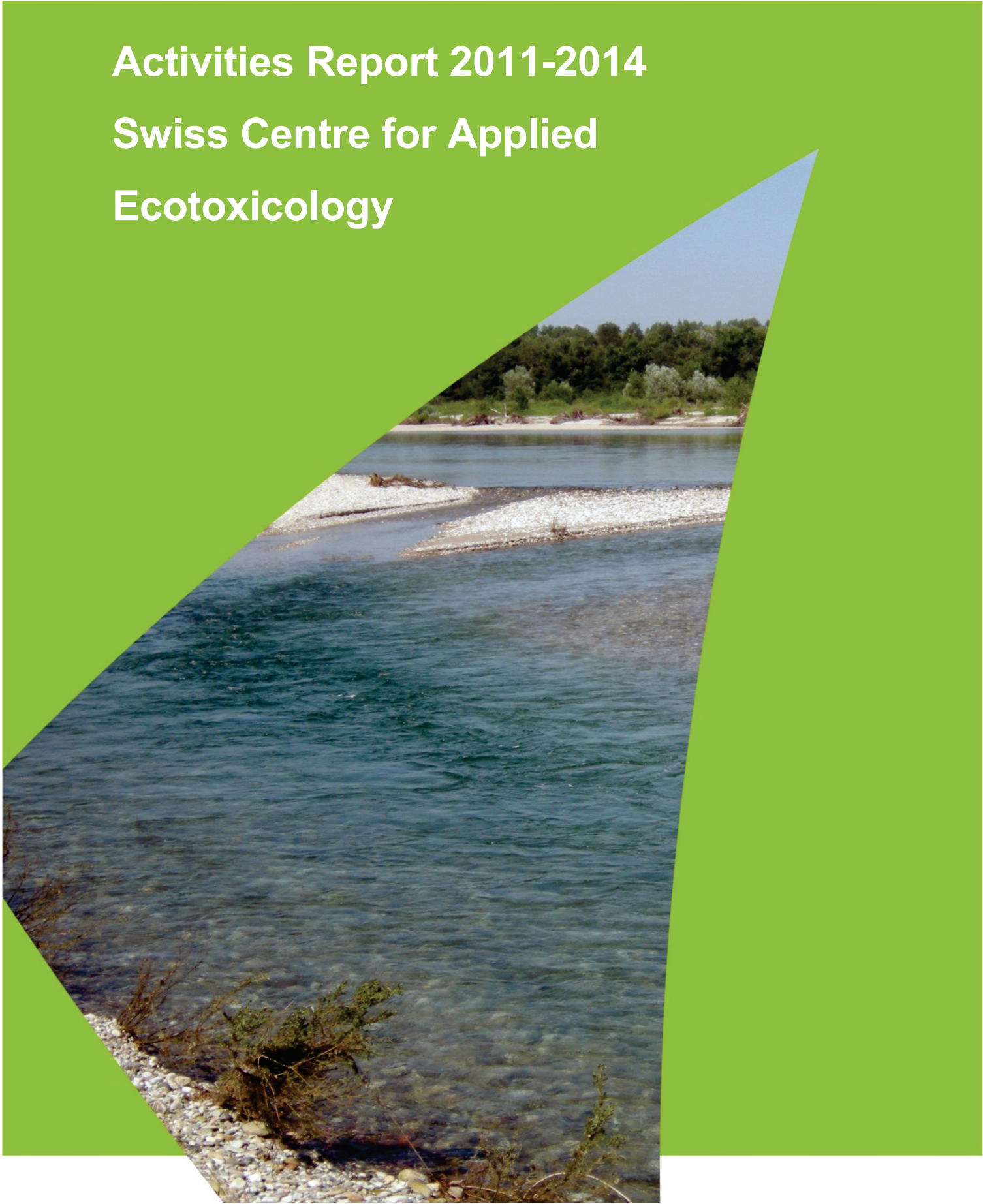


Activities Report 2011-2014

Swiss Centre for Applied Ecotoxicology



Impressum

Herausgeber

Oekotoxzentrum, Schweizerisches Zentrum für angewandte Ökotoxikologie, Eawag-EPFL,
8600 Dübendorf

Autoren

Dr. Inge Werner / Brigitte Bracken

Kontakt

email: inge.werner@oekotoxzentrum.ch

Tel: +41 58 765 58 21

Titelfoto: Andri Bryner, Eawag



Table of Contents

1	Introduction.....	1
1.1	Mandate.....	1
1.2	Development and Positioning.....	1
2	Activities 2011-2014.....	3
2.1	Further Education and Training.....	3
2.1.1	Courses.....	3
2.1.2	Two-day further education courses.....	4
2.1.3	Ecotoxicology modules within Advanced Studies Programmes.....	5
2.1.4	Apprenticeships.....	6
2.1.5	Master- und Bachelor Thesis Projects.....	6
2.1.6	Student Internships.....	7
2.2	Consulting.....	8
2.3	Fact Sheets.....	10
2.4	Oekotoxzentrum (Centre Ecotox) News.....	11
3	Reporting and Outreach.....	12
3.1	Publications and Reports.....	12
3.2	Conference Presentations, Seminars.....	12
3.3	Media Reports.....	13
3.4	Outreach.....	14
4	Projects.....	15
4.1	Major Projects by Area of Expertise.....	16
4.1.1	Aquatic Ecotoxicology.....	16
4.1.2	Sediment Ecotoxicology.....	18
4.1.3	Soil Ecotoxicology.....	18
4.1.4	Hazard and Risk Assessment.....	19
4.1.5	Environmental Chemistry.....	20
4.2	Project Evaluations.....	20
5	Membership in Professional Organisations, Boards and Working Groups.....	21
6	Balance of activities.....	23
7	Organization and Management.....	24
7.1	Organization.....	24
7.1.1	Organizational Structure within the ETH Domain.....	24
7.1.2	Organisational Structure of the Ecotox Centre.....	24
7.2	Personnel.....	25
7.3	Management.....	26
7.3.1	Structures.....	26
7.3.2	Strategy.....	27



7.3.3 Budget.....	27
7.4 Infrastructure.....	27
8 Achievements and Outlook	30
Annex 1 Publications und Reports	32
1.1. Publications	32
1.2. Reports	36
Annex 2 Media Reports and Outreach.....	38
2.1. Newspapers and Newsletters.....	38
2.2. Radio/TV	38
2.3. Outreach	39
Annex 3 Projects	41
Annex 4 Presentations	47



1 Introduction

1.1 Mandate

The Ecotox Centre was founded in 2008 by request of the Federal Council and Parliament as the Swiss Centre for Applied Ecotoxicology, an independent institution embedded in the ETH domain, and associated with Eawag and EPFL with a centre-specific mandate. The Centre is headquartered at Eawag in Dübendorf with a subsidiary at EPFL. Basis and point of reference for the development and structure of the Ecotox Centre is the "Report of the Federal Council on independent toxicology research in Switzerland"¹ from 2007. It defines the fundamental role and responsibilities of the Ecotox Centre.

The Centre conducts applied research in the areas of aquatic and terrestrial ecotoxicology, and provides further education and consulting services to its stakeholders. The focus of its activities is on ecotoxicological investigations of exposure, effects and risk assessment of chemicals.

The Centre's key tasks are:

- Providing practical education and training in the field of ecotoxicology
- Development of new ecotoxicological testing and assessment methods
- Implementation of screening programs for early detection of environmental risks, and development of the methodology required for this purpose
- Consulting, functioning as a hub for questions in the area of ecotoxicology
- Evaluation of chemicals
- Contract research (including risk management, chemicals assessment)
- Participation in national and international expert groups
- Communication of ecotoxicological concerns

1.2 Development and Positioning

The Ecotox Centre can look back on a productive first phase. Since its foundation the following mile stones have (among others) been reached.

The Centre

- developed and implemented a teaching and training programme in ecotoxicology
- established various ecotoxicological testing and evaluation methods, and developed these further within an international context
- successfully completed multiple large-scale projects in cooperation with FOEN, cantons and industry and launched additional collaborations
- established and maintained various portals for disseminating ecotoxicological information (eg website, Oekotoxzentrum/Centre Ecotox News, fact sheets, seminars, public relations, etc.)

Today, the Ecotox Centre has successfully established itself in Switzerland, is internationally recognised, and fulfills the mandate of the Federal Council. Based on the provisions of the policy, the recommendations and instructions of various stakeholders, and the knowledge and experience gained during recent years, its role and principal asks can be summarised as follows:

The Ecotox Centre is the Swiss center of excellence in applied, practice-oriented ecotoxicology in an international context. It makes a significant contribution to the identification and assessment of the effects of chemicals on the environment, has the knowledge base needed to realize

¹ Bericht des Bundesrates über die unabhängige Toxikologie-Forschung in der Schweiz, 2.5.2007, S. 3772, <http://www.admin.ch/ch/d/ff/2007/3747.pdf>



this task, and continually develops (knowledge management), makes available (knowledge transfer) and applies (knowledge use) its expertise.

The Ecotox Centre

- provides training and further education in ecotoxicology for professionals
- provides tools and information for science-based decision-making
- identifies ecotoxicological risks and provides solutions

and is the primary hub for research and development, service and education in applied, practice-oriented ecotoxicology.

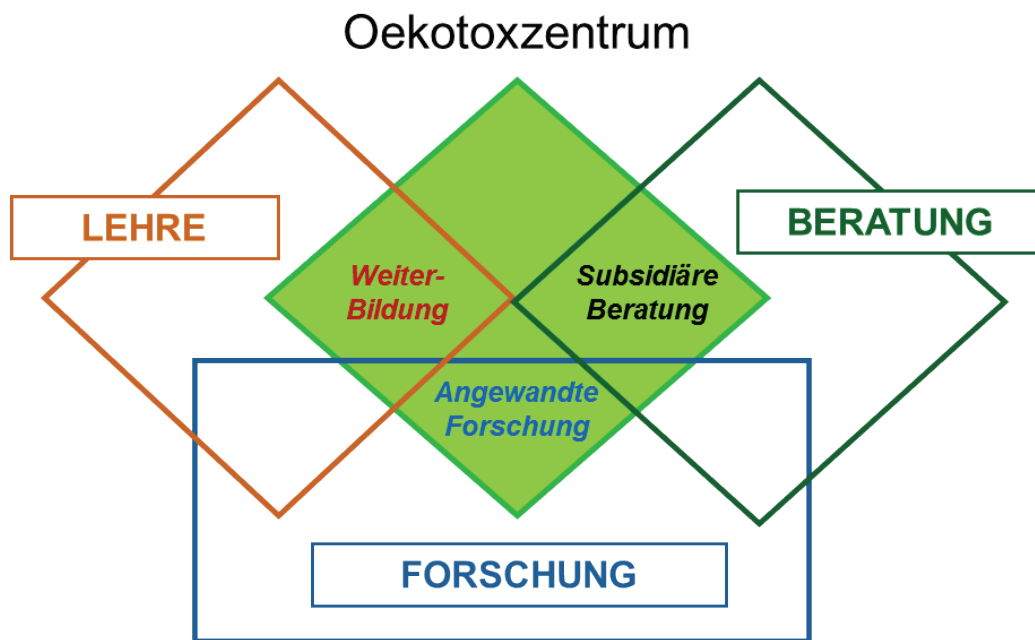


Figure 1: Positioning of the Ecotox Centre with respect to its principal tasks

The following report presents the activities of the Ecotox Centre during the period 2011-2014.



2 Activities 2011-2014

2.1 Further Education and Training

The Ecotox Centre is primarily involved in teaching further education courses, but also provides apprenticeship training, and opportunities for Master's and Bachelor's thesis projects.

2.1.1 Courses

During the reporting period, the Ecotox Centre organised 12 further education courses, and was involved in two advanced education programmes. Information on these courses is provided in Table 1. The list includes two-day courses offered to professionals at Dübendorf and Lausanne. These courses are advertised directly by the Ecotox Centre, as well as through Eawag's PEAK programme and the further education programme at the Université of Lausanne (UNIL) and EPFL. Course documents can be obtained separately.

In addition, the Ecotox Centre developed and taught ecotoxicology modules within Advanced Education Programmes organized by the Swiss Centre for Applied Human Toxicology (SCAHT, www.scaht.ch), one-day courses for students of the Zürcher Hochschule für Angewandte Wissenschaften (ZHAW), Wädenswil, and a short course organized by the Ecotox Centre, SCAHT and US EPA at the 2014 Annual Meeting of the Society for Environmental Toxicology and Chemistry Europe (SETAC EU) in Basel, CH. Information on participant affiliations and course evaluations for further education courses and advanced studies modules is provided below.

Table 1: List of education courses organized by the Ecotox Centre 2011-14

<i>Two-Day Ecotox Courses:</i>	Dates	Lead	Location
Einführung in die Ökotoxikologie	5/6.5.2011	Kienle, Kunz	Dübendorf
Mikroverunreinigungen in Oberflächengewässern mit Schwerpunkt hormonaktive Substanzen	29/30.9.2011	Kienle, Kunz	Dübendorf
Introduction à l'écotoxicologie	28/29.3.2012	Campiche	Lausanne
Evaluation von ökotoxikologischen Tests	3./4.10.2012	Kienle	Dübendorf
Einführung in die Ökotoxikologie	11/12.6.2013	Junghans, Homazawa	Dübendorf
Évaluation des risques des polluants dans l'environnement	13/14.11.2013	Campiche, Junghans	Lausanne
Wissenschaftliche Grundlagen zur Regulation von Nanomaterialien (co-organised with SCAHT)	20/21.1.2014	Vermeirssen, Kase	Dübendorf
Umwelteffekte und Risiken von Pestiziden (co-organised with SCAHT)	10/11.11.2014	Junghans, Werner	Dübendorf
<i>Modules in Advanced Studies Programmes:</i>			
Ecotoxicology Module, Master of Advanced Studies in Toxicology (SCAHT, org.)	24-27.1.2012	Campiche, Chèvre (UNIL)	Lausanne



	Dates	Lead	Location
Advanced Studies Programme Regulatory Sciences, Module: Ecotoxicology and Environmental Risk Assessment (SCAHT, org.)	4-8.11.2013	Vermeirssen, Werner, Kienle, Junghans	Basel/Dübendorf
Master of Advanced Studies in Toxicology, Module Ecotoxicology, (SCAHT, org.)	4-7.2.2014	Campiche, Kienle, Kunz	Lausanne
Introductory Course for Students of ZHAW:			
Einführung in die Ökotoxikologie	11.1.2012	Kienle	Dübendorf
Einführung in die Ökotoxikologie	3.4.2013	Kienle	Dübendorf
Einführung in die Ökotoxikologie	9.4.2014	Kienle	Dübendorf
Other:			
SETAC EU Short Course: Advances in environmental and human risk assessment - a trans- atlantic perspective	11.5.2014	Wilks (SCAHT), Werner	Basel

2.1.2 Two-day further education courses

A total of 253 representatives from federal and cantonal agencies, academia, private industry and other sectors participated in eight 2-day further education courses offered by the Ecotox Centre in Dübendorf and Lausanne during the reporting period (figure 2). The majority came from cantonal government agencies (77) and private industry (76), 37 from federal government agencies and 33 from academia. The remaining 30 were members of professional or non-profit (primarily environmental) organizations and private persons.

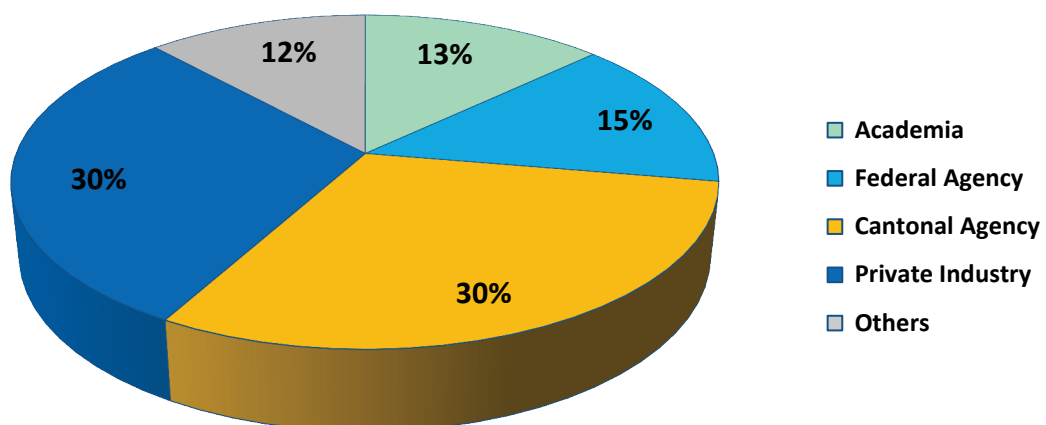


Figure 2: Affiliations of participants in 2-day Ecotox Courses 2011-2014



The Ecotox further education courses were rated highly throughout in both the quality of content and teaching and the quality of organization, both shown below in chronological order (figure 3).

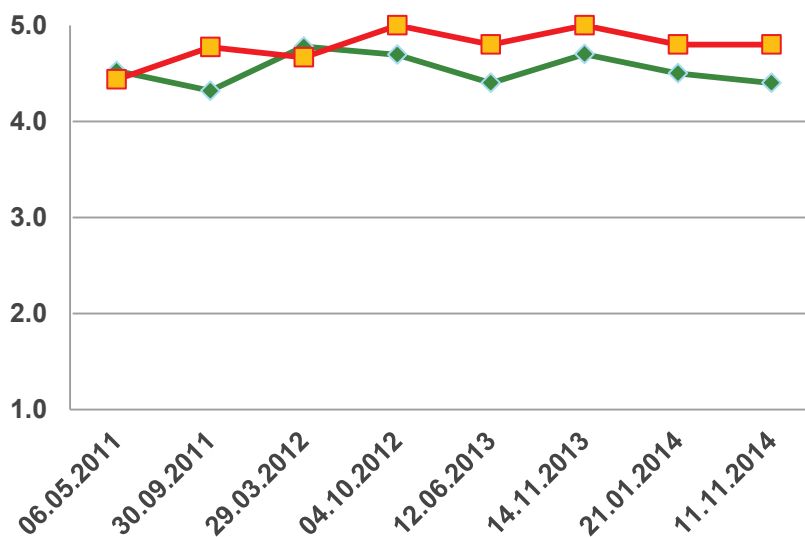


Figure 3: Evaluation results for 2-day further education courses organized by the Ecotox Centre; in red: average scores for organization, in green: average scores for content and teaching (“expectations met”). Scores ranged from 1 to 5, with 5 indicating the highest level of satisfaction.

2.1.3 Ecotoxicology modules within Advanced Studies Programmes

A total of 59 students participated in ecotoxicology modules of Advanced Studies Programmes organized by SCAHT. These programmes are mainly targeted to industry representatives, which is reflected in the affiliations of course participants (figure 4).

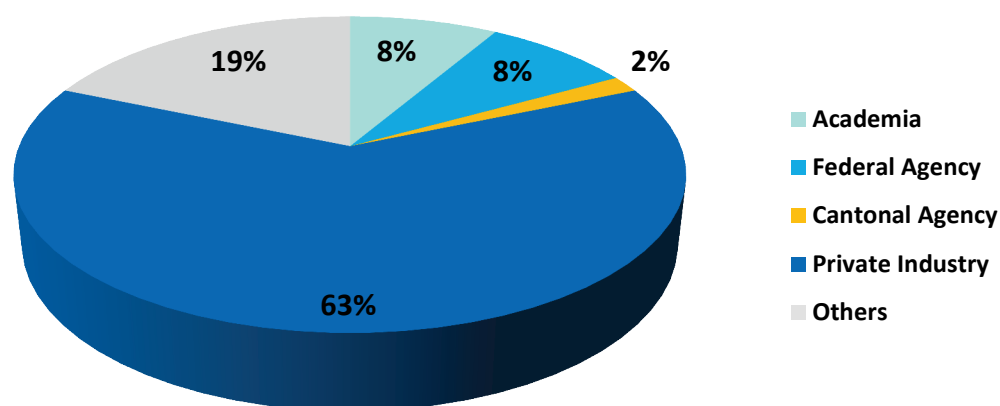


Figure 4: Affiliations of course participants in Advanced Studies Programmes 2011-2014



2.1.4 Apprenticeships

Since September 2011, the Ecotox Centre participates in the apprenticeship programme at Eawag, Dübendorf. It has since supervised and taught three trainees (table 2).

Table 2: Trainees of the Eawag apprenticeship programme at the Ecotox Centre 2011-14

Name/Nationality	Training Year/Field	Period
T. Schorrer, CH	3rd year, laboratory technician biology	Aug 11 - Jul 12
S. Gut, CH	3rd year, laboratory technician biology	Sep 13 - Aug 14
S. Hasler, CH	1st year, laboratory technician biology	Dec 14 – May 15

2.1.5 Master- und Bachelor Thesis Projects

The Ecotox Centre receives numerous inquiries from students who are interested in doing their thesis project at the Centre. Potential student research projects are listed on the Centre's internet page. Since 2011, eight students have successfully carried out their Master's or Bachelor's thesis project under the supervision of Ecotox Centre team members (table 3).

Table 3: Student thesis projects carried out at the Ecotox Centre 2011-14

Name/Nationality (Supervisor)	Project Title Master (M), Bachelor (B)	University	Period
A. Schifferli, CH (Kunz)	Untersuchung von Drainagewässern und Gülle auf androgene-, anti-androgene und anti-östrogene Wirkungen (B)	ZHAW Wädenswil	May – Sep 11
R. Gauch, CH (Junghans)	Does measuring cell number division improve the combined algae test? (M)	ETHZ	Sep 11 – Mar12
B. Ganser, D (Kienle, Vermeirssen)	Impact of wastewater treatment plant effluent on <i>Gammarus fossarum</i> 's feeding rate and vitellogenin levels (M)	Uni Koblenz- Landau, D	Mar – Jul 12
R. Bebon, D (Casado)	Use of the freshwater ostracod <i>Heterocypris incongruens</i> for sediment toxicity assessment: Influence of sediment composition and sensitivity to selected organic micropollutants (M)	Uni Tübingen, D	Dec 12 – May 13
S. Birrer, CH (Kienle)	Investigation of water quality with bioassays in reference to micropollutants upstream and downstream of wastewater treatment plant outfalls (B)	ZHAW Wädenswil	May – Sep 13
L. Wiesner, D (Junghans)	Aquatic Risk Assessment for Triazole Fungicides: The Impact of Epoxiconazole and Tebuconazole on Aquatic Fungi (M)	Uni Frankfurt am Main, D	Jan – Jul 14
M. Miranda, CH (Campiche)	Caractérisation de l'influence des facteurs environnementaux taux d'humidité et température du sol sur la réponse	EPFL	Feb – Jul 14



Name/Nationality (Supervisor)	Project Title Master (M), Bachelor (B)	University	Period
	Bait Lamina (activité biologique des organismes du sol) avec et sans ajout de pesticide (M)		
L. Molano-Leno, E (Casado)	Sediment quality in the Venoge (M)	Uni Càdiz, E	Sep 14 – Feb 15
C. Thiemann, D (Kienle)	Auswirkung von Ozonung und verschiedenen Nachbehandlungsmethoden auf die Toxizität von Abwasser gegenüber frühen Lebensstadien der Regenbogenforelle (M)	Uni Tübingen, D	Feb – Mar 15

2.1.6 Student Internships

The Ecotox Centre also receives numerous inquiries from students who are interested in doing an internship at the Centre to further their expertise and skills in practice-oriented ecotoxicology. Since 2011, nine students have worked as student interns, some of them stayed on and subsequently did their thesis project with the Centre.

Table 4: Student internships supervised at the Ecotox Centre 2011-14

Name/Nationality (Supervisor)	Project Title	University	Period
N. Remund, CH (Campiche)	Einsatz des Köderstreifentests zur Untersuchung der biologischen Aktivität von Landwirtschaftsböden	ZHAW Wädenswil	Mar – Apr 11
I. Farkas, CH (Vermeirssen, Werner)	Bericht zu <i>Gammarus fossarum in situ</i> Tests an zwei ausgewählten Schweizer Fließgewässern	ETHZ	Mar – Jul 12
K. Graf, D (Casado)	<i>Chironomus riparius</i> sediment toxicity test: control chart establishment and sensitivity data review	Uni Tübingen, D	Jun – Jul 12
R. Gauch, CH (Di Paolo, Werner)	Praktikum: Arbeiten mit dem Fischembryotest (<i>Danio rerio</i>)	ETHZ	Jul – Dec 12
L. Mosberger (Kienle)	Investigation of water quality with bioassays in reference to micro pollutants upstream and downstream of wastewater treatment plant outfalls	ZAHW Wädenswil	May – Sep 13
C. Kammer, CH (Kunz, Gälli/BMG)	Eintrag von Östrogenen aus der Landwirtschaft in Fließgewässer	ETHZ	Mar – Jul 2013
D. Sauvain, CH (Casado)	Ecotoxicologie des sédiments	Uni Lausanne	Jul – Aug 13



L. Ittner, D (Junghans)	Die Bedeutung aquatischer Pilze bei der Ableitung von Umweltqualitätsnormen (EQS) für Fungizide	TU München, D	Jul – Aug 13
B. Ganser, D (Kienle)	Gammariden- und Oekotoxtests	Uni Landau, D	Aug – Nov 13
J. Mazenauer, CH (Vermeirssen)	EcolImpact Probenahme und Bio-tests	Universität Zürich	May – Aug 14
C. Thiemann, D (Kienle)	Einsatz des Algentests im Umweltmonitoring	Uni Tübingen, D	Aug 14 – Jan 15

2.2 Consulting

During the reporting period, the Ecotox Centre responded to 733 requests and questions from stakeholders and the public. The requests per year more than doubled from 95 requests in 2011 to 245 in 2014. This number includes inquiries that can be responded to without the need for experimental work, however, literature searches or meetings are necessary on occasion. The estimated work time required to provide this service has been recorded since 2013 and was approximately 308 hours in 2013 (232 requests), and 332 hours in 2014 (245 requests).

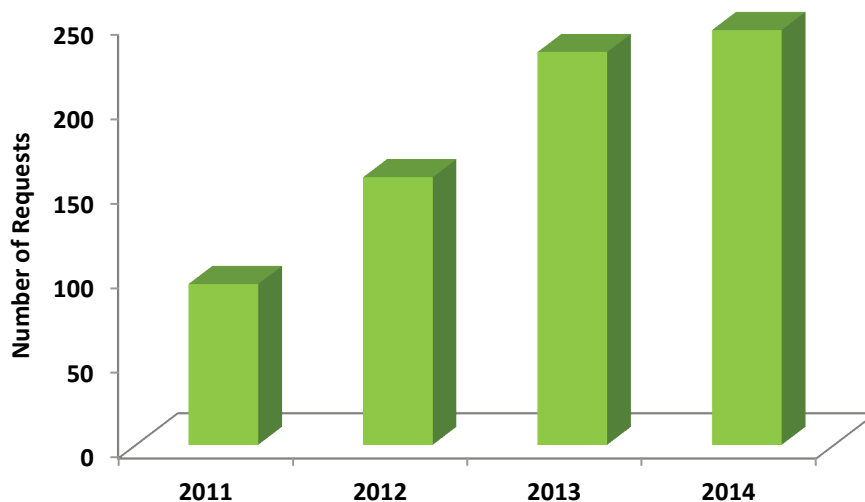


Figure 5: Number of annual requests responded to by Ecotox Centre staff.

An analysis of the affiliations of persons who requested information from the Ecotox Centre showed that that most came from agencies (34%) and academia (36%) (figure 5), followed by private companies (19%). Within agencies, 70% of requests came from Swiss federal or international agencies, and 30% from cantonal or regional agencies. More than half of the requests came from Switzerland, 42% were from other countries.

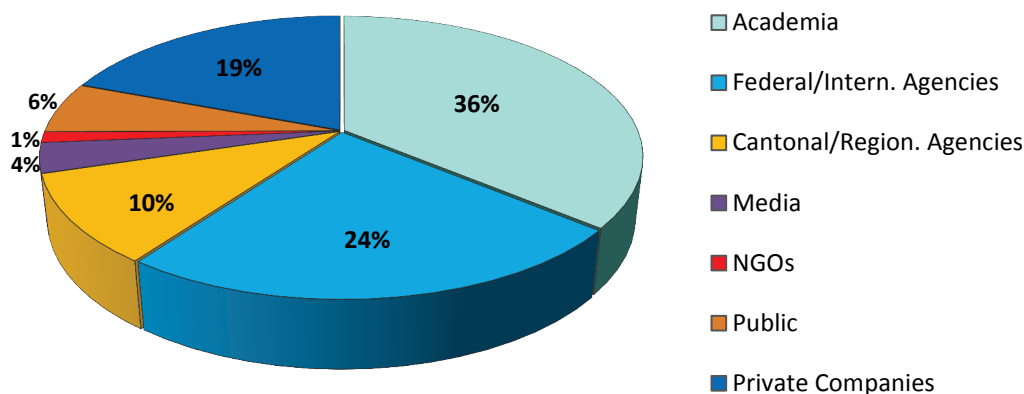


Figure 6: Affiliations of persons who requested information

Inquiries fell into three principal topic areas: bioassays, risk assessment and environmental chemistry (figure 7). 49% were related to environmental risk assessment, especially on environmental quality standards (EQS) and their derivation, 46% were in the area of bioassays, primarily in aquatic ecotoxicology, their application and interpretation. Only 5% were on topics related to environmental chemistry.

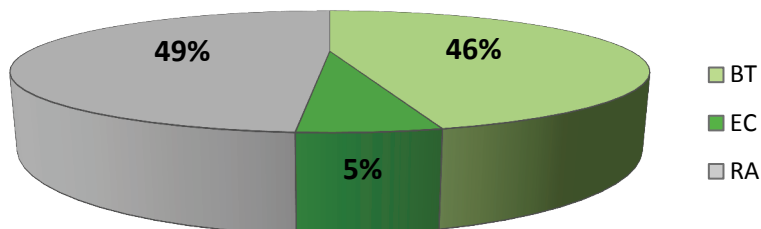


Figure 7: Principal topic areas of consulting services provided during 2011-14; BT: bioassays, EC: environmental chemistry; RA: risk assessment

The most important specific topics on which information was requested are shown in figure 7. By far the majority of questions referred to aquatic bioassays, often in connection with their application in the BAFU project “Micropoll”, which was focused on evaluating treated wastewater and wastewater treatment technologies using ecotoxicological tests. This project received much attention nationally and internationally. Pharmaceuticals, environmental threshold concentrations and their effects in the environment, as well as the topic of environmental quality criteria (EQS) ranked second and third, followed by questions on endocrine disrupting compounds (EDC) and their effects. Other important topics were related to pesticides, as well as training and education opportunities provided by the Ecotox Centre.

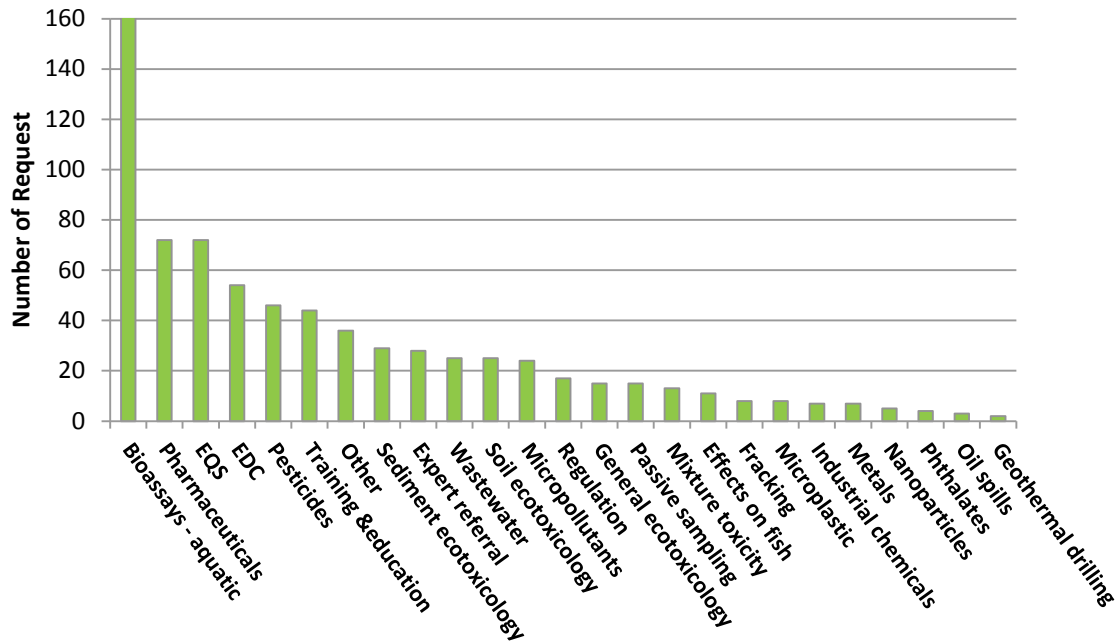


Figure 8: Specific topics on which information was requested from the Ecotox Centre

2.3 Fact Sheets

Fact sheets are produced based on current events and interest in specific topics and made available on the Ecotox Centre website in German, French and English. They are intended for providing an informative overview of a specific topic. In 2011-14, eight fact sheets were produced, some in collaboration with Eawag.

Table 5: Fact sheets produced by the Ecotox Centre in 2011-14

Title and Year Produced	Authors
Sedimentökotoxizität (2012)	I. Werner, A. Schäfer, C. Casado
Ökotoxizität von Nanopartikeln (2012)	A. Schäfer
Hormonaktive Stoffe in der Umwelt (2012)	A. Schäfer, P. Kunz, C. Kienle, E. Vermeirssen
Schiefergas – Wissenswertes zum Hydraulic Fracturing (Fracking) (2013)	M. Junghans
Radionuklide in der Umwelt (2013)	A. Schäfer C. Casado
Ökotoxizität der Seltenen Erden (2013)	A. Schäfer, C. Casado
Pflanzenschutzmittel in Gewässern (2014)	M. Junghans, I. Werner, A. Schäfer, C. Stamm, A. Bryner, R. Eggen
Ökotoxikologische Beurteilung von PSM in Oberflächengewässern: EQS- und RAC-Werte (2014)	M. Junghans, I. Werner, A. Schäfer, C. Stamm, A. Bryner, R. Eggen



2.4 Oekotoxzentrum (Centre Ecotox) News

The Centre's bilingual (German, French) newsletter has been published twice a year since the autumn of 2010. It informs about projects performed at the Ecotox Centre, new developments, events and courses, and provides information on important new publications in the field of ecotoxicology. The News are available free of charge as pdf on the website or can be obtained in printed form by mail. In the future, the newsletter will be web-based. For the latest edition (November 2014), a total of 897 copies (627 in print, 273 electronic) of the Ecotox Centre News were mailed out. Of these, 661 were sent to subscribers in Switzerland, 139 were sent abroad. Additional copies were distributed at various events (conferences, courses).



Figure 9: The Oekotoxzentrum/Centre Ecotox News, the Ecotox Centre's newsletter, appears twice a year.



3 Reporting and Outreach

Presenting project results at conferences and publishing them in scientific journals is important for providing the information to other scientists and lend credibility to projects carried out by the Ecotox Centre. Publications in the Swiss journal Aqua & Gas and newsletters are intended to make results available to federal and local environmental agencies, and private enterprise.

3.1 Publications and Reports

During the reporting period, team members of the Ecotox Centre published 58 scientific papers, among them 45 in peer-reviewed journals, 7 in various newsletters and 6 articles in Aqua & Gas (formerly Gas, Wasser und Abwasser, GWA). The average impact factor of the scientific journals where peer-reviewed articles were published was 2.97 in 2011, 3.16 in 2012 and 2013, and 3.69 in 2014 (figure 8).

A total of 20 project reports were produced during 2011-14. Complete lists of publications are provided in Annex 1, pages 32-37.

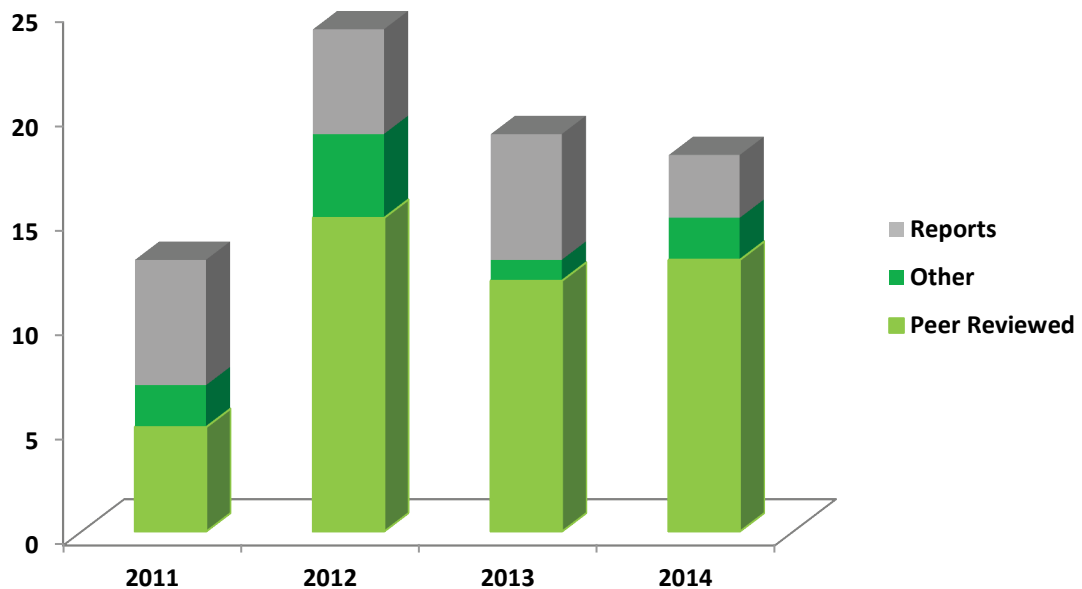


Figure 10: Annual number of publications and reports produced by members of the Ecotox Centre in 2011-14

3.2 Conference Presentations, Seminars

The Ecotox Centre regularly participates in annual meetings of the following professional societies: Society of Environmental Toxicology and Chemistry (SETAC) Europe, SETAC German Language Branch, Swiss Society of Toxicology and others. Ecotox Centre staff authored or co-authored a total of 93 conference presentations (42 talks, 52 posters) during the reporting period (Annex 4, page 47). In addition, team members gave 42 oral presentations, seminars and guest lectures at expert workshops and further education courses elsewhere.

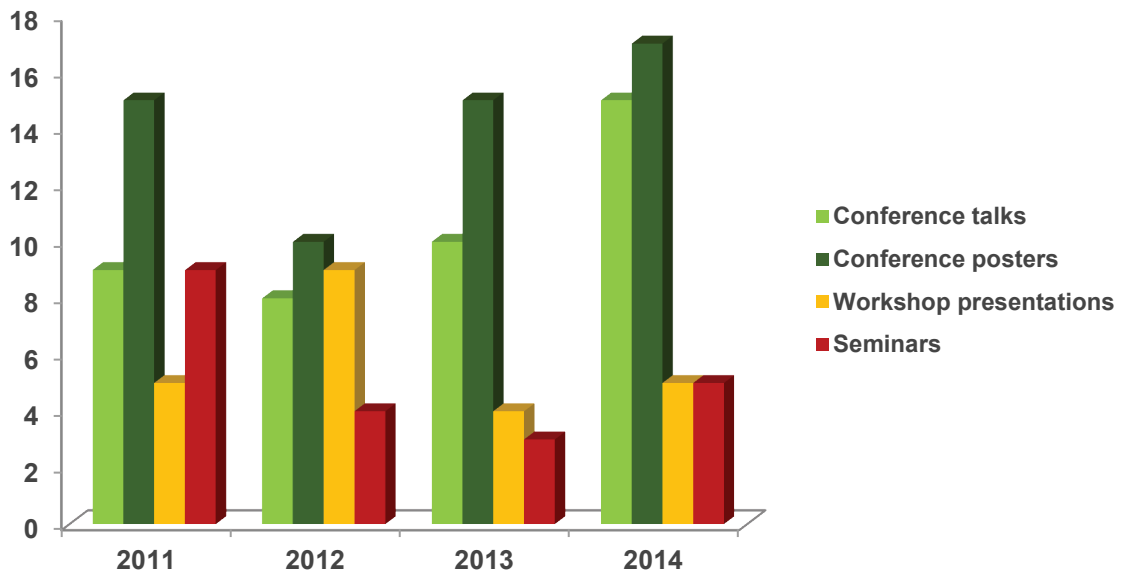


Figure 11: Annual number of presentations given by members of the Ecotox Centre in 2011-14

3.3 Media Reports

The Ecotox Centre is frequently contacted by the media (printed, radio/TV) to comment on events and developments where contamination of the environment is concerned. Media reports are listed in Annex 2, page 38.

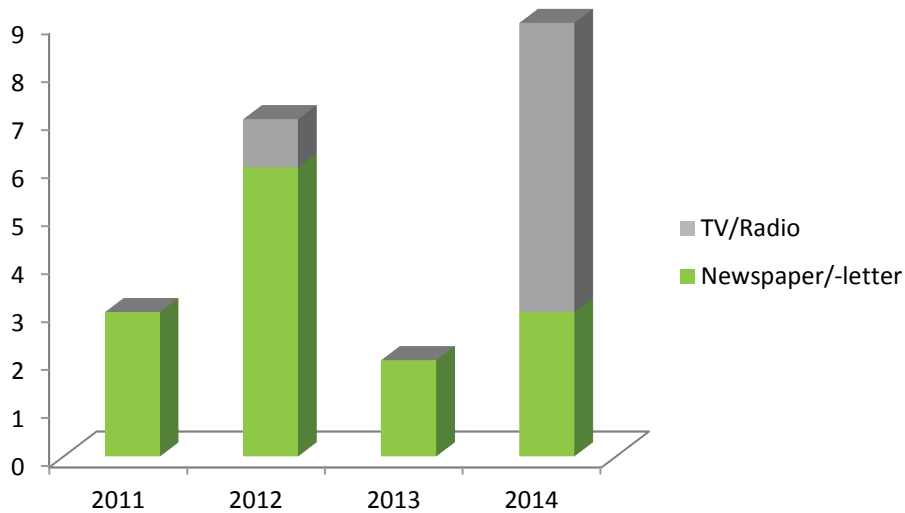


Figure 12: Annual number of reports in newspapers and -letters and Radio/TV where members of the Ecotox Centre were involved in 2011-14



3.4 Outreach

The Ecotox Centre is engaged in communicating its activities and the importance of ecotoxicological topics to the public. It did so via information booths at local events, participation in children's events, demonstrations at opening days or special presentations and tours of the Ecotox Centre, at a total of 39 events (figures 11, 12) during the reporting period. A complete list of activities is provided in Annex 2, page 39.

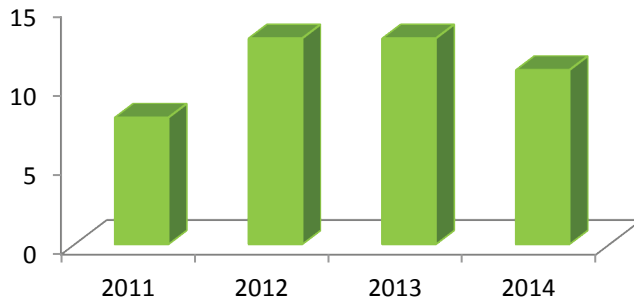


Figure 13: Annual number of out-reach events the Ecotox Centre participated in (2011-14)



Figure 14: Outreach activities at the Ecotox Centre: upper left: Marion Junghans presents stream creatures to a delegation of the Ständerätlichen Kommission für Wissenschaft, Bildung und Kultur (13.5.2013); lower left: Andrea Schifferli introduces in vitro bioassays to students to laboratory bioassays at the Zukunftstag of Eawag/Empa (14.11.2013); right: Emilie Gil demonstrates sediment bioassays to students at Journée des Classes, EPFL (5.6.2014); lower right: Etienne Vermeirssen demonstrates passive sampling methods to Ueli Ochsenbein, Kanton Bern, at Berner Wassertag, 13.3.2012.



4 Projects

Projects carried out at the Ecotox Centre must have an applied focus, and involve collaborations with most stakeholder groups. The Centre is also involved in EU projects with focus on practice oriented ecotoxicological questions. It carries out projects on its own initiative where a need has been identified.

To date, the Ecotox Centre has been involved in numerous applied, practice-oriented research projects on topics related to ecotoxicological hazard and risk assessment, the application of bioassays in environmental monitoring and the development and optimization of evaluation methods. The majority of projects are carried out in collaboration with external partners from government agencies, practitioners from cantonal agencies, academic research groups and private companies.

During the reporting period, the Ecotox Centre acquired 1'616'000 CHF in extramural funding (externally funded projects) for a total of 34 projects (Figure 15: a, b). In addition, it carried out or contributed to a total of 41 projects using its base funding (internally funded projects) (Figure 16:). Projects performed in 2011-14 are listed in detail in Annex 3, page 41.

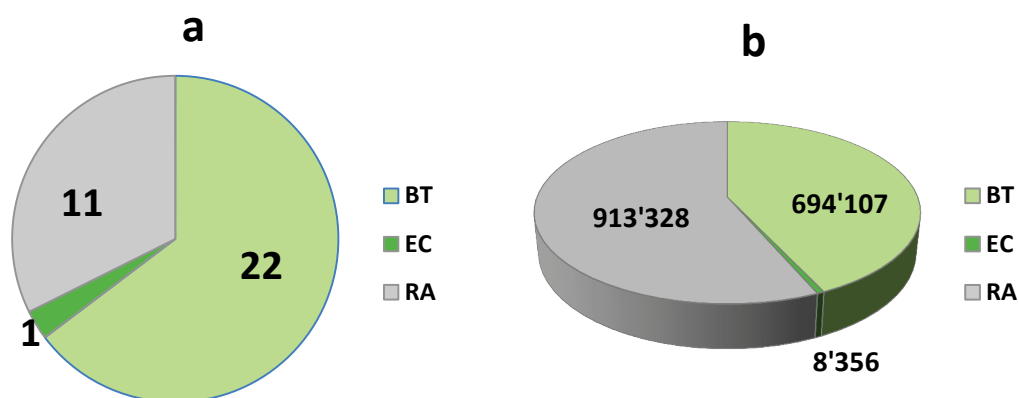


Figure 15: Externally funded projects carried out at the Ecotox Centre during 2011-14: (a) area of expertise, (b) funding received (in CHF); BT: bioassays, EC: environmental chemistry; RA: risk assessment

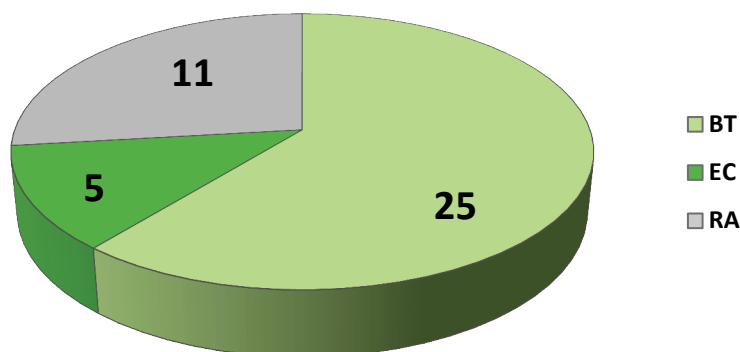


Figure 16: Internally funded projects carried out at the Ecotox Centre during 2011-14 according to area of expertise; BT: bioassays, EC: environmental chemistry; RA: risk assessment



4.1 Major Projects by Area of Expertise

4.1.1 Aquatic Ecotoxicology

The majority of externally funded projects in the area of aquatic ecotoxicology dealt with topics related to the application of bioassays and risk assessment in water quality monitoring, one of the key focus areas of the Ecotox Centre. In projects such as “Strategy Micropoll” and the module “Ecotoxicology” within the “Swiss Modular Stepwise Procedure (Modul-Stufen-Konzept)” for environmental monitoring, promising methods were selected for monitoring estrogenic and phytoxic chemicals in treated wastewater and surface waters, and a detailed concept for the application of these bioassays in water quality monitoring was developed.

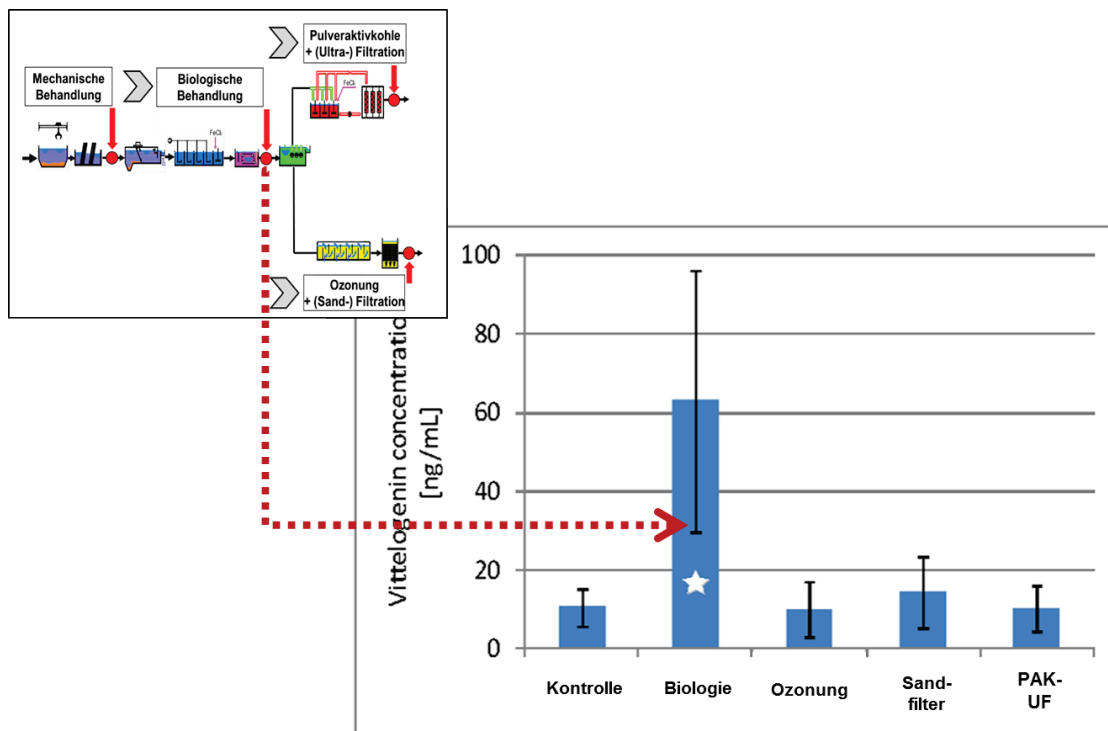


Figure 17: Results of experiments carried out to determine the effectiveness of advanced wastewater treatment technologies (Kienle et al. 2011, Oekotoxzentrum Report): Vitellogenin levels in juvenile rainbow trout.

Two major projects focus on selecting the best possible treatment methods for wastewater. In the EU-funded project “Demonstration of promising technologies to address emerging pollutants in water and wastewater (DEMEAU)”, 17 institutions from 5 countries collaborate in the evaluation and application of technologies to eliminate and monitor aquatic micropollutants. The project “Biologische Nachbehandlung von kommunalem Abwasser nach Ozonung”, which is a collaboration with ARA Neugut, and the Eawag Departments Urban Water Management and Environmental Chemistry, was launched in 2014. Its focus is the evaluation of advanced wastewater treatment technologies for the elimination of micropollutants. The Ecotox Centre uses ecotoxicological bioassays to monitor toxicity and evaluate the efficiency of treatment methods.

A battery of bioassays has been applied in multiple research projects to gain knowledge on links between bioassay results with higher level effects on populations and ecosystems. Currently, the Eawag project “Ecolmpact” investigates the ecological and ecotoxicological condition of Swiss surface waters in the vicinity of wastewater treatment plants. This project offers an excellent opportunity to evaluate bioassay results in an integrative ecological context. This will facili-



tate the interpretation of data generated using laboratory bioassays. In this project, the Centre collaborates with Eawag Departments of Environmental Chemistry, Environmental Toxicology, Ecology and Fish Ecology.



Figure 18: On left: Cornelia Kienle and Petra Kunz checking on results of the *in vitro* assay, Yeast Estrogen Screen (YES). On right: Set-up of a assay with *Gammarus fossarum*.

The ecotoxicity of building materials is an emerging area of research. In 2014, the project “Steel Construction Coatings and their Ecotoxicity” was carried out in collaboration with Hochschule für Technik Rapperswil, Institut für Umwelt und Verfahrenstechnik. After the previous year’s project on biocide containing facade renders and ecotoxicity of stormwater runoff, this is another successful collaboration between industrial producers of building materials, academic researchers, the Ecotox Centre and BAFU. Its results will provide important information on the ecotoxicological implications of leaching substances from steel coatings used to prevent corrosion, and thus contribute to the production and use of more environmentally friendly building materials.

The Ecotox Centre is actively involved in the ISO standardization of selected aquatic bioassays. This involves laboratory experiments for their optimization, participation in international ring tests and in expert groups. It also transferred its technical knowledge on these tests by training university researchers, and assisted with the development of a test kit for the Yeast Estrogen Screen (YES) und des Yeast Androgen Screen (YAS) by a private company (Xenometrix AG, Allschwil, CH).

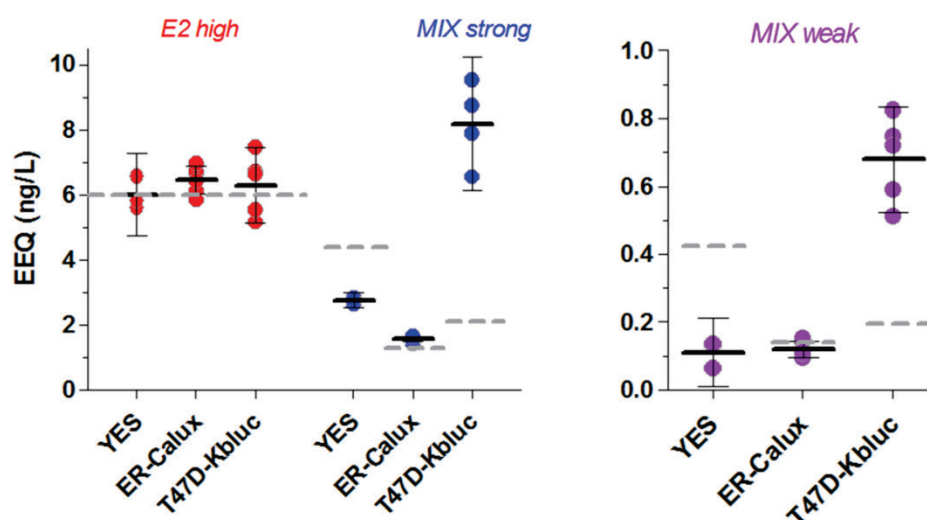


Figure 19: Comparison and variability of three different *in vitro* bioassays for measuring estrogenic activity in water samples.



Modern molecular techniques offer new opportunities for monitoring pollutant impacts in exposed organisms. Initiated by the Ecotox Centre in 2013, the project “Molekulare Biomarker für Untersuchungen an der heimischen Bachforelle” in Canton St. Gallen is aimed at developing molecular tools to measure contaminant effects of wastewater effluent in resident brown trout. This project is a collaboration between the Ecotox Centre, Eawag, Dept. Environmental Toxicology, Univ. of Bern and Canton St. Gallen. Two follow-up projects were recently funded by FOEN and launched in December 2014.

4.1.2 Sediment Ecotoxicology

During 2011-14, all projects conducted in the areas of sediment ecotoxicology were funded internally using base funding. A survey on the current state of sediment quality monitoring in Switzerland (see report and publications by Flück et al.) conducted by the Ecotox Centre demonstrated that a need existed for the development of harmonized monitoring methods for sediments in Switzerland.

As a consequence, a module “Sediments” was developed by the Ecotox Centre and the Federal Office of the Environment (FOEN) in 2014. The 4-year project was approved at the end of 2014 and will be part of the “Modular Stepwise Procedure (Modul-Stufen-Konzept)”. Its goal is to establish a comprehensive methodology for the ecotoxicological evaluation of sediment quality, which will include guidelines for sampling, the development of sediment quality standards as well as the application of bioassays and community indices. In a first phase, work will focus on developing a guideline for sediment sampling and sample treatment for analytical measurements, and the derivation of sediment quality criteria for a number of relevant chemicals.

Other ongoing studies focus on the trophic transfer of priority and emerging compounds by invertebrates and fishes and the bioaccumulation of perfluoroalkyl compounds by invertebrates. In addition, the Ecotox Centre participated in a ring test for the ISO standardisation of the sediment contact test with the macrophyte, *Myriophyllum sp.*, and performed a study to validate a sediment bioassay with ostracods.



Figure 20: Sediment toxicity test with the aquatic plant *Myriophyllum aquaticum* (left) and sediment sampling in the Venoge river, Lausanne (right).

4.1.3 Soil Ecotoxicology

In the area of soil ecotoxicology, the Ecotox Centre aims at providing recommendations for soil quality assessment using bioassays. A promising test is the bait lamina test, which can be applied directly in the field. Several internally funded projects have focused on testing and validating this test method in agricultural areas and shooting ranges. In 2014, a master's thesis was performed to quantify the influence of soil humidity on data generated by this test.



Two soil bioassays, a reproduction test with collembolids, and a behavioral test with earthworms, were applied within the project „Ökotoxizität von Fassadenablaufwasser“. In addition, another ongoing project funded by FOEN investigates the effects of wood preservatives on soil organisms. This project is being performed in collaboration with Berner Fachhochschule.

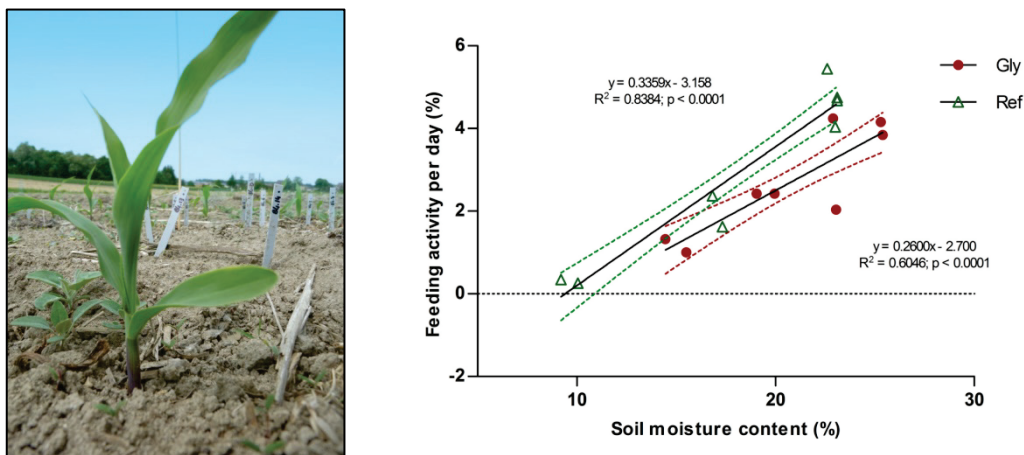


Figure 21: On left: Bait lamina tests are used at a field site in canton Berne to test if the herbicide glyphosate impacts the activity of soil organisms. On right: Relationship between soil moisture content and feeding activity of soil organisms exposed to glyphosate (red dots) in comparison to the reference site (green triangles).

4.1.4 Hazard and Risk Assessment

Risk assessment projects focused primarily on the derivation of substance-specific environmental quality criteria for a list of micropollutants relevant for Switzerland, and their application in Switzerland-wide risk assessments. The Ecotox Centre was a major collaborator of the FOEN in the selection of relevant compounds, and responsible for the derivation of effect-based environmental quality criteria according to EU guidelines. Currently, a list of EQS for 70 compounds is available on the Ecotox Centre website, and a database was created containing international water quality criteria.

Methods for modeling and evaluating predicted concentrations of wastewater treatment effluent associated compounds were developed in collaboration with Envilab AG (Zofingen, AG). They were later applied in several German states (Nordrhein-Westfalen, Baden-Württemberg) as well as in Lake Geneva (in collaboration with the Commission Internationale pour la Protection des Eaux du Léman, CIPEL). A recent project funded by FOEN focused on reviewing existing Swiss data for the new EU priority pollutants, as well as a risk evaluation and recommendations for monitoring of these substances in Switzerland.

One of the focus areas of activities at the Ecotox Centre is the risk assessment of chemical mixtures. In collaboration with Dow Chemical Company (USA), Chris Watts Associates und WCA Environment Ltd. (both UK), Dow Europe GmbH, and the University of Lausanne, the Ecotox Centre developed advanced concepts and methods for assessing mixture toxicity in surface waters (see publications by Junghans et al.). These approaches were applied and validated in several case studies. The methods developed were readily adopted by several Swiss cantons (Berne, Zurich).

The Ecotox Centre also participated and actively contributed to international working groups focused on hazard and risk assessment of chemicals. One such effort led to its involvement in a European Commission report on “effect-based tools for water quality monitoring”; another led to the development of a new evaluation system for reliability and relevance assessments of study



reports and peer-reviewed literature for hazard and risk assessment. Collaborators were from Univ. Stockholm (S), RIVM (NL), the Ecotox Centre and Eawag. The goals of the new method are to increase the consistency of hazard and risk assessments and at the same time improve the quality of scientific publications. It is being readily accepted and implemented by international regulatory bodies such as the European Commission. A ring test to compare the new method (Criteria for Reporting and Evaluating ecotoxicity Data, CRED) involved 75 environmental risk assessors from 12 countries and 35 institutions representing a variety of stakeholders such as regulatory agencies, industry and academia. Results have been widely distributed via expert networks such as the SETAC Global Ecological Risk Assessment Advisory Group. In addition, the method is likely to be included in the revised version of the European guidelines for the derivation of water quality criteria.

4.1.5 Environmental Chemistry

Activities carried out in this area of expertise were dominantly project-related analytical chemistry (heavy metals, estrogens) on soil or water samples. Most work focused on analytical chemistry of estrogens, which is not routinely performed by commercial laboratories.

Additional studies were performed on the application and validation of passive samplers. These were carried out within the NORMAN group (estrogens) or in collaboration with RECETOX, Czech Republic (perfluorated substances) and Empa (PCBs).

4.2 Project Evaluations

Starting in 2012, project evaluation sheets were sent to sponsors upon finalization of externally funded projects. Since then 10 forms were completed and returned. The results show a high degree of satisfaction with project management and execution at the Ecotox Centre. All evaluations rated the performance of the Ecotox Centre in all aspects as either good (4) or very good (5), with the exception of one “satisfactory” rating on consulting and information flow during project design and preparation. Between 64-88% of ratings fell into category 5 (very good), and 7-36% fell into category 4 (good).

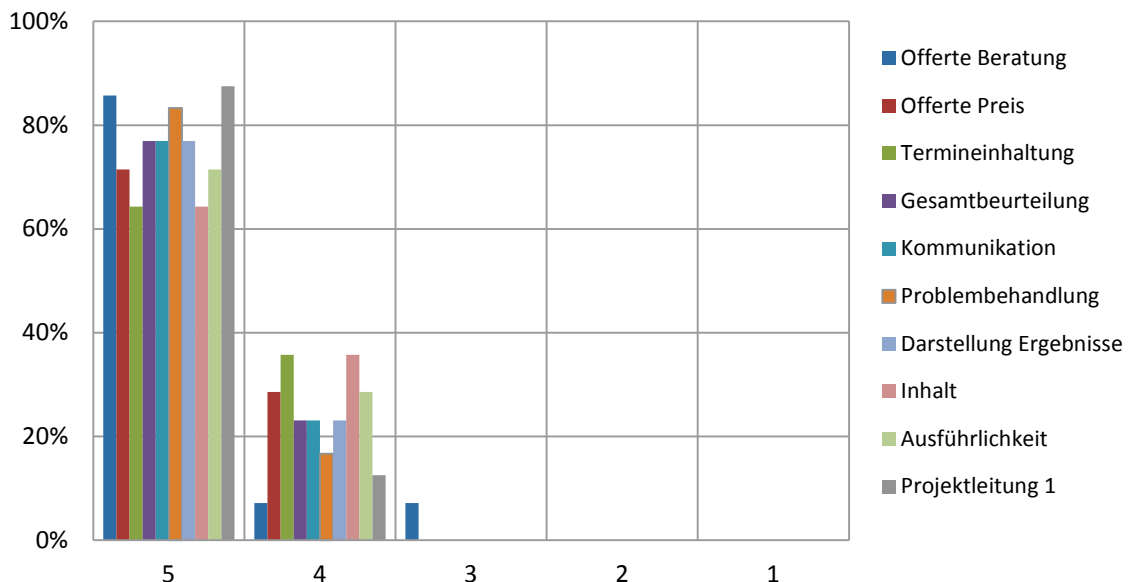


Figure 22: Customer evaluation results for projects finalized in 2012-2014. 5=very good, 4=good, 3=satisfactory, 2=not satisfactory, 1=inacceptable; Offerte Beratung=offer-consulting; Offerte Preis=offer-budget; Termineinhaltung=deadlines met; Gesamtbeurteilung=overall quality of the project; Kommunikation=communication; Problembehandlung=handling of problems; Darstellung Ergebnisse=report-presentation of results; Inhalt=report-content; Ausführlichkeit=report-description and interpretation of results; Projektleitung=project management.



5 Membership in Professional Organisations, Boards and Working Groups

Members of the Ecotox Centre actively participated in numerous national as well as international working groups. In addition, the number of its partners in private industry, government agencies and academic institutions grew continuously.

By 2014, the Ecotox Centre was represented in 8 national and 17 international working groups or advisory boards (Table 6). The Ecotox Centre was the *National Coordinator in the OECD test guideline programme*, and a member in the *OECD Endocrine Disrupter Testing and Assessment Advisory Group* and the *Expert Advisory Group on Endocrine Disruptors* of the EU Commission. Its team members serve in the *Arbeitsgruppe Vollzug Bodenbiologie (VBB) Schweiz der Kantonalen Bodenschutzfachstellen und des BAFU* (board of directors), the *Bodenkundliche Gesellschaft der Schweiz*, and *Sednet* (European Sediment Network). It also continues to contribute to EU working groups on risk assessment (*EU WFD-CIS Sub-Group E, EU Multilateral Group*) and actively participates in several ISO standardization efforts for bioassays. Other important activities include the Centre's membership in NORMAN, and on the Science Advisory Panels of CIPEL, the EU project *RADAR: Rationally Designed Aquatic Receptors integrated in label-free biosensor platforms for remote surveillance of toxins and pollutants*, and *gaiac*, the *Forschungsinstitut für Ökosystemanalyse und -bewertung e.V.* at RWTH Aachen, Germany.

Table 6: List of working groups, boards and professional organisations where the Ecotox Centre is represented

Organisation / Working Group	Task / Function	Team Member
Switzerland		
Arbeitsgruppe Vollzug Bodenbiologie (VBB) Schweiz der Kantonalen Bodenschutzfachstellen und des Bundesamts für Umwelt (BAFU)	Member - Board of Directors	S. Campiche
BGS-SSP: Bodenkundliche Gesellschaft der Schweiz - Société Suisse de Pédologie; Comité	Member	S. Campiche
Verband Schweizer Abwasser- und Gewässerschutzfachleute (VSA)	Member, CC Gewässer	I. Werner
Centre for Xenobiotic Risk Research (XeRR)	Member	N/A
Swiss Society of Toxicology	Member	N/A
Sustainable Engineering Network Switzerland - Plattform Spurenstoffe	Member	C. Kienle
Commission internationale pour la protection des eaux du Léman (CIPEL)	Member, Scientific Advisory Board	B. Ferrari
Eurotox 2013, Interlaken	Local Organizing Committee, Session Chair	I. Werner
Micropoll Ecohazard Conference 2013, Zürich	Organizing Committee	I. Werner



Organisation / Working Group	Task / Function	Team Member
SETAC EU Annual Meeting 2014, Basel	Member, Organizing Committee	I. Werner
SETAC German Language Branch Annual Meeting 2015, Zürich	Conference Chair, Organizing Committee	I. Werner, B. Bracken, A. Schäfer, C. Kienle, M. Junghans
EU project: RADAR (coord. by Swiss Center for Electronics and Microtechnology, Chur)	Scientific Advisor	I. Werner

International	Task / Function	Team Member
DIN AK Hormonelle Wirkungen (D)	Member	P. Kunz
DIN AK Biotests (D)	Member	C. Kienle
DIN-ISO Working group: Key issues in ecotoxicity	Member	E. Vermeirssen
OECD Testrichtlinienprogramm	Swiss National Coordinator Ecotoxicology	P. Kunz
OECD, Endocrine Disrupter Testing and Assessment Advisory Group	Member	P. Kunz
OECD Working Group "Earthworm Field Testing"	Member	S. Campiche
EU Working Group Chemicals - Subgroup E	Member, Science Policy Interface Research Correspondent	R. Kase
EU Multilateral Group	Member	R. Kase, M. Junghans
EU Commission – Endocrine Disruptor Expert Group	Member	P. Kunz
SETAC Global Pharmaceutical Advisory Group	Member	R. Kase
SETAC Global Soils Advisory Group	Member	S. Campiche
SETAC German Language Branch	Member - Board of Directors, President, Past-President	I. Werner
Environmental Science Europe	Advisory Board	I. Werner
Deutsche Forschungsgemeinschaft, D	Reviewer	I. Werner
Gaiac Aachen, D	Advisory Board	I. Werner
SedNet: European sediment network	Member	C. Casado
Innovative Medicine Initiative (IMI) "Eco-risk-prediction of Pharmaceuticals"	Member, Scientific Advisory Board	R. Kase
ECHA Endocrine Disruptor Expert Group	Member	P. Kunz



6 Balance of activities

Since 2012, time spent on activities in the Ecotox Centre's focal areas of expertise have been recorded (Figure 16). During the entire period 2012-14, about 42% of time was spent on bioassay related topics, while 19% and 6% were devoted to risk assessment and environmental chemistry, respectively. About 14 % of staff time were used for training and education activities, and 9% on administration.

The distribution of work time remained similar across the three years it was recorded for. In 2012, approximately 45% of work time was spent on activities related to the development, validation and standardization of bioassays, 21% on activities in the area of environmental hazard and risk assessment, and 9% on environmental chemistry. Further education, outreach and information (including production of fact sheets, Ecotox Centre News and consulting) required about 25% of the entire work time, and approximately 9% was spent on the administration of the Ecotox Centre.

A similar pattern emerged for 2013 and 2014. In 2013, about 48% of work time was spent on bioassay related activities, 19% on environmental hazard and risk assessment, and 6% on environmental chemistry. Outreach and information required 16% of time, and Centre administration 9%. In 2014, the percentage of time spent on bioassay related activities increased to 56%, explained by the increase in laboratory personnel who primarily works on aquatic bioassays. As a result, the percentage of work time devoted to hazard and risk assessment, where staff size remained the same, decreased to 13%. The percentage of time spent on activities in environmental chemistry decreased to 3%, due to a reduction in staff in this area. Only about 11% of total work time was devoted to further education, training, outreach and information, and 10% to Centre administration.

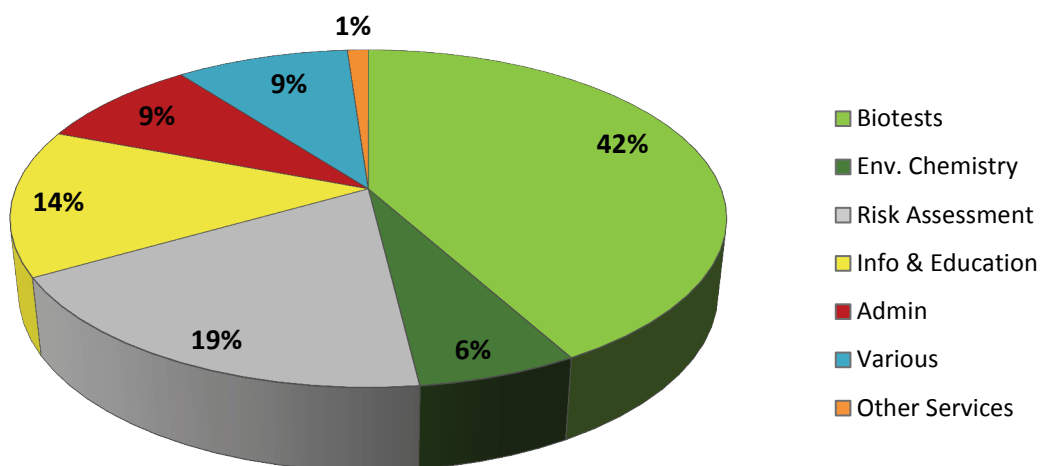


Figure 23: Percentage of total work time spent on different areas of activities at the Ecotox Centre for the period 2012-14.



7 Organization and Management

7.1 Organization

7.1.1 Organizational Structure within the ETH Domain

The Ecotox Centre is an independent institution embedded in the ETH domain, and associated with the Eawag and EPFL. It is administratively tied and annually reports to Eawag (figure X). Eawag in turn reports on the Ecotox Centre to the ETH Council. The Centre's Directorate consists of two representatives from Eawag (Rik Eggen) and EPFL (Christof Holliger), and the Centre Director (Inge Werner). The Strategic Guidance Committee is involved in the development of strategic plans and approves large projects (>200k CHF). The Advisory Group is in charge of conducting the Centre's regular evaluation and provides a network of and input from stakeholders. Function and tasks of the Directorate, Strategic Guidance Committee and Advisory Group are described in detail in the Business Plan, which was updated in 2014.

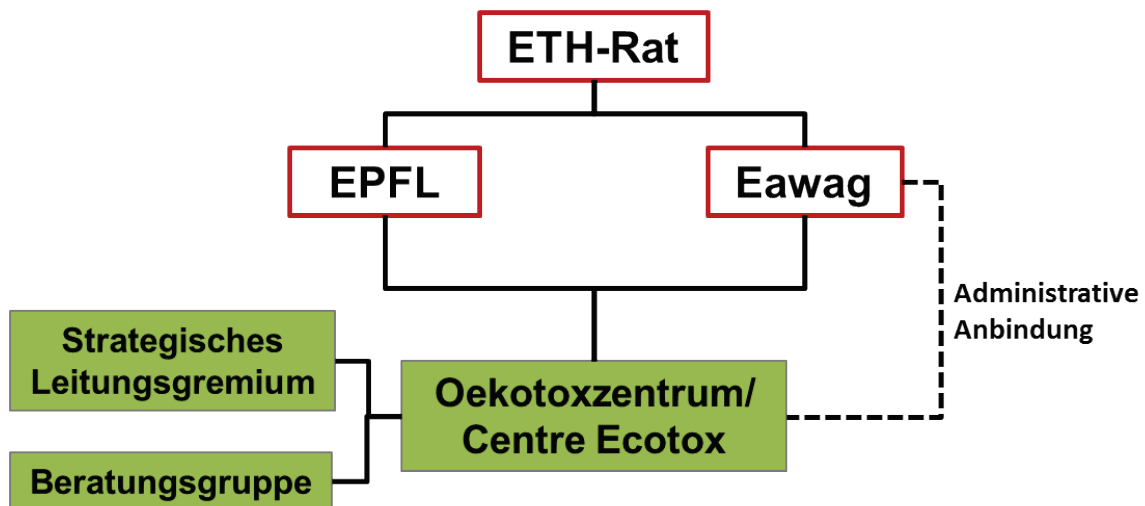


Figure 24: Organizational structure of the Ecotox Centre within the ETH domain.

7.1.2 Organisational Structure of the Ecotox Centre

In January 2011, the organizational structure of the Ecotox Centre was flat with no intermediary level of management between the director and staff. With two separate groups in Dübendorf and Lausanne this posed a significant challenge with regard to communication flow, quality control and project management, especially since most Ecotox Centre scientific staff had no or little postdoctoral research experience at the time (Figure 25: page 25).

In the following years, a more hierarchical organization was established. In the fall of 2011, a group leader (based in Dübendorf) was hired. He supervised the soil and sediment ecotoxicology group in Lausanne and later the aquatic ecotoxicology group in Dübendorf, after a second group leader (based in Lausanne) was hired in the fall of 2013.

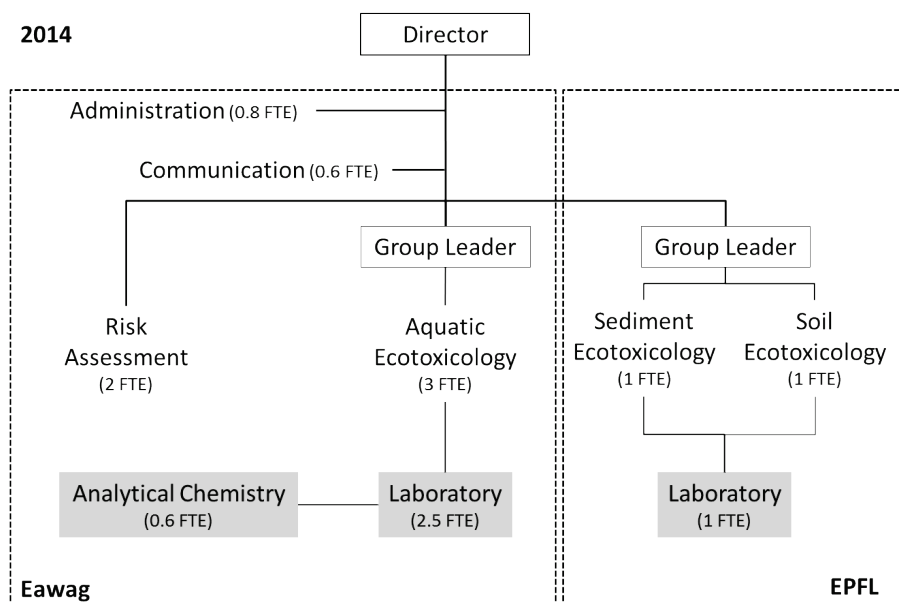
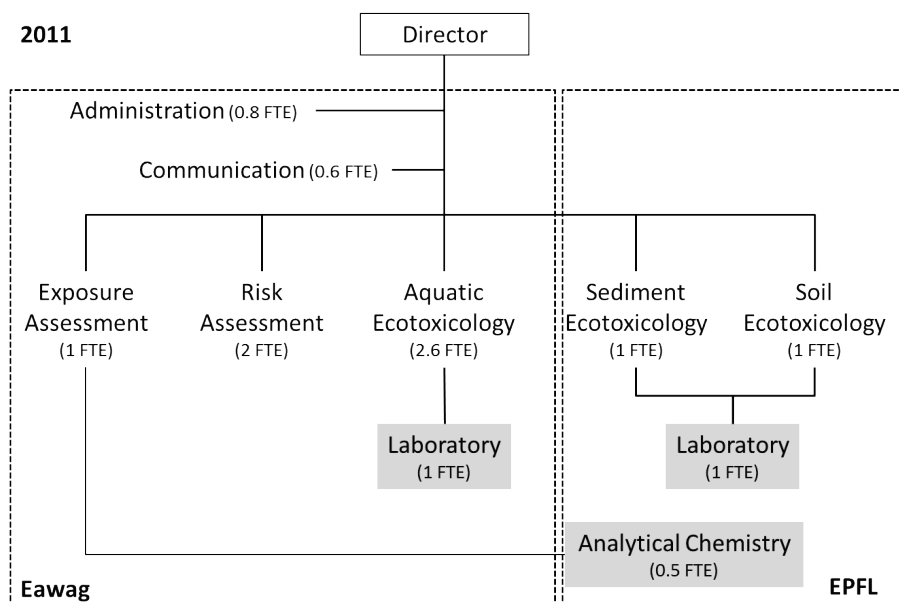


Figure 25: Organisation of the Ecotox Centre in January 2011 and December 2014; FTE= Fulltime Employment.

7.2 Personnel

Changes in personnel since January 2011 were primarily driven by the needs for the successful completion of projects carried out at the Ecotox Centre as well as strategic planning decisions. In addition to the organizational changes described above (group leaders), two scientific assistants in sediment and aquatic ecotoxicology were replaced by PhD level scientists in 2011 and 2012. Personnel in the area of exposure assessment/analytical chemistry was reduced from a full-time scientist and a part-time technician in 2011, to one part-time technician based in Dübendorf (2014). Technical personnel in the area of aquatic ecotoxicology was expanded from 1 to 2.5 positions (including 1 temporary position). In addition, a senior scientist (group leader) and a project related scientific assistant were hired in 2011 and 2013, respectively (Tables 7-9).



Personnel in the area of sediment ecotoxicology was expanded by one full time scientist position. Temporary scientific assistants were hired for projects conducted in the area of hazard assessment in 2012 and 2013.

From 2013 on, the Ecotox Centre's base funding was integrated into the Eawag budget (earmarked), which ensured long-term funding of the Centre and made it possible to create permanent staff positions. In 2013 and 2014, the majority of staff were thus transitioned to permanent or tenure-track positions. As of December 2014, there were 7 permanent (5.9 FTE) and five tenure-track (5 FTE) staff. In addition, two scientists (1.8 FTE; soil and aquatic ecotoxicology, one scientific assistant (1 FTE, aquatic ecotoxicology) and two technicians (1.6 FTE, aquatic ecotoxicology, analytical chemistry) are currently employed on a temporary basis.

Table 7: Personnel development (in full time employment, FTE, units) based on area of expertise

FTE (Fulltime Employment)	2011	2012	2013	2014
Communication	0.6	0.6	0.6	0.6
Ecotoxicology				
- Aquatic	3.6	4.4	5.4	6.3
- Soil	1.5	1.5	1.5	1.5
- Sediment	1.3	1.5	2.5	2.5
Risk Assessment	2.0	3.0	3.0	2.0
Exposure Assessment/Analyt. Chemistry	1.5	1.5	1.0	0.6
Administration	1.8	1.8	1.8	1.8
Total	12.3	14.3	15.8	15.3

Table 8: Personnel development based on function (as FTE)

	2011	2012	2013	2014
Director	1.0	1.0	1.0	1.0
Administrative Assistant	0.8	0.8	0.8	0.8
Scientist - Communication	0.6	0.6	0.6	0.6
Senior Scientists (Group Leaders)	0.0	1.0	2.0	2.0
Scientists	1.8	6.8	6.4	6.3
Postdoctoral Scientists	4.0	0.0	0.0	0.0
Scientific Assistants	1.6	1.6	1.0	1.0
Technical Assistants	2.5	2.5	4.0	3.6
Total	12.3	14.3	15.8	15.3

Table 9: Personnel development based on funding source (as FTE)

	2011^b	2012^b	2013	2014
Base funding (permanent)	11	11	10.9	10.9
Extramural funding (temporary)	1.3	3.3	4.9	4.4

^b approximate values

7.3 Management

7.3.1 Structures

Since 2011, management structures have continuously been established and improved in order to make procedures for project management, reporting and quality control more efficient and



consistent. Reports and publications are now subject to strict quality control within the group. Before new proposals or projects are initiated, capacity and thematic suitability are discussed with the director and directorate.

Since the Ecotox Centre has a somewhat unique position within the Eawag structures, numerous procedures had to be adapted to its needs (e.g. accounting, tenure-track procedure). A personnel plan was developed and approved by the Eawag directorate in 2012/13, and implemented in 2013/14.

7.3.2 Strategy

An implementation plan covering the period 2012-16 was developed in 2011-12 by the Ecotox Centre Directorate and approved by the Strategic Guidance Committee.

7.3.3 Budget

Budgets for 2011-14 are provided in Table 10, including projections for the next few years. From 2008 to 2012, the Ecotox Centre received 2 Mio CHF in Federal funds annually, with the exception of 2011 when the Federal Government cut ETH funds across all institutions. Starting in 2013, the funds were integrated into the Eawag budget. Since then, the Centre's annual budget has been adapted annually according to Eawag's budget. Reserves were formed during the first few years of the Centre's operation, however, at current staff levels and without extramural funding, these would be used up within the next three years (by 2018).

Extramural funds (Table 11) received varied from year to year and ranged from 254'000 (2014) to 572'000 (2012) CHF per year.

Both Eawag and EPFL receive overhead payments (see table 10, 11) from the Ecotox Centre for providing infrastructure. Eawag receives 20% percent of gross personnel cost (base funding); of this, EPFL receives 15% for personnel located in Lausanne. Approximately 15% overhead is paid on extramural funds to Eawag, of which EPFL receives 5% for projects carried out at Centre Ecotox in Lausanne, and 5% are returned to the Ecotox Centre for project administration.

7.4 Infrastructure

The Ecotox Centre Dübendorf currently occupies 123 m² of office space and 56 m² laboratory space at Eawag. Centre Ecotox in Lausanne occupies 35 m² of office space and 44 m² of laboratory space.

In addition to space, Eawag provides administrative services in accounting and personnel, IT and technical support, support and facilities for Ecotox courses, mail services, and support from the communication department. In addition, some laboratory equipment is shared with Eawag research departments. Besides space, EPFL provides the infrastructure available at the IIE (Institut d'Ingénierie de l'Environnement), where Centre Ecotox is located, as well as IT and technical services, and support from the communications department of EPFL.



Table 10: Annual budgets of Federal funds 2011-14 and projections until 2017.

in 1000 Fr.	2011	2012	2013	2014	2015	2016	2017
Einnahmen							
Bundesmittel ³⁾	1940	2000	2042	2117	2181	2235	2291
Zusatzgeld Lehre			2	2			
Zusatzgeld Peak-Mittel				16			
Total Einnahmen Erstmittel	1940	2000	2044	2135	2181	2235	2291
Ausgaben							
Personalkosten EAWAG ²⁾	1040	1012	1212	1095	1432	1558	1635
Personalkosten EPFL ²⁾	300	390	378	370	462	433	455
Personal Rückverg. Mutterschaft				-29			
Infrastrukturabgabe Eawag/EPFL, Rest Vorjahr)				150			
Infrastrukturabgabe Eawag/EPFL ¹⁾	256	280	168	287	379	398	418
Weiterbildung Personal	0	8		12	13	14	14
Dienstleistungen und Honorare	43	41		51	50	50	50
Geräte > 5000.--	3	50		30	31	33	34
restliche Sachaufwand	154	95	130	89	93	98	103
Kredit EPFL	40	40	40	20	20	40	40
Dienstleistungen aus Reserve ... (004)				11	250	250	250
Total Ausgaben	1837	1916	1888	2085	2730	2874	3000
Saldo Erstmittel	104	84	156	50	-549	-639	-709
Saldo aus Vorjahr Erstmittel	2131	2328	2444	2443	2493	1944	1305
Total Reserve Erstmittel	2235	2412	2600	2493	1944	1305	596



Table 11: Annual budgets of extramural funds 2012-14.

in 1000 Fr.	2012	2013	2014	2015	2016	2017
Einnahmen Drittmittel						
Drittmittel	572	500	254			
Ausgaben Drittmittel						
Infrastrukturabgabe Eawag/EPFL ⁴⁾	61	32	28			
Infrastrukturabgabe Eawag/EPFL Rückfluss		-10	-10			
Personalkosten EAWAG	487	241	240			
Sachkosten	70	259	81			
Total Ausgaben	618	522	339			
Saldo Drittmittel	-46	-22	-85			
Saldo Drittmittel aus Vorjahr	327	281	278			
Total Reserve Drittmittel	281	259	193			
Total Personalkosten Erst- und Drittmittel	1889	1831	1705	1894	1991	2091
¹⁾ Infrastruktur- und Administrationsabgabe: 20% auf Personalkosten						
²⁾ Schätzung (inkl. Teuerung von 5%)						
³⁾ Schätzung (inkl. Teuerung von 2%)						
⁴⁾ Infrastruktur- und Administrationsabgabe: 16.7% auf Einnahmen, ab 2013 nur noch 13.05 %, davon gehen 4.35% wieder an OZ zurück						



8 Achievements and Outlook

The Ecotox Centre was founded in 2008 by request of the Federal Council and Parliament. Basis and point of reference for the development and structure of the Ecotox Centre is the "Report of the Federal Council on independent toxicology research in Switzerland" of 2007. The Centre's mission is to conduct applied research in the areas of aquatic and terrestrial ecotoxicology, and to provide further education and consulting services to stakeholders.

Nationally as well as internationally, the Ecotox Centre is now recognized as the Swiss competence center for applied, practice-oriented ecotoxicology. It has been instrumental in the development of effect-based water quality criteria for a number of environmentally relevant chemicals in Switzerland. Such criteria are planned to be considered in the revised Swiss Waters Protection Ordinance in the near future. The Ecotox Centre also played an important role in the ecotoxicological evaluation of wastewater effluents and advanced treatment technologies to reduce water pollution with micropollutants. It contributed to the scientific evidence, on which the new regulation for wastewater treatment in Switzerland was approved in 2013 by the Swiss legislation. In addition, it developed an evaluation concept for the routine assessment of water quality based on bioassays as part of the Swiss Modul-Stufen-Konzept.

More recently, the Ecotox Centre took a leading role in international efforts to develop a new evaluation method for the evaluation of the reliability and relevance of ecotoxicological publications for risk assessment. A series of publications is in preparation, while at the same time the method is already being included in the revised version of the European guidelines for the derivation of water quality criteria. This activity is anticipated to have a strong impact on the risk assessment community.

Concepts for the environmental risk assessment of chemical mixtures have been developed by the Centre in collaboration with international experts. These approaches are already being applied by cantonal environmental agencies.

Initiated by the Ecotox Centre, a module "Sediments" now exists within the Swiss Modul-Stufen-Konzept, in an effort to develop national guidelines for the sampling and environmental quality assessment of sediments in Switzerland. This is done in active exchange within international expert groups (SedNet) and research groups from France, Sweden, Norway and Germany.

The Centre's increasing level of recognition is demonstrated by the high number of consulting requests, as well as the inclusion of Centre staff in national discussions such as the round table and action plan on the use of plant protection products (Bundesamt für Landwirtschaft). Courses offered by the Ecotox Centre are well attended by all stakeholder groups and receive high ratings among participants.

Future perspectives:

Methodologies continue to evolve and developments in technologies offer new opportunities. In an effort to establish molecular biomarkers for an important Swiss fish species, the brown trout, the Ecotox Centre, in collaboration with Eawag and University of Bern, initiated a project in 2013. While a continuation of this project is now funded by the FOEN, the Ecotox Centre will continue to work with research groups on advancing current approaches for evaluating the effects of pollution on resident species in aquatic and terrestrial ecosystems.

Interest in soil ecotoxicology – one of the core areas of activity at the Ecotox Centre - has been increasing in recent years, and the first externally funded project at the Ecotox Centre in this area is currently underway. With 2015 declared the "International Year of Soils" awareness and interest in this area of research are expected to continue to grow.



The occurrence of multiple stressors acting simultaneously on ecosystems pose a yet unresolved obstacle to a comprehensive environmental risk assessment of chemicals. In future years, the Ecotox Centre will focus on developing new approaches to meet this challenge.

The Centre has been and will continue to be active at the so-called Science-Policy Interface, an area that is underfunded and often neglected. Communication of scientific evidence to policy makers is, however, crucial in order to base future management and policy decisions on sound and up-to-date information. The concept of “ecosystem services” may prove useful in this context.

Interest in the application of passive samplers for monitoring the quality of surface waters is great, however, much research is needed to validate these tools before they can be used within regulatory programs. The Ecotox Centre will continue to be active in this area. It recently co-organized a 1-day workshop on passive sampling methods at Eawag.

Last but not least, the Ecotox Centre is currently organizing the annual meeting of SETAC German Language Branch in Zurich. The conference theme is “Ecotoxicology and Environmental Chemistry: From research to practice”. This is the largest conference in the area of ecotoxicology in the German speaking parts of Europe. Bringing this conference to Switzerland will increase the visibility of and awareness for ecotoxicology, and provide an opportunity to the Centre’s Swiss stakeholders to learn about current research in this area.



Annex 1 Publications und Reports

1.1. Publications

1. Estoppey, N., Omlin, J., Schopfer, A., Esseiva, P., Vermeirssen, E.L.M., Delémont, O., De Alencastro, L.F. (2015) Low density polyethylene (LDPE) passive samplers for the investigation of polychlorinated biphenyl (PCB) point sources in rivers. *Chemosphere* 118, 268–276
2. Bertin D., Ferrari B.J.D., Labadie P., Sapin A., Garric G., Budzinski H., Houde M., Babut M. (2014). Bioaccumulation of perfluoroalkyl compounds in midge (*Chironomus riparius*) larvae exposed to sediment. *Environmental Pollution*, 189: 27-34.
3. Carvalho, R. N. et al. (2014) Mixtures of Chemical Pollutants at European Legislation Safety Concentrations: How Safe are They? *Tox. Sci.* 141, 218-233
4. Escher, B.I., Allinson, M., Altenburger, R., Bain, P.A., Balaguer, P., Busch, W., Crago, C., Denslow, N.D., Dopp, E., Hilscherova, K., Humpage, Kumar, A., Grimaldi, M., Jayasinghe, B.S., Jarosova, B., Jia, A., Makarov, S., Maruya, K.A., Medvedev, A., Mehinto, A.C., Mendez, J.E., Anita Poulsen, †, Prochazka, E., Richard, J., Schifferli, A., Schlenk, D., Scholz, S., Shiraishi, F., Snyder, S., Su, G., Tang, J.Y.N., van der Burg, B., van der Linden, S.C., Werner, I., Westerheide, S.D., Wong, C.K.C., Yang, M., Yeung, B.H.Y., Zhang, X., Leusch, F.D.L. (2014) Benchmarking organic micropollutants in wastewater, recycled water and drinking water with in vitro bioassays. *Environ. Sci. Technol* 48, 1940-1956
5. Estoppey, N., Schopfer, A., Omlin, J., Esseiva, P., Vermeirssen, E.L.M., Delémont, O., De Alencastro, L.F. (2014) Effect of water velocity on the uptake of polychlorinated biphenyls (PCBs) by silicone rubber (SR) and low-density polyethylene (LDPE) passive samplers: An assessment of the efficiency of performance reference compounds (PRCs) in river-like flow conditions. *Sci. Tot. Environ.* 499, 319–326
6. Feiler, U. et al. (2014) Inter-laboratory trial of a standardized sediment contact test with the aquatic plant *Myriophyllum aquaticum* (ISO 16191). *Environ. Toxicol. Chem.* 33(3):662-70
7. Fernandez, D., Vermeirssen, E.L.M., Bandow, N., Muno, K., Schäfer, R.B. (2014) Calibration and field application of passive sampling for episodic exposure to polar organic pesticides in streams. *Environ. Poll.* 194 196-202
8. Flück, R.; Casado-Martinez, C., Campiche S., Ferrari, B., Werner, I., De Alencastro, L.F.; Rossi, L., Santiago, S., Chèvre, N. (2014) Retour sur l'article : « Surveillance de la qualité des sédiments » *Aqua & Gas* 06, 70-71
9. Hasenbein, M., Werner, I., Deanovic, L.A., Geism, J., Fritsch, E.B., Javidmehr, A., Foe, C., Fangué, N.A., Connon, R.E. (2014) Transcriptomic profiling permits the identification of pollutant sources and effects in ambient water samples. *Science of the Total Environment* 468–469 688–698
10. Homazava, N., Gachet Aquillon, C., Vermeirssen, E., Werner, I. (2014) Simultaneous multi-residue pesticide analysis in soil samples with ultra-high-performance liquid chromatography–tandem mass spectrometry using QuEChERS and pressurised liquid extraction methods. *International Journal of Environmental Analytical Chemistry* 94, 1085-1099
11. Kaserzon, S.L., Hawker, D.W., Booij, K., O'Brien, D.S., Kennedy, K., Vermeirssen, E.L.M., Mueller, J.F. (2014) Passive sampling of perfluorinated chemicals in water: In-situ calibration. *Environ. Pollut.*, 186, 98-103
12. Künniger, T., Gerecke, A.C., Ulrich, A., Hucha, A., Vonbank, R., Heeba, M., Wichser, A., Haaga, R., Kunz, P., Faller, M. (2014) Release and environmental impact of silver nanoparticles and conventional organic biocides from coated wooden façades. *Environmental Pollution*, 184, 464–471
13. Kunz, P.Y., Kienle, C., Carere, M., Homazava, N., Kase, R. (2014) In vitro bioassays to screen for endocrine active pharmaceuticals in surface and waste waters. *Journal of Pharmaceutical and Biomedical Analysis* doi: 10.1016/j.jpba.2014.11.018



14. Moschet, C., Vermeirssen, E.L.M., Seiz, R., Pfefferli, H., Hollender, J. (2014) Picogram per liter detections of pyrethroids and organophosphates in surface waters using passive sampling. *Water Research* 66, 411-422
15. Moschet, C., Wittmer, I., Simovic, J., Junghans, M., Piazzoli, A., Singer, H., Stamm, C., Leu, C., Hollender, J. (2014) How a Complete Pesticide Screening Changes the Assessment of Surface Water Quality. *Environmental Science & Technology*, 48, 5423–5432
16. Wittmer, I., Moschet, C., Simovic, J., Singer, H., Stamm, C., Hollender, J., Junghans, M., Leu, C. (2014) Über 100 Pestizide in Fließgewässern; Programm NAWA Spez zeigt die hohe Pestizidbelastung der Schweizer Fließgewässer auf. *Aqua & Gas* 3, 32-43
17. Wittmer, I., Moschet, C., Simovic, J., Singer, H., Stamm, C., Hollender, J., Junghans, M., Leu, C. (2014) Plus de 100 pesticides dans les cours d'eau. *Aqua & Gas*, 11, 68-79
18. Brander, S.M., Connon, R.E., He, G., Hobbs, J.A., Smalling, K.L., The, S.J., White J.W., Werner, I., Denison, M.S., Cherr, G.N. (2013) From 'Omics to Otoliths: Responses of an Estuarine Fish to Endocrine Disrupting Compounds across Biological Scales. *PLOS ONE* 8 (9) e74251
19. Casado-Martinez, M.C; Smith, B.D.; Rainbow, P.S. (2013) Assessing metal bioaccumulation from estuarine sediments: Comparative experimental results for the polychaete *Arenicola marina*. *J. Soils Sediments*, 13, 429-440
20. Deanovic, L.A., Markiewicz, D., Stillway, M., Fong, S., Werner, I. (2013) Comparing the effectiveness of chronic water column tests with the crustaceans *Hyaella azteca* (order: amphipoda) and *Ceriodaphnia dubia* (order: Cladocera) in detecting toxicity of current use insecticides. *Environmental Toxicology and Chemistry*, 32 (3), 707–712
21. Fritsch E.B., Connon, R.E., Werner, I., Davies, R.E., Beggel, S., Feng, W., Pessah, I.N. (2013) Triclosan Impairs Swimming Behavior and Alters Expression of Excitation-Contraction Coupling Proteins in Fathead Minnow (*Pimephales promelas*) *Environ. Sci. Technol.* 2013, 47, 2008–2017
22. Gregorio V, Chèvre N, Junghans M. (2013) Critical issues in using the common mixture toxicity models concentration addition or response addition on species sensitivity distributions: a theoretical approach. *Environ Toxicol Chem.* 32, 2387-95.
23. Jorgenson B., Fleishman E., Macneale K.H., Schlenk D., Scholz N.L., Spromberg J.A., Werner I., Weston D.P., Xiao Q., Young T.M., Zhang M. (2013) Predicted transport of pyrethroid insecticides from an urban landscape to surface water. *Environ Toxicol Chem.* 32, 2469-2477.
24. Junghans, M., Kunz, P., Werner, I. (2013) Toxizität von Mischungen. Aktuelle, praxisorientierte Ansätze für die Beurteilung von Gewässerproben. *Aqua & Gas*, 05, 54-61
25. Kaserzon, S.L.; Vermeirssen, E.L.M.; Hawker, D.W.; Kennedy, K.; Bentley, C.; Thompson, J.; Booij, K.; Mueller, J.F. (2013) Passive sampling of perfluorinated chemicals in water: Flow rate effects on chemical uptake. *Environmental Pollution*, 177, 58-63
26. Kienle, C., Langer-Jaesrich, M., Baumberger, D., Hohmann, D., Santiago, S., Köhler, H.-R., Zürrer, D., Gerhardt, A. (2013) Integrated toxicity evaluation of a pulp deposit using organisms of different trophic levels. *Journal of Soils and Sediments* 13:1611-1625.
27. Linares-Casenave, J., Werner, I., Van Eenennaam, J.P., and Doroshov, S.I. (2013) Temperature stress induces notochord abnormalities and heat shock proteins expression in larval green sturgeon (*Acipenser medirostris* Ayres 1854) *Journal of Applied Ichthyology* 29, 958–967
28. Margot, J., Kienle, C., Magnet, A., Weil, M., Rossi, L., de Alencastro, L.F., Abegglen, C., Thonney, D., Chèvre, N., Schärer, M., Barry, D.A. (2013) Treatment of micropollutants in municipal wastewater: Ozone or powdered activated carbon? *Science of the Total Environment*, 461-462, 480–498



29. Segner, H.; Casanova-Nakayama, A.; Kase, R.; Tyler, C.R. (2013) Impact of environmental estrogens on fish considering the diversity of estrogen signalling. *Gen. Comp. Endocrinol.*, 191, 190-201
30. Vermeirssen, E.L.M.; Dietschweiler, C.; Escher, B.I.; van der Voet, J.; Hollender, J. (2013) Uptake and release kinetics of 22 polar organic chemicals in the Chemcatcher passive sampler. *Analytical and Bioanalytical Chemistry*, 405, 5225-5236
31. Wagner, M., Vermeirssen, E.L.M., Buchinger, S., Behr, M., Magdeburg, A., Oehlmann, J. (2013) Deriving bio-equivalents from in vitro bioassays: Assessment of existing uncertainties and strategies to improve accuracy and reporting. *Environmental Toxicology & Chemistry*, 32(8), 1906-1917
32. Beggel S, Werner I., Connon R.E., and Geist J. (2012). Impacts of the phenylpyrazole insecticide fipronil on larval fish: Time-series gene transcription responses in fathead minnow (*Pimephales promelas*) following short-term exposure. *Science of the Total Environment* 426:160–165.
33. Brander S.M., Mosser C.M., Geist J.P., Hladik M.L., Werner I. (2012). Esfenvalerate toxicity to the cladoceran *Ceriodaphnia dubia* in the presence of the green algae, *Pseudokirchneriella subcapitata*. *Ecotoxicology* 21:2409–2418
34. Brooks, M.L., Fleishman, E., Brown, L.R., Lehman, P.W., Werner, I., Scholz, N., Mitchellmore, C., Lovvorn, J.R., Johnson, M.L., Schlenk, D., van Drunick, S., Drever, J.I., Stoms, D.M., Parker, A.E., Dugdale, R. (2012) Life histories, salinity zones, and sublethal contributions of contaminants to pelagic fish declines illustrated with a case study of San Francisco Estuary, California, USA. *Estuar. Coasts*, 35, 603-621
35. Brühl, C.A.; Schäfer, R.B.; Mittmann, F.; Stahlschmidt, P.; Bruns, E.; Candolfi, M.; Egeler, P.; Hollert, H.; Kaiser, D.; Mohr, S.; Ratte, T.; Schaumann, G.E.; Schlechtriem, C.; Stock, F.; Scheebaum, M.V.; Von Der Ohe, P.C.; Weltje, L.; Werner, I. (2012) 16th SETAC GLB (Society of Environmental Toxicology and Chemistry German Language Branch) Annual meeting held under the main theme "ecoTOXICOlogy and Environmental CHEMISTRY: Crossing borders" from 18th to 20th September 2011 at Landau. *Env. Sci. Eur.*, 2012, 24:39 (8 pp), Springer
36. Connon R.E., D'Abronzio L.S., Hostetter N.J., Evans A.F., Roby D.D., Thompson D.E., Loge F.J., and Werner I. (2012). Molecular biomarkers in environmental diagnostics: health assessments in Columbia River Steelhead (*Oncorhynchus mykiss*). *Environmental Science and Technology* 46 (11):6081–6087.
37. Connon, R.E., Geist, J., Werner, I. (2012) Effect-based tools for monitoring and predicting the ecotoxicological effects of chemicals in the environment. *Sensors*, 12, 12741-12771
38. Drewes, J., Geist, J., Hegerl, G., Helmig, R., Huber, H., Jekel, M., Keller, J., Kinzelbach, W., Kögel-Knabner, I., Liebl, W., Manhard, M., Mauser, W., Meckenstock, R., Menzel, A., Mok, B., Nießner, R., Rutschmann, R., Schmidt, T., Wegener, J., Werner, I., Wilderer, P. (2012) Integrierter Ansatz zur Wasserforschung und Technologieentwicklung. *Korrespondenz Abwasser, Abfall* 59 (10) 907-911
39. Durieux E.D.H., Connon R.E., Werner I., D'Abronzio L.S., Fitzgerald P.S., Spearow J.L., Ostrach D.J. (2012). Cytochrome P4501A mRNA and protein induction in the striped bass (*Morone saxatilis*). *Fish Physiology and Biochemistry*.
40. Flück, R.; Campiche S., De Alencastro, L.F.; Rossi, L., Ferrari, B.J.D., Santiago, S., Werner, I., Chèvre, N. (2012) Surveillance de la qualité des sédiments en Suisse: État actuel des méthodes disponibles et mise en place de recommandations. *Aqua & Gas* 04, 18-22
41. Harman, C., Allan, I.J., Vermeirssen, E. L. M. (2012). Calibration and use of the polar organic chemical integrative sampler. *Environmental Toxicology and Chemistry*, DOI: 10.1002/etc.2011
42. Junghans, M., Kase, R., Chèvre, N. (2012) Qualitätskriterien für Pflanzenschutzmittel. Methode zur Herleitung von Qualitätskriterien für PSM in Schweizer Oberflächengewässern. *Aqua & Gas* 11, 16-22



43. Kienle, C., Kunz, P., Vermeirssen, E., Kase, R., Jordi, A., Schäfer, A., Werner, I. (2012) Hormonaktive Substanzen in Schweizer Abwasser und Gewässern. Mitteilungen der Naturforschenden Gesellschaft in Bern, 69, 37-43
44. Price P., Dhein E., Hamer M., Han X., Heneweer M., Junghans M., Kunz P., Magyar C., Penning H., Rodriguez C. (2012) A decision tree for assessing effects from exposures to multiple substances. *Environmental Sciences Europe* 2012, **24**:26 (4 October 2012)
45. Price, P., Han, X., Junghans, M., Kunz, P., Watts, C., Leverett, D. (2012) An application of a decision tree for assessing effects from exposures to multiple substances to the assessment of human and ecological effects from combined exposures to chemicals observed in surface waters and waste water effluents. *Env. Sci. Eur.*, 24:34
46. Schlenk, D., Lavado, R., Loyo-Rosales, J.E., Jones, W., Maryoung, L., Riar, N., Werner, I., Sedlak, D. (2012) Reconstitution studies of pesticides and surfactants exploring the cause of estrogenic activity observed in surface waters of the San Francisco Bay Delta. *Environ. Sci. Technol.*, 2012, 46, 9106-9111
47. Scholz N.L., Fleishman E., Brown L., Brooks M.L., Mitchelmore C., Werner I., Johnson M.L., Schlenk D. (2012). A perspective on modern pesticides, pelagic fish declines, and unknown ecological resilience in highly managed ecosystems. *BioScience*. 62(4):428-434.
48. Vermeirssen, E. L. M., Dietschweiler, C., Escher, B. I., van der Voet, J., Hollender, J. (2012). Transfer kinetics of polar organic compounds over polyethersulfone membranes in the passive samplers POCIS and Chemcatcher. *Environmental Science and Technology*, 46, 6759-6766.
49. Vermeirssen, E., Hollender, J., Zennegg, M. (2012) Passiv Proben nehmen. *Eawag news*, 2012, 73, 18-22
50. Werner, I., Hitzfeld, B. (2012) 50 years of ecotoxicology since Silent Spring - a review. *GAIA* 21/3, 217-224.
51. Werner, I., Kienle, C., Kunz, P., Vermeirssen, E., Kase, R. (2012) Hormonaktive Stoffe: messen, bewerten, minimieren. *Eawag News* 72, 8-11.
52. Beggel S, Connon R.E., Werner I., and Geist J. (2011). Changes in gene transcription and whole organism responses in larval fathead minnow (*Pimephales promelas*) following short-term exposure to the synthetic pyrethroid bifenthrin. *Aquatic Toxicology* 105:180-188.
53. Bowen L., Kiernan J.D., Eder K., Werner I., Leutenegger C.M., Adkison M.A., Hedrick R.P. 2011. Euthanization methods influence cytokine mRNA expression levels in age 0 year *Oncorhynchus mykiss*. *J. Fish Biology* 79(2):539-545.
54. Brüscheiler, B., Kunz, P. (2011) Hormonaktive Substanzen in abgepacktem Mineralwasser? Bundesamt für Gesundheit, Bulletin 14/11, 311-316
55. Connon R.E., Beggel S., D'Abronzio L.S., Geist J., Loguinov A.S., Vulpe C.D., Werner I. (2011). Molecular biomarkers in endangered species: neuromuscular impairments following sublethal copper exposures in the delta smelt (*Hypomesus transpacificus*). *Environmental Toxicology and Chemistry* 30(2): 290-300.
56. Connon R.E., Deanovic L.A., Fritsch E.B., D'Abronzio L.S. and Werner I. (2011). Sublethal responses to ammonia in the endangered delta smelt; *Hypomesus transpacificus* (Fam. Osmeridae). *Aquatic Toxicology* 105:369- 377.
57. Kase, R., Eggen, R.I.L., Junghans, M., Götz, C., Hollender, J. (2011): Assessment of micropollutants from municipal wastewater - Combination of exposure and ecotoxicological effect data for Switzerland. In: *Waste Water*, García, F.S., Ed., InTech - Open Access Publisher, ISBN 978-953-307-837-3.
58. Kunz, P.Y., Kienle, C., Aicher, L., Junghans, M., Werner, I. (2011) Mischungstoxizität: Bedürfnisse der Praxis. Erkenntnisse aus einem Workshop über Auswirkungen von Chemikalienmischungen auf Umwelt und Mensch und ihre Beurteilung. *gwa/03*, 167-177



59. Moore M.T., Denton D.L., Cooper C.M., Wrynski J., Miller J.L., Werner I., Horner G., Crane D., Holcomb D.B., Huddleston III G.M. (2011). Use of vegetated agricultural drainage ditches to decrease pesticide transport from tomato and alfalfa fields in California. *Environmental Toxicology and Chemistry* 30(5): 1044-1049.

1.2. Reports

1. Wittmer, I., M. Junghans, H. Singer und C. Stamm (2014) Mikroverunreinigungen – Beurteilungskonzept für organische Spurenstoffe aus diffusen Einträgen. Studie im Auftrag des BAFU. Eawag, Dübendorf
2. Wittmer, I., M. Junghans, H. Singer et C. Stamm (2014), Micropolluants – Stratégie d'évaluation pour les micropolluants organiques de sources non ponctuelles. Etude réalisée sur mandat de l'OFEV. Eawag, Dübendorf
3. Wernersson, A.-S. et al. (2014) Technical Report on Aquatic Effect-Based Monitoring Tools Technical Report - 2014 – 077, European Commission, 83 pp.
4. Götz, C., Mettler, S., Vermeirssen, E.L.M. (2013) Modélisation du flux de micropolluants provenant des rejets de l'épuration des eaux usées : Bassins du Léman et du Rhône aval.
5. Homazava, N., Werner, I. (2013) Bioavailability and toxicity of particle-associated plant protection products. Studie im Auftrag des BLW.
6. Kienle, C., Baumberger, D., Schifferli, A., Werner, I., Santiago, S., Weil, M. (2013) Evaluation der Ökotoxizität von Kläranlagenabwasser der ARA Basel mit Biotests vor und nach der Anwendung erweiterter Abwasserbehandlungsmethoden
7. Burkhardt, M, Dietschweiler, C, Campiche, S, Junghans, M, Schifferli, A, Baumberger, D, Kienle, C, Vermeirssen, E, Werner, I (2013): Ecotoxicological Assessment of Immersion Samples from Façade Render
8. Kunz, P., Schifferli, A., Schönenberger, R., Krumscheid, R., Suter, M. und Werner, I. (2013). Thunersee-Felchen Projekt: Untersuchung von Planktonproben auf hormonelle Wirkungen.
9. Junghans, M. und Kunz, P. (2013) Gutachten zur Ökotoxizität der beim Bau des NEAT Tunnels eingesetzten Bauchemikalien und Sprengmittel
10. Götz, C., Ort, C., Singer, H., Kase, R. (2012) Mikroverunreinigungen aus kommunalem Abwasser – Situationsanalyse und Stoffflussmodellierung für Baden-Württemberg.
11. Götz, C., Kase, R., Ort, C., Singer, H., Bergmann, S. (2012) Mikroschadstoffe aus kommunalem Abwasser. Stoffflussmodellierung, Situationsanalyse und Reduktionspotenziale für Nordrhein-Westfalen.
12. Kienle, C., Schifferli, A., Werner, I. (2012) Östrogene Aktivität von Kläranlagenabläufen und Fließgewässern des Kantons St. Gallen.
13. Kienle, C., Kunz, P., Vermeirssen E., Homazava, N., Werner I. (2012): Evaluation von Methoden für den effektbasierten Nachweis von östrogen aktiven Substanzen in Abwasserreinigungsanlagen und Fließgewässern
14. Flück, R. (2012) Qualitätsüberwachung von Sedimenten in der Schweiz. Aktueller Stand der verfügbaren Methoden und Einsetzung von Empfehlungen
15. Kienle, C., Kase, R., Werner, I. (2011) Evaluation of bioassays and wastewater quality - *In vitro* and *in vivo* bioassays for the performance review in the Project "Strategy MicroPoll"
16. Flück R. et al. (2011) Qualitätsüberwachung von Sedimenten in der Schweiz: Zusammenfassung einer Umfrage
17. Junghans, M., Chèvre, N., Di Paolo, C., Eggen, R.I.L., Gälli, R., Gregorio, V., Häner, A., Homazava, N., Perazzolo, C., Kase, R. (2011) Aquatic Risks of Plant Protection Products: A Comparison of Different Hazard Assessment Strategies for Surface Waters in Switzerland



18. McArdell, C.S., Kovalova, L., Siegrist, H., Kienle C., Moser, R., Schwartz, T. (2011) Input and Elimination of Pharmaceuticals and Disinfectants from Hospital Wastewater
19. Götz, C.W., R. Kase und J. Hollender (2011). Micropolluants. Etude réalisée sur mandat de l'Office fédéral de l'environnement (OFEV). Schéma d'évaluation de la qualité des eaux au vu des composés traces organiques issus de l'assainissement communal
20. Götz, C., Hollender, J., Kase, R. (1/2011) Mikroverunreinigungen - Beurteilungskonzept für organische Spurenstoffe aus kommunalem Abwasser



Annex 2 Media Reports and Outreach

2.1. Newspapers and Newsletters

- Tierwelt, 25.9.2014 Pillen und Pestizide schaden Flüssen
- Tages-Anzeiger, 6.3.2014: Reichhaltiger Pestizid-Cocktail in den Schweizer Flüssen
- Tages-Anzeiger, 5.3.2014. Teurer Klärungsbedarf
- ChemicalWatch, Global Business briefing, October 2013: Questioning the Klimisch criteria: A new check list system promises to improve the consistency and transparency of Klimisch criteria results
- Le Temps, 17 mai 2013: La pollution aux terres rares gagne l'Europe.
- Eawag Jahresbericht 2012: Cornelia Kienle: Einsatz für bessere Biotests
- Eawag Jahresbericht 2012: Die Mischung macht die Toxizität
- Umweltperspektiven 3/2012: Eawag arbeitet mit Biotests (In: Novum mit Bachflohkrebs)
- Neue Zürcher Zeitung, 18.7.2012: Arzneimittel in Gewässern minimieren, <http://www.nzz.ch/wissen/wissenschaft/arzneimittel-in-gewaessern-minimieren-1.17368069>
- Umweltjournal Juni 2012: Wasser stellt Ansprüche
- Eawag Jahresbericht 2011: Welcher Grenzwert für Pestizide? Und Lehren: Petra Kunz: Wissen in die Praxis bringen
- Umwelttechnik Schweiz 3/11: Ich kann etwas bewegen
- Tages-Anzeiger 16. März 2011: Kläranlagen lassen Giftstoffe durch, Nachrüstung ist nötig <http://www.tagesanzeiger.ch/wissen/technik/Klaeranlagen-lassen-Giftstoffe-durch-Nachruistung-ist-noetig-/story/18905659>

2.2. Radio/TV

RTS, Les micropolluants ont des effets inquiétants sur la faune et la flore de Suisse, 21. 7. 2014 <http://www.rts.ch/video/info/journal-19h30/6018455-les-micropolluants-ont-des-effets-inquietants-sur-la-faune-et-la-flore-de-suisse.html>

Deutschlandfunk, Schutz vor Algen und Pilzen wirkt auch im Grundwasser, 16. 5. 2014 http://www.deutschlandfunk.de/fassadenfarben-schutz-vor-algen-und-pilzen-wirkt-auch-im..676.de.html?dram:article_id=285625

SRF 1, Treffpunkt: Wohin das Abwasser fließt, 17. 3. 2014 <http://www.srf.ch/sendungen/treffpunkt/wohin-das-abwasser-fliesst>

Radio 24, Die Schweizer Flüsse sind nicht so sauber wie bisher angenommen, 5. 3. 2014

Top Online (Radio): Pestizid-Cocktail in Schweizer Flüssen nachgewiesen, 5. 3. 2014 <http://www.toponline.ch/schweiz/detail/art/pestizid-cocktail-in-schweizer-fluessen-nachgewiesen-001663266/>

SRF4 News, Interview über das neue Gewässerschutzgesetz, 4. 3. 2014
Q:\Abteilungsprojekte\Oekotoxzentrum\12_Communication_Fotos\Medien\140304_Gewässerschutz_MVs.mp3

Interview mit Züriplus zum Thema Mikroverunreinigungen in Kläranlagen, 12.5.2012
Q:\Abteilungsprojekte\Oekotoxzentrum\12_Communication_Fotos\ARA Wetzikon.wmv



2.3. Outreach

Table 12: Outreach

Date	Location	Group
01.04.2011	Dübendorf	Uni Tübingen/ Exkursion zur Lehrveranstaltung Risikobewertung von Umweltchemikalien
01.06.2011	Bern	Vortrag, Naturforschende Gesellschaft in Bern
29.06.2011	Aarau	Vortrag, Alte Kantonsschule Aarau
21.04.2011	Lausanne	Laborführung, Haute Haute Ecole d'Ingénierie et de Gestion du Canton de Vaud
25.10.2011	Dübendorf	Vorträge und Laborführung von Schülern der Kantonsschule Wettingen
03.11.2011	Frauenfeld	Präsentation, TechDay, Frauenfeld
18.11.2011	Dübendorf	DHI Water Policy, Denmark/ Visit of Chinese Water Managers
13.03.2012	Dübendorf	Amt für Umwelt St. Gallen / Besuch Oekotoxzentrum
13.03.2012	Bern, CH	Präsentation, Berner Wassertag
22.03.2012	Triembach	Interessengemeinschaft Datenverbund
28.03.2012	Dübendorf	Uni Tübingen/ Exkursion zur Lehrveranstaltung Risikobewertung von Umweltchemikalien
20.04.2012	Lausanne	Besuch, Haute Haute Ecole d'Ingénierie et de Gestion du Canton de Vaud
01.06.2012	Dübendorf	Uni Rottenburg/ Exkursion zur Lehrveranstaltung Aquatische Ökotoxikologie
16.04.2012	Lausanne	Camp de sciences, EPFL,
05.06.2012	Lausanne	Journée des classes, EPFL
21.06.2012	Dübendorf	Vorstellung des Oekotoxentrums, ETH Fachgruppe Chemie der ETH Alumni (VECS - Verein der ehemaligen Chemiestudierenden der ETH Zürich)
25.10.2012	Engelburg, SG	Vortrag, Klärpersonalseminar, Kantone SG, AR, AI
01.09.2012	ETH Zürich	Vortrag Scientifica
27.02.2013	Dübendorf	Besuch, Freies Gymnasium Zürich, Laborführung
15.03.2013	Dübendorf	Uni Tübingen/ Exkursion zur Lehrveranstaltung Risikobewertung von Umweltchemikalien
07.05.2013	Dübendorf	Universität Rottenburg/ Exkursion zur Lehrveranstaltung Aquatische Ökotoxikologie
13.05.2013	Dübendorf	Beteiligung am Besuch der Ständerätlichen Kommission für Wissenschaft, Bildung und Kultur
21.05.2013	Dübendorf	Besuch von Maturanden der Kantonsschule Alpenquai Luzern und Alte Kantonsschule Aarau (Maturaarbeiten)
17.06.2013	Dübendorf	Beteiligung am Besuch der Grünliberalen Partei Zürich
30.08.2013	Dübendorf	Besuch, AquaViva Rheinaubund



Date	Location	Group
14.11.2013	Dübendorf	Schulkinder (Mittelstufe/Sekundarstufe), Laborführung im Rahmen des Zukunftstages der eawag/empa
19.11.2013	Dübendorf	Besuch, Kantonsschule Wettingen
27.01.2014	Dübendorf	Schnupperlehre Biologielaborant für Sekundarschüler
21.02.2014	Dübendorf	Demonstration für Schüler von div. Kantonsschulen, Durchführung eine Leuchtbakterientests
11.04.2014	Lausanne	Besuch, Haute Haute Ecole d'Ingénierie et de Gestion du Canton de Vaud
22.04.2014	Lausanne	Campe des sciences, EPFL
17.05.2014	Dübendorf	Informationsstand, Eröffnungsveranstaltung der Eawag zur Renaturierung Chriesbach
05.06.2014	Lausanne	Journée des classes, EPFL
18.08.2014	Dübendorf	AKAD, Hilfe bei Maturaarbeit
06.09.2014	Dübendorf	Informationsstand, Tag der offenen Tür, ARA Neugut
09.09.2014	Dübendorf	Schnupperlehre Biologielaborant für Sekundarschüler
24.09.2014	Dübendorf	Besuch, VSA – CC Gewässer
13.11.2014	Lausanne	Journée des métiers, EPFL



Annex 3 Projects

Table 13: Projects carried out with external funding

Project Title	Funding Agency	Start Date	End Date	Partners Eawag/EPFL	Other Partners
Evaluation von Methoden zum effektbasierten Nachweis von östrogen aktiven Substanzen (EDCs) in Abwasserreinigungsanlagen und dazugehörigen Vorflutern	Bundesamt für Umwelt	Jan 11	Dec 11		
OECD Testrichtlinienprogramm: National Coordinator Ecotoxicology	Bundesamt für Umwelt	Mar 09	Oct 14		
Risk Assessment (Micropoll) "Herleitung von ökotoxikologisch basierten Beurteilungskriterien"	Bundesamt für Umwelt	May 09	Sep 11		
Pflanzenschutzmittel (PSM) "Qualitätsnormen für Pflanzenschutzmittel in Schweizer Oberflächengewässern"	Bundesamt für Umwelt	Dec 09	Feb 11		
Microtox	SCAHT	Apr 11	Dec 12	Eawag, Kompetenzzentrum Trinkwasser	
Stoffflussmodellierung Nordrhein-Westfalen	Ministerium für Klimaschutz, Umwelt, Landwirtschaft, Natur- und Verbraucherschutz des Landes Nordrhein-Westfalen, D	Jun 11	Jul 12	Eawag SWW; Eawag UChem	Envilab AG, Landesumweltamt Nordrhein Westfalen (LANUV), D
Mischungstoxizitätsprojekt "A Tender to Develop Case Studies of the Application of the Cefic MIAT Decision Tree Using Monitoring Data from European Studies"	The European Chemical Industry Council	Jul 11	Jan 12	Eawag UChem	Dow Chemicals, Chris Watts Associates, WSC Environment, GB
Folgeprojekt PSM (diffuse Quellen) "Herleitung von effektbasierten Qualitätskriterien für Mikroverunreinigungen aus diffusen Quellen"	Bundesamt für Umwelt	Jul 11	Dez 14		ECT Oekotoxikologie GmbH, D
Stoffflussmodellierung Baden-Württemberg	Landesanstalt für Umwelt, Messungen und Naturschutz Baden-Württemberg	Sep 11	Sep 12	Eawag SWW; Eawag UChem	Envilab AG



Project Title	Funding Agency	Start Date	End Date	Partners Eawag/EPFL	Other Partners
Situationsanalyse und Herleitung und externe Qualitätskontrolle von ökotoxikologisch basierten Beurteilungskriterien für organische Spurenstoffe	Bundesamt für Umwelt	Oct 11	Dec 14		ECT Oekotoxikologie GmbH, D
Thunersee-Felchen Projekt: Untersuchung von Extrakt-Fraktionen mit Calux Assays	Amt für Wasser und Abfall des Kantons Bern	Nov 11	Oct 12		
Stoffflussmodellierung von Mikroverunreinigungen aus Abwasserreinigungsanlagen im Einzugsgebiet des Genfersees	Bundesamt für Umwelt, Commission internationale pour la protection des eaux du Léman (CIPEL)	Jan 12	Jan 14		Envilab AG, CIPEL
Ökotoxikologische Bewertung von Phthalaten - Review	Bundesamt für Umwelt	Apr 12	May 12		
VUNA	Eawag, SANDEC	Apr 12	Sep 13		
Ökotoxizität von Fassadenablaufwasser (TOXFAS)	Bundesamt für Umwelt	May 12	Dec 12		Hochschule für Technik Rapperswil, Soluval Santiago
Gutachten Thunersee Felchen	Amt für Wasser und Abfall	Jun 12	Aug 12		
Erarbeitung eines belastbaren Konzeptes zur routinemässigen Beurteilung der Wasserqualität anhand von Biotests (Modul Oekotoxikologie im Rahmen der Koordinierten Beobachtung Oberflächengewässer und dem Modulstufenkonzept)	Bundesamt für Umwelt	Jun 12	Apr 15		Soluval Santiago
Durchführung des YES-Tests an Proben von Kläranlagenabläufen und Fließgewässern	Amt für Umwelt und Energie des Kt. St. Gallen	Aug 12	Oct 12		
Evaluation der Ökotoxizität von Kläranlagenabwasser der ARA Basel mit Biotests vor und nach der Anwendung erweiterter Abwasserbehandlungsmethoden	ProRhen AG	Sep 12	Mar 13		Soluval Santiago, ECT Oekotoxikologie GmbH, D



Project Title	Funding Agency	Start Date	End Date	Partners Eawag/EPFL	Other Partners
DEMEAU: Demonstration of promising technologies to address emerging pollutants in water and wastewater	European Union (Seventh Framework Programme)	Sep 12	Aug 15	Eawag Uchem	Biodetection Systems, NL, KWR Watercycle Research Institute, NL, Veolia, FR, Waternet, NL
Probenuntersuchung: Landwirtschaftliche Östrogene	Bundesamt für Umwelt	Mar 13	Sep 13		BMG Engineering
Folgeprojekt - Evaluation der Ökotoxizität von Kläranlagenabwasser der ARA Basel mit Biotests vor und nach der Anwendung erweiterter Abwasserbehandlungsmethoden	ProRhen AG, Basel	Apr 13	Feb 14		Soluval Santiago, Xenometrix AG, Hydrotox, Freiburg, D
Bioverfügbarkeit Partikel gebundener Pflanzenschutzmittel Wirkstoffe - Review	Bundesamt für Landwirtschaft	Aug 13	Oct 13		
OECD-Testrichtlinienprogramm: Update TG 203	Bundesamt für Umwelt	Aug 13	Dec 14		
Beschichtungen im Schweizer Stahlwasserbau und deren Ökotoxizität	Bundesamt für Umwelt	Sep 13	Dec 14		Hochschule für Technik Rapperswil, Soluval Santiago
Removal of estrogens by modified calcium carbonate	Omya (Schweiz) AG, Olten	Oct 13	Jul 14		
Mischungstoxizität von Pflanzenschutzmitteln - Review	Bundesamt für Landwirtschaft	Jan 14	Oct 14		
Chemische, ökotoxikologische und mikrobiologische Untersuchung von Abwasser der Sondermülldeponie Kölliken nach Behandlung mit verschiedenen Abwasserreinigungsmethoden	Sondermülldeponie Kölliken	Feb 14	Oct 14	Eawag Umik, Eawag Uchem	Biodetection Systems, NL
Testverfahren zur Beurteilung der Behandelbarkeit von Abwasser mit Ozon	Envilab AG, Zofingen	Apr 14	Oct 14		
Biologische Nachbehandlung von kommunalem Abwasser nach Ozonung – ReTREAT: Teilprojekt Biotests	Bundesamt für Umwelt	Jun 14	May 15	Eawag SWW, Eawag Uchem	ECT Oekotoxikologie GmbH, D, Soluval Santiago
Bodentoxizität von Holzschutzmitteln	Bundesamt für Umwelt	Sep 14	Jun 15		Berner Fachhochschule



Project Title	Funding Agency	Start Date	End Date	Partners Eawag/EPFL	Other Partners
Estrogenic and androgenic activity in plant extracts	INVITRO-CONNECT GmbH (D)	Oct 14	Oct 14		
Hydrotoxikologische Untersuchungen	Kraftwerke Oberhasli	Oct 14	Mar 15		Biodetection Systems, NL
Wirkungsorientierte Gewässerüberwachung mit Fischen. Effektmonitoring erweiterter Abwasserreinigungsverfahren mittels standardisierter Toxizitätspunkte und molekularer Biomarker in exponierten Regenbogenforellen	Bundesamt für Umwelt	Dec 14	Aug 15	Eawag Utox	Uni Tübingen, D

Table 14: Projects carried out exclusively with base funding (in addition to student projects)

Project Title	Start Date	End Date	Partners
Validation and improvement of the Ecotox Centre test battery and complementary methods for the monitoring of the (chemical, biological, ecological) quality of effluents from wastewater treatment plants	Sep 09	Sep 11	Wageningen University, NL (C. Di Paolo)
Situationsanalyse und Empfehlungen für die Beurteilung von Seditimenten in der Schweiz (Chemie, Oekotoxikologie, Biologie)	Oct 09	Feb 12	Uni Lausanne (N. Chèvre), Cemagref (Lyon, F), Solval Santiago, EPFL-CEL
Premature Puberty in Switzerland	May 10	Nov 10	BAG (B. Brüscheiler)
Validation of the independent action model for the application on species sensitivity distributions (SSD)	May 10	Jul 13	Uni Lausanne (N. Chèvre)
Fish Early Life Stage Test mit dem Zebraabräbling - Erweiterung um molekulare und Verhaltens-Endpunkte	Sep 10	Jun 12	Eawag Utox (K. Schirmer)
ISO-Zertifizierung "DIN/ISO AK Hormonelle Wirkung/Xenohormone" Zertifizierung von <i>in vitro</i> Testsystemen zum Nachweis östrogen/androgen aktiver Substanzen im Abwasser.	Nov 10	ongoing	BfG Koblenz, D, and various international research groups
Pesticide analytics in soil samples	Nov 10	Nov 12	
ISO-Zertifizierung miniaturisierter Grünalgentest	Dec 10	ongoing	Umweltbundesamt, D; BfG Koblenz, D; Bayerisches Landesamt für Umwelt, D; LANUV, D, and others
Interlaboratory comparison of the Phytotoxkit (Microbiotest)	Mar 11	Jun 11	Istituto per lo Studio degli Ecosistemi, CNR, Verbania Pallanza, I (R. Baudo)



Project Title	Start Date	End Date	Partners
Microtox: Biotests as indicators for drinking water quality	Apr 11	Dec 12	SCAHT; SVGW; Eawag CC Drinking Water
Benchmarking organic micropollutants in wastewater, recycled water and drinking water with <i>in vitro</i> bioassays	Apr 11	Dec 13	University of Queensland, Australia (B. Escher)
Einsatz des Köderstreifentests zur Untersuchung der biologischen Aktivität von Landwirtschaftsböden (Kanton Bern)	Apr 11	Oct 12	Abt. Bodenschutz, Amt für Landwirtschaft und Natur des Kantons Bern (C. Maurer)
NORMAN ILS study on passive sampling of emerging pollutants	Jul 11	Nov 11	NORMAN Network
IWaQa: Toxicity of Passive Sampler Extracts, NFP 61	Aug 11	Dec 13	Eawag-UChem (C. Stamm)
Science Policy Interface: Prioritization of regulatory research needs	Mar 11	Sep 12	EU Working Group Chemicals
International Ringtest of sediment contact test with <i>Myriophyllum</i> (ISO/DIN 16191)	Jun 11	Apr 12	Federal Institute of Hydrology, D (U. Feiler)
Development of a simplified method to include mixture toxicity estimates in the evaluation of environmental quality standards (EQS)	Nov 11	May 12	Università Milano Bicocca (M. Vighi); AWA Bern
Vergleich von EQS für River Basin Specific Pollutants in der EU	Nov 11	May 13	Environment Agency, UK (P. Whitehouse)
EcolImpact: Impact of Micropollutants on Aquatic Ecosystems	Jan 12	ongoing	Eawag: ECO, Fischec, SWW, Uchem, Utox, Umik
Passive Probenahme von PCBs - Anwendung von PRC in Silikon-sammlern	Jun 12	Apr 13	Empa (M. Zennegg); Bafu (J. Tremp); various Cantons
Untersuchung von Zentrifugaten aus Faulschlammproben der ARA Neugut im Yeast Estrogen Screen (YES)	Jun 12	Sep 12	Eawag Verfahrenstechnik (A. Heisele)
Testing comparability of existing and innovative bioassays for water quality assessment: the 2012 Europe-wide exercise	Sep 12	Jun 13	European Commission, Joint Research Centre Institute for Environment and Sustainability, Ispra, I (T. Lettieri, R. Carvalho)
Variabilität verschiedener Biotests für östrogene Wirkung	Oct 12	Sep 14	RWTH Aachen, Institut für Umweltforschung, D (H. Hollert); University of Florida, Gainesville, USA (N. Denslow); INERIS, F (S. Ait-Aissa)
Application of the Bait Lamina Test to evaluate soil quality in Swiss vineyards	Sep 11	Sep 12	Eva Kohlschmid, Ecotoxicology Group, Agroscope, Wädenswil
Wirkungsorientierte Gewässerüberwachung: - Erfassung und Monitoring toxischer Wirkungen von Chemikalien in der Umwelt mit Hilfe molekularer Methoden (Pilotstudie)	Jan 12	Dec 12	Eawag Utoc (K.Schirmer); Amt für Umwelt und Energie Kt. St.Gallen (M. Eugster), Amt für Natur, Jagd und Fischerei, Kt. St.Gallen (R. Riederer), Universität Bern (H. Segner)
The CRED evaluation method for risk assessment	Jul 13	Dec 14	University of Stockholm, S (M. Agerstrand); RIVM, NL (C. Moermond; Eawag Utox (M. Korkaric)



Project Title	Start Date	End Date	Partners
Passive sampling of perfluorinated compounds in the channel system	May 12	Jun 12	Eawag Uchem (J. Hollender); RECETOX, CZ (B. Vrana)
Sediment background concentrations for Switzerland	Jan 12	Dec 12	Sediment Working Group, OZ Lausanne
Sediment data management	Jan 12	Dec 13	Sediment Working Group, OZ Lausanne
Sediment sampling and pre-treatment methods	Jan 13	ongoing	Sediment advisory group
PCBs sediment quality criteria review	Feb 13	Jun 13	
Adapting the STORM guideline for large surface waterbodies	Jan 12	ongoing	Unil (N. Chèvre), VSA (S. Gautschi, F. Elber), EPFL (L. Rossi), VSA CC Gewässer
VSA Plattform "Verfahrenstechnik Mikroverunreinigungen Experten- gruppe "Reaktionsprodukte und Effekte der Ozonung"	May 13	ongoing	VSA
NORMAN - bioassay interlaboratory study / ring test	Jun 13	ongoing	NORMAN Network
Establishment L-YES Biotest at the Ecotox Centre	Jul 13	ongoing	Uni Frankfurt
Ökotoxikologische Untersuchungen "Experimental Ponds", Eawag	Apr 14	Dec 14	Eawag Eco (C. Vorburger), Uchem, Utox, Soluval Santiago
Validierung des kombinierten Algentests	Jun 14	ongoing	Eawag Uchem, C. Stamm
Trophic transfer of priority and emerging compounds by invertebrates and fishes	Jan 14	ongoing	Irstea, F (M. Babut), Univ Bordeaux, LPTC, F (P. Labadie), Onema, F (O. Perceval)
Bioaccumulation of perfluoroalkyl compounds by invertebrates	Jan 14	Dec 14	PhD student Delphine Bertin (Irstea, France)
Wirkungsorientierte Gewässerüberwachung mit Fischen: - Erfassung und Monitoring toxischer Wirkungen von Chemikalien aus Abwasser- reinigungsanlagen mit Hilfe molekularer Methoden	Mar 14	Dec 14	Eawag Utox (K. Schirmer); Amt für Umwelt und Energie Kt. St.Gallen (M. Eugster), Amt für Natur, Jagd und Fischerei, Kt. St.Gallen (R. Riederer), Universität Bern (H. Segner)
Effect-based monitoring for the EU watch list candidate substances EE2 and E2	Oct 14	ongoing	Joint Research Centre (EC), ONEMA /INERIS (F), Bio Detection Systems (NL), Swiss Centre for Applied Ecotoxicology (CH), Federal Institute of Hydrology (DE), RWTH Aachen (D), RECETOX (CZ), NORMAN-Network, Helmholtz Centre for Environmental Research-UFZ (D), IRSA-CNR (I), Italian Institute of Health (I)



Annex 4 Presentations

Table 15: Conference presentations (talks)

Authors	Event	Presentation Title	Place	Date
Brüschweiler B, Kunz P	Endocrine Disruptors 2011, Smithers Rapra Technology Ltd	Hormonally active substances in Bottled Mineral Water	Pfäffikon, CH	8.-9.2.2011
Kunz P, Kienle C, Homazava N, Schärer M	Endocrine Disruptors 2011, Smithers Rapra Technology Ltd	Endocrine Effects in the aquatic Environment - the Swiss situation	Pfäffikon, CH	8.-9.2.2011
Kunz, P	Endocrine Disruptors 2011, Smithers Rapra Technology Ltd	Session 6: Case Studies	Pfäffikon, CH	8.-9.2.2011
Flück R, Campiche S	Annual Meeting of Swiss Sedimentologists	Evaluation of the ecotoxicological quality of sediments: Establishment of recommendations for Switzerland	Fribourg, CH	26.2.2011
Werner I	EULAKES Konferenz, Istituto per lo Studio degli Ecosistemi	Measuring the Effects of Pollutants on Aquatic Species: Challenges and Approaches	Verbania, I	4-5.3.2011
Kienle C et al.	SETAC Europe 21st Annual Meeting	Evaluation of bioassays and wastewater quality: <i>In vitro</i> and <i>in vivo</i> bioassays for the performance review in the Project "Strategy MicroPoll"	Milano, I	15.-19.5.2011
Werner I	Cercl'eau, Jahrestagung	Ökotoxikologische Untersuchungen mit aquatischen Biotests - Möglichkeiten und Grenzen -	Rapperswil, CH	16.6.2011
Kienle C et al.	SETAC GLB Jahrestagung	Erweiterte Abwasserbehandlung zur Elimination von Mikroverunreinigungen: Erfolgskontrolle mit <i>in vitro</i> und <i>in vivo</i> Biotests	Landau, D	18.-20.9.2011
Werner I et al.	Schweizerische Gesellschaft für Toxikologie, Jahrestagung	Principles and challenges of environmental risk assessment	Basel, CH	11.11.2011
Kase R	15th WG E meeting	Science-Policy-Interface (SPI): Identification of research needs/knowledge for the WG E and the CIS of the WFD	Brussels, B	15.3.2012
Harman C, Allen I, Vermeirssen E	SETAC World Congress	Calibration and exposure correction methods for the polar organic chemical integrative sampler (POCIS)	Berlin, D	20.-24.5.2012
McArdell C et al.	SETAC World Congress	Evaluating advanced treatment of hospital wastewater	Berlin, D	20.-24.5.2012



Authors	Event	Presentation Title	Place	Date
Di Paolo C et al.	SETAC World Congress	Molecular and behavioral endpoints in zebrafish early life stage tests: sensitivity and link to delayed effects	Berlin, D	20.-24.5.2012
Künniger T et al.	1 st European Technical Coatings Congress (ETCC 2012)	Functionality and environmental impact of nanosilver and conventional biocides in wood façade coatings	Lausanne, CH	4.-6.6.2012
O'Brien D et al.	Annual Meeting SETAC Australasia	Calibration of aquatic passive samplers: Accounting for changes in chemical uptake rates when exposed to variations in environmental flow conditions	Brisbane, AU	4.7.2012
Hammers-Wirtz M et al.	PILLS (Pharmaceutical Input and Elimination from Local Sources) Final Conference	Ecotoxicological assessment of hospital wastewater	Gelsenkirchen, D	19.-20.9.2012
Kase R	16th WG E meeting	SPI activity on prioritization of research needs, knowledge availability and dissemination for the WG E 2011-2012	Brussels, B	11.10.2012
Junghans M et al.	Annual Meeting SETAC EU	Retrospective RA for almost 400 analytes - challenges and lessons learned from applying current assessment schemes for mixture toxicity under the WFD	Glasgow, GB	15.5.2013
Moschet C et al.	Annual Meeting SETAC EU	National pesticide screening for the selection of relevant compounds for improved future monitoring strategies	Glasgow, UK	16.5.2013
Vermeirssen E et al.	SETAC Europe Glasgow	Passive sampling perfluorinated chemicals: <i>in-situ</i> correction of flow effects on chemical sampling rates	Glasgow, GB	16.5.2013
Kase R et al.	Multilateral Meeting	Towards Klimisch 2.0? – More Transparency and Quality in Risk Assessment	Edinburgh, GB	17.5.2013
Werner I	Jubiläumskongress der Gesellschaft Schweizer Tierärztinnen und Tierärzte	Ökotoxikologie: Ist nach der ARA alles ok?	Bern, CH	7.6.2013
Zennegg M, Schmid P, Vermeirssen E, Tremp J	IV Reunion nacional de dioxinas, furanos y compuestos organicos persistentes relacionados	Old sins throw long shadows: PCBs – 40 years after restrictions in Switzerland – still an environmental problem?	Alicante, E	28.6.2013
Fernández D et al.	International Society of Limnology XXXII Congress	Effects of fungicides on leaf decomposition in vineyard streams	Budapest, H	9.8.2013
Werner I et al	Eurotox 2013 Congress	The promise of ecotoxicogenomics for detecting adverse contaminant effects in non-model species	Interlaken, CH	4.9.2013



Authors	Event	Presentation Title	Place	Date
Kase R, Aicher L, Werner I	Eurotox 2013	Environmental and drinking water risk assessment – examples, confusions and options	Interlaken, CH	4.9.2013
Junghans M et al.	Eurotox 2013	Application of the combined decision tree to surface water data from Switzerland, UK, and other EU countries	Interlaken, CH	4.9.2013
Junghans M, Ittner L, Werner I	Annual Meeting SETAC EU	Deriving EQS for fungicides: the lack of biotests for aquatic fungi adds to uncertainty	Basel, CH	15.5.2014
Ferrari B.J.D.	Colloque de la Société d'Écotoxicologie Fondamentale et Appliquée	Écotoxicologie appliquée: De l'autre côté de la frontière franco-suisse	Besançon, F	2.7.2014
Agerstrand M, Kase R, Korkaric M, Moermond C	Annual Meeting SETAC EU	Criteria for Evaluating and Reporting Ecotoxicity data (CRED) – Report from a ring test	Basel, CH	15.5.2014
Bertin D, Ferrari B.J.D, Labadie P, Garric J. et al.	Annual Meeting SETAC EU	Accumulation and elimination of perfluoroalkyl substances (PFASs) by the insect <i>Chironomus riparius</i> larvae (Diptera, Chironomidae) exposed to sediment.	Basel, CH	15.5.2014
Hollender J et al.	SETAC Europe 24th Annual Meeting	Passive sampling method for the detection of pyrethroids and organophosphates in surface waters in the sub-ng/L range	Basel, CH	15.5.2014
Fernández D et al.	SETAC Europe 24th Annual Meeting	Effects of fungicides on leaf decomposition in vineyard streams	Basel, CH	15.5.2014
Vermeirssen E. et al.	SETAC Europe 24th Annual Meeting	Ecotoxicological assessment of immersion samples from façade render	Basel, CH	15.5.2014
Kienle C et al.	8th BioDetectors Conference 2014	Evaluation of bioassays and wastewater quality: <i>In vitro</i> and <i>in vivo</i> bioassays for the performance review in the Project "Strategy MicroPoll"	Torino, I	26.9.2014
Kienle C et al.	6. Gemeinsame Jahrestagung von SETAC GLB und der Fachgruppe Umweltchemie und Ökotoxikologie der GDCh	Ökotoxikologische Effekte von Mikroverunreinigungen aus Kläranlagen in 12 Schweizer Fließgewässern - Eine Studie im Rahmen des Projektes Ecolmpact	Giessen, D	10.10.2014
Vermeirssen E et al.	6. Gemeinsame Jahrestagung von SETAC GLB und der Fachgruppe Umweltchemie und Ökotoxikologie der GDCh	Passive sampling method for the detection of pyrethroids and organophosphates in surface waters in the sub-ng/L range	Giessen, D	10.10.2014



Authors	Event	Presentation Title	Place	Date
Vermeirssen E et al	6. Gemeinsame Jahrestagung von SETAC GLB und der Fachgruppe Umweltchemie und Ökotoxikologie der GDCh	Ecotoxicological assessment of immersion samples from façade render	Giessen, D	10.10.2014
Werner I	Annual Meeting of the Swiss Society of Toxicology	Wastewater Treatment Effluents as Sources of Micropollutants in Swiss Surface Waters	Basel, CH	11.11. 2014
Bertin D, Ferrari B.J.D., Labadie P, Garric J. et al.	Colloque de la Société d'Ecotoxicologie Fondamentale et Appliquée	Bioaccumulation de composés perfluorés (PFAS) à partir de sédiment naturel chez deux espèces d'invertébrés benthiques.	Besançon, France	2.7.2014
Vignati D.A.L., Aharchaoui I, Battaglia E, Ferrari B.J.D. et al.	Annual Meeting SETAC North America	Is current knowledge of Cr(III) ecotoxicity to aquatic organisms based on data of inadequate quality?	Nashville, TN, USA	21.11.2014
Wiesner L, Junghans M	15th Annual XeRR Meeting	Aquatic Risk Assessment for Triazole Fungicides: The Impact of Epoxiconazole and Tebuconazole on Aquatic Fungi	Zürich, CH	28.11.2014

Table 16: Conference presentations (posters)

Authors	Event	Presentation Title	Place	Date
Simran Jit et al.	International Society for Computational Biology conference	Assessment of from hexachloro-cyclohexane contamination by the last Lindane production plant in India	Hyderabad, India	27.1.2011
Gregorio V, Junghans M, Chèvre N	SETAC Special Science Symposium: Risk assessment of mixtures - moving from research to regulation	Predicting the aquatic toxicity of commercial pesticide mixtures	Brüssel, B	2.-3.2.2011
Kunz P, Kienle C, Aicher L, Junghans M, Werner I	SETAC Special Science Symposium: Risk assessment of mixtures - moving from research to regulation	Mixture toxicity in practice: what are the needs? Outcomes of a mixture toxicity workshop in Switzerland	Brüssel, B	2.-3.2.2011
Kunz P, Fent K	SETAC Special Science Symposium: Risk assessment of mixtures - moving from research to regulation	Estrogenic activity of ternary UV-filter mixtures in fish - An analysis with nonlinear isobolograms	Brüssel, B	2.-3.2.2011



Authors	Event	Presentation Title	Place	Date
Flück R, Campiche S, Chèvre N, Werner I	7th International SedNet conference. Sediments and Biodiversity: bridging the gap between science and policy	Ecotoxicological evaluation of sediments: establishment of recommendations in Switzerland	Venice, I	6.-9.4.2011
Kunz P, Brüscheweiler B	SETAC Europe 21st Annual Meeting	Hormonally active substances in Bottled Mineral Water	Milano, I	15.-19.5.2011
Kunz P, Kienle C, Aicher L, Junghans M, Werner I	SETAC Europe 21st Annual Meeting	Risk assessment of chemical mixtures: how can we crack the nut? Mixture toxicity in practice: what are the needs?	Milano, I	15.-19.5.2011
Margot J, Magnet A, Thonney D, Chèvre N et al.	SETAC Europe 21st Annual Meeting	Elimination of micropollutants in wastewater treatment plants: ozonation or activated carbon? Conclusions of a pilot project over one year.	Milano, I	15.-19.5.2011
Junghans M, Chèvre N, Di Paolo C, Duchemin M et al.	SETAC Europe 21st Annual Meeting	Derivation of Environmental Quality Standards for Plant Protection Products: factors influencing the outcome	Milano, I	15.-19.5.2011
Campiche S, Zumbühl A, Gachet Aquillon C, Grand E, Werner I	SETAC Europe 21st Annual Meeting	Use of the bait lamina test to assess the effects of lead contamination on the soil organisms of a shooting range	Milano, I	15.-19.5.2011
Kienle C, Kase R, Abegglen C, Margot J et al.	Pollutant Responses in Marine Organisms (PRIMO)	Evaluation of municipal wastewater quality after different advanced treatment technologies using <i>in vitro</i> and <i>in vivo</i> bioassays	Long Beach, CA, USA	14-18.5.2011
Zennegg M, Schmid P, Vermeirssen E, Urfer D et al.	International Conference on Chemistry and the Environment (ICCE 2011)	PDMS passive samplers - an excellent tool for the identification of PCB point sources in Swiss rivers	Zurich, CH	11-15.9.2011
Homazava N, Gachet Aquillon C, Campiche S, Werner I	International Conference on Chemistry and the Environment (ICCE 2011)	Simultaneous multi-class pesticide analysis in soil samples with ultra-performance liquid chromatography-tandem mass spectrometry using polarity switching	Zurich, CH	15.9.2011
Di Paolo C, Gauch R, Groh K, Kienle C et al.	SETAC GLB Jahrestagung	Can the sensitivity of the zebrafish early life stage test be improved by including molecular and behavioral endpoints?	Landau, D	18.-20.9.2011



Authors	Event	Presentation Title	Place	Date
Schifferli A, Kunz P Mengesha T, Werner I et al.	SETAC GLB Jahrestagung	Ökotoxikologische Untersuchung von Drainage-Wässern aus intensiv bewirtschafteten Kuhweiden	Landau, D	18.- 20.9.2011
Campiche S et al.	SETAC Europe 22nd Annual Meeting	Assessing biological activity of soil organisms in no-till soils under different agricultural practices using the bait lamina method	Berlin, D	20.- 24.5.2012
Di Paolo C et al.	SETAC World Congress	Molecular and behavioral endpoints in zebrafish early life stage (ELS) tests: sensitivity and link to delayed effects	Berlin, D	24.5.2012
Feiler U et al.	SETAC World Congress	Sediment contact test with <i>Myriophyllum aquaticum</i> (ISO/DIS 16191) : results of an international ring test	Berlin, D	24.5.2012
Gauch R, Junghans M, Sigg L, Werner I	SETAC World Congress	Does measuring cell number inhibition improve the combined algae test?	Berlin, D	24.5.2012
Gregorio V, Junghans M, Chèvre N	SETAC World Congress	On the appropriateness of using the common mixture toxicity models CA and RA on species sensitivity distributions: a theoretical approach	Berlin, D	24.5.2012
Junghans M, Kunz P, Vighi M, Werner I	SETAC World Congress	A proposal for considering mixture toxicity with EQS compliance checking	Berlin, D	24.5.2012
Junghans M, von Arb S, Whitehouse P, Johnson I	SETAC World Congress	Variability in Environmental Quality Standards – how much is there and what are the causes?	Berlin, D	24.5.2012
Campiche S et al.	4th International Congress Eurosoil 2012	Assessing biological activity of soil organisms in no-till soils under different agricultural practices using the bait lamina method	Bari, I	2.-6.7.2012
Gauch R, Junghans M, Sigg L, Werner I	Annual Meeting SETAC North America	Does measuring cell number inhibition improve the combined algae test?	Long Beach, CA, USA	15.11.2012
Junghans M, Kunz P, Vighi M, Werner I	Annual Meeting SETAC North America	A proposal for considering mixture toxicity with EQS compliance checking	Long Beach, CA, USA	15.11.2012
Marks B, Junghans M, Whitehouse P, von Arb S, Ceriani L, Johnson I	SETAC Europe 23rd Annual Meeting	Variability in Environmental Quality Standards: what are the causes?	Glasgow, UK	16.5.2013



Authors	Event	Presentation Title	Place	Date
Kase R et al.	Annual Meeting SETAC EU, Short Course	Towards Klimisch 2.0? – More Transparency and Quality in Risk Assessment	Glasgow, GB	15.5.2013
Kienle C et al.	SETAC Europe 23rd Annual Meeting	Evaluation of methods for the effect-based detection of estrogenic substances in wastewater treatment plant effluent and adjacent rivers	Glasgow, GB	12.-16.5.2013
Kunz P	SETAC Europe 23rd Annual Meeting	Variability of four different <i>in vitro</i> assays for the assessment of estrogenic activity in reconstituted and environmental samples	Glasgow, UK	16.5.2013
Vermeirssen E et al.	SETAC Europe 23rd Annual Meeting	Passive sampling combined with chemical and biological analyses for monitoring spatial and temporal exposure profiles in two river catchments	Glasgow, UK	16.5.2013
Casado-Martinez C et al.	6 th International Conference on Water Resources and Environment Research	Sediment quality assessment in Switzerland: spatial and temporal patterns of contamination	Koblenz, D	3.-7. 6.2013
Kienle C et al.	6 th International Conference on Water Resources and Environment Research	Evaluation of methods for the effect-based detection of estrogenic substances in wastewater treatment plant effluent and adjacent rivers	Koblenz, D	3.-7.6.2013
Kunz P	6 th International Conference on Water Resources and Environment Research	Reproducibility and variability of three different <i>in vitro</i> assays for the assessment of estrogenic activity in reconstituted water samples	Koblenz, D	7.6. 2013
Kase R, Götz C, Werner I	Micropol & Ecohazard	Ecotoxicity, environmental assessments and combination effects of micropollutants – examples of risk perception, characterisation and reduction	Zürich, CH	18.6.2013
Schrijks M et al.	Micropol & Ecohazard	DEMEAU (FP7): Work Activity dedicated towards implementation of novel rapid and quantitative bioassays for water quality monitoring	Zürich, CH	16.-19.6.2013
Prokeš R et al.	International Passive Sampling Workshp (IPSW 2013)	Calibration of POCIS samplers for perfluorinated compounds in water	Bordeaux, F	29.6.2013



Authors	Event	Presentation Title	Place	Date
Bebon R et al.	18. Jahrestagung der SETAC GLB	Toxicity of sediment-bound triclosan, triclocarban, irgarol and cypermethrin to the freshwater ostracod <i>Heterocypris incongruens</i> (ISO 14371): optimization of test method and preliminary results.	Essen, D	26.9.2013
Kienle C	18. Jahrestagung der SETAC GLB	Evaluation of methods for the effect-based detection of estrogenic substances in wastewater treatment plant effluent and adjacent rivers	Essen, D	26.9.2013
Kunz P	18. Jahrestagung der SETAC GLB	Variabilität von vier verschiedenen <i>in vitro</i> Tests zum Nachweis östrogenen Aktivität in rekonstituierten Wasserproben	Essen, D	26.9.2013
Junghans M, Kunz P, Werner I	18. Jahrestagung der SETAC GLB	Beurteilung der Toxizität von Mischungen: Aktuelle, praxisorientierte Ansätze für die Beurteilung von Gewässerproben	Essen, D	26.9.2013
Campiche S et al.	SSP Congrès Annuel: comprendre le fonctionnement du sol dans l'écosystème : un approche systémique	<i>In situ</i> variability of the bait lamina response: consideration of the soil moisture content factor in improving test readability	Changins, CH	14.2.2014
Babut B, Labadie P, Munoz G, Budzinski H, Ferrari B.J.D. et al.	SETAC Europe 24th Annual Meeting	Is perfluorooctane sulfonate (PFOS) biomagnified in riverine food webs? A case study of two French rivers.	Basel, CH	15.5.2014
Bertin D, Labadie P, Ferrari B.J.D., Garric J et al.	SETAC Europe 24th Annual Meeting	Recent advances and critical future research directions for poly- and perfluorinated alkyl substances (PFASs).	Basel, CH	15.5.2014
Campiche S et al.	SETAC Europe 24th Annual Meeting	<i>In situ</i> variability of the bait lamina response: consideration of the soil moisture content factor in improving test readability	Basel, CH	15.5.2014
Casado-Martinez C et al.	SETAC Europe 24th Annual Meeting	Toxicity of sediment-bound triclosan, triclocarban, irgarol and cypermethrin to the freshwater ostracod <i>Heterocypris incongruens</i> (ISO 14371)	Basel, CH	15.5.2014
Ganser B	SETAC Europe 24th Annual Meeting	Impact of wastewater treatment plant effluent on <i>Gammarus fossarum</i> 's feeding rate and vitellogenin levels	Basel, CH	15.5.2014



Authors	Event	Presentation Title	Place	Date
Kase R	SETAC Europe 24th Annual Meeting	The European Technical Report on Aquatic Effect-Based Monitoring tools in the context of the EU Water Framework Directive	Basel, CH	15.5.2014
Kienle C	SETAC Europe 24th Annual Meeting	Ozonation or powdered activated carbon: Comparing the ecotoxicity of wastewater after two advanced treatment steps	Basel, CH	11.- 15.5.2014
Lettieri T et al.	SETAC Europe 24th Annual Meeting	Toxicological effects of mixtures of chemical pollutants et EQS concentrations	Basel, CH	15.5.2014
Campiche S et al.	Colloque de la Société Française d'Ecotoxicologie Fondamentale et Appliquée	Evaluation de différentes pratiques agricoles et influence du facteur taux d'humidité du sol sur la réponse bait lamina (dégradation de la matière organique)	Besançon, F	2.7.2014
Casado-Martinez C et al.	Colloque 2014 de la Société Française d'Ecotoxicologie Fondamentale et Appliquée	Bioessai sur l'ostracod <i>Heterocypris incongruens</i> pour l'évaluation de la toxicité des sédiments : sensibilité aux sédiments fins et micropollutants organiques	Besançon, F	2.7.2014
DiPaolo et al.	Annual Meeting SETAC GLB	Assessment of neurotoxic effects on different biological levels in zebrafish embryos and larvae	Giessen, D	10.9.2014
Vermeirssen E, Kienle C, Werner I	Annual Meeting SETAC GLB	Passive Probenahme-Techniken in Fliessgewässern – eine Demonstration von verschiedenen Sammlertypen und Anwendungen in Kombination mit Biotests	Giessen, D	10.9.2014
Kienle C et al.	Relevanz von Transformationsprodukten im urbanen Wasserkreislauf	Ozonation or powdered activated carbon: Ecotoxicity of wastewater treated with two advanced treatment options	Koblenz, D	24.9.2014.
Casado-Martinez C et al.	1er colloque scientifique de la Fondation Rovaltain	Soil and sediment at the Centre Ecotox: from microplate to field and from applied research to training	Rovaltain, F	9.10.2014
Werner I et al.	1er colloque scientifique de la Fondation Rovaltain	Aquatic ecotoxicology at the Swiss Centre for Applied Ecotoxicology Eawag-EPFL – overview	Rovaltain, F	9.10.2014
Campiche S et al.	3e Rencontres nationales de la recherche sur les sites & sols pollués	Intégration des facteurs environnementaux pour une meilleure interprétation de la réponse bait lamina	Paris, F	19.11.2014



Table 17: Workshop Presentations

Authors	Event	Presentation Title	Place	Date
Kase R, Segner H, Maack G	Pharmaceutical Advisory Group	Diclofenac and EE2: Some answers for the key unresolved issues in the aquatic environment	Milano, I	18.5.2011
Kase R, David M, Durot M-P	EU Working Group E	Science-Policy-Interface (SPI): Identification of research needs and knowledge for the WG E	Brussels, B	22.6.2011
Kase R, Kunz P, Kienle C, Werner I	CMEP	CMEP Task 3.2 C- Effect Based Monitoring Tools / Effect based tools for hormonally active substances	Prag, CZ	30.6.2011
Vermeirssen E	Passive Sampling Workshop	Practical applications of passive sampling in Switzerland	Utrecht, NL	9.-10.11.2011
Kienle C et al.	2. Workshop zum MKULNV Auftrag AZ IV-7-042 600 001, Teilprojekt 9	Erweiterte Abwasserbehandlung zur Elimination von Mikroverunreinigungen: Erfolgskontrolle mit <i>in vitro</i> und <i>in vivo</i> Biotests	Aachen, D	10.10.2011
Kase R, Durot M-P	EU Working Group E	Research Priorities in the WG E	Brussels, B	2012
Kienle C, Gauch R	104. Sitzung des DIN AK Biotests	Überblick über den kombinierten Algentest mit <i>Pseudokirchneriella subcapitata</i>	Koblenz, D	17.-18.4.2012
Kienle C et al.	PILLS Workshop Toxicity Tests	Evaluation of bioassays and wastewater quality: <i>In vitro</i> and <i>in vivo</i> bioassays for the performance review in the Project "Strategy MicroPoll"	Essen, D	25.4.2012
Werner I	Workshop: An Integrated Approach to Water Research and Technology Development, TU Munich	Micro-Pollutants in the Aquatic Environment: Sources, Effects and Remediation Strategies	Garching, D	4.5.2012
Kase R	Multilateral Meeting	Progress in ecotoxicity data evaluation –Raising the bar to increase the transparency of environmental risk assessments for hazard assessment, science and regulation.	Berlin, D	1.6.2012
Campiche S	Réunion technique sur des thèmes d'actualité de la protection des sols (OFEV)	Tests écotoxicologiques pour la protection des sols	Bern, CH	12.6.2012
Kase R, Werner I	Workshop: Oekotoxikologische Bewertung der Phthalate	Aquatische Toxizität und Risiken unterschiedlicher Phthalate	Bern, CH	12.6.2012



Authors	Event	Presentation Title	Place	Date
Werner I	Eawag Infotag	Hormonaktive Stoffe in Oberflächengewässern: messen, bewerten, minimieren	Zürich, CH	22.6.2012
Werner I	Konferenz der Vorsteher der Umweltschutzämter (KVU)	Leistungen und Schwerpunkte des Oekotoxenzentrums	Vaduz, LI	01.7.2012
Kunz P	Chemical Monitoring of Emerging Pollutants - Bioanalytical options for the monitoring of steroidal estrogens in surface waters	Bioanalytical Test Comparison	Koblenz, D	28.2.2013
Kase R et al.	SETAC Glasgow, Global Pharmaceutical Advisory Group	Towards Klimisch 2.0? – More Transparency and Quality in Risk Assessment	Glasgow, GB	14.5.2013
Kienle C	EDA Emerge Short-course: Fate of emerging pollutants in the aquatic water cycle	Effect Tests for Assessing the Efficiency of Wastewater Treatment	Dübendorf, CH	3.7.2013
Werner I	SVGW Fachausssprache „Vorsorgeprinzip im Gewässerschutz: Fakten und Visionen“	Wirkungsorientierte Bewertung von Spurenstoffen in der Ökotoxikologie	Biel, CH	20.11.2013
Kienle C	Workshop „Evaluation of biological treatment processes after ozonation of wastewater from nutrient removal plants“	Planned Ecotoxicological Experiments at WWTP Neugut	Dübendorf, CH	12. 2.2014
Junghans M	Shale Gas Workshop, ETH	Shale gas exploration: Water related issues	Zürich, CH	2.4.2014
Kienle C et al.	Relevanz von Transformationsprodukten im urbanen Wasserkreislauf	Ozonation or powdered activated carbon: Ecotoxicity of wastewater treated with two advanced treatment options	Koblenz, D	24.9.2014
Junghans M	Priorisierung von Stoffen in Gewässern – Wie kann NORMAN helfen?	Risikobewertung für kleinere und mittlere Gewässer in der Schweiz	Berlin, D	18.11.2014



Authors	Event	Presentation Title	Place	Date
Vermeirssen E	Passive Sampling techniques for monitoring of contaminants in the aquatic environment - Achievements to date and future perspectives	Applicability of passive sampling in a tiered approach for trend monitoring and compliance checking of hydrophobic compounds and mercury - Discussion and questions	Lyon, F	17.11.2014

Table 18: Seminars (outside of Ecotox Courses)

Authors	Event	Presentation Title	Place	Date
Kase R	VSA: ARA – Mikroverunreinigungen und neue Aspekte zu Energie und Stickstoff	Beurteilung von Stoffen	Emmetten, CH	2./30.11.2011
Kienle C	VSA: ARA – Mikroverunreinigungen und neue Aspekte zu Energie und Stickstoff	Effektmessung mit Biotests: Welcher Test wird wozu eingesetzt?	Emmetten, CH	2./30.11.2011
Werner I	Environmental Engineering Seminar Series, EPFL	Toxic effects of pyrethroid insecticides in non-target aquatic organisms	Lausanne, CH	21.2.2011
Werner I	Seminar Umweltforschungszentrum	Toxic effects of pyrethroid insecticides in non-target aquatic organisms	Leipzig, D	21.3.2011
Campiche S	CAS SIPOL Ausbildung, UNINE	Introduction à l'écotoxicologie: application de tests écotoxicologiques pour l'évaluation de sites pollués	Neuchâtel, CH	07.6.2011
Kienle C, Kunz P	Naturforschende Gesellschaft in Bern	Hormonaktive Substanzen in Schweizer Abwasser und Gewässern	Bern, CH	21.6.2011
Kunz P, Kienle C	Alte Kantonschule Aarau	Hormonaktive Substanzen in Schweizer Abwasser und Gewässern	Aarau, CH	29.6.2011
Vermeirssen E	EPFL École des Sciences Criminelles	Passive sampling	Lausanne, CH	30.8.2011
Kase R	UChem Seminar, Eawag	Diclofenac and EE2: Some answers for the key unresolved issues in the aquatic environment	Dübendorf, CH	2011
Junghans M	Uchem Seminar, Eawag	EQS derivation (Hazard Assessment) for micropollutants from point and diffuse sources	Dübendorf, CH	6.9.2011
Kienle C, Kunz P	IGH Mitgliederversammlung 2012	Hormonaktive Substanzen in Schweizer Abwasser und Gewässern	Trimbach, CH	22.3.2012



Authors	Event	Presentation Title	Place	Date
Casado-Martinez C	Annual Meeting 2012 of the Swiss Society of Toxicology	Fukushima: the ecotoxicological effects	Basel, CH	22.11.2012
Kase R	Fachökotoxikologenausbildung „Biomonitoring“	Bewertung und integrative Wirkungserfassung gewässerrelevanter Substanzen - Bioanalytische Verfahren und deren regulatorische Anwendungsmöglichkeiten	Frankfurt a. M., D	27.2.2012
Homazava N	Bioanalytical options for the monitoring of steroidal oestrogens in surface water	State of the art in chromatographic analysis (LC-MS/MS) of steroidal estrogens in surface water	Koblenz, D	27. 2.2013
Vermeirssen E	Environmental Engineering Seminar Series - EESS	Passive samplers for polar organic compounds – strengths and weaknesses	Lausanne, CH	12.3.2013
Kase R	Institutsseminar «Arzneistoffe in der Umwelt», Berlin 31.05-02.06.2013	Zu den Risiken und Wirkungen gewässerrelevanter Substanzen und Pharmazeutika	Berlin, D	2.6.2013
Kienle C et al.	Evolution and Ecology Seminar Series, University of Tübingen	Evaluation of bioassays and wastewater quality: <i>In vitro</i> and <i>in vivo</i> bioassays for the performance review in the Project "Strategy MicroPoll"	Tübingen, D	14.4.2014
Werner I	Short Course "Advances in environmental and human risk assessment - a transatlantic perspective", Annual Conference SETAC EU	Principles of Ecological Risk Assessment	Basel, CH	11.5.2014
Werner I	31st Colloquium on Toxicology	Ecotoxicology of pesticides: facts and challenges	University of Basel, CH	2.9.2014
Ferrari B.J.D.	Internal Seminar series of Eawag Kastanienbaum	Sediment at Ecotox Centre: where we are and where we go	Luzern, CH	13.10.2014
Ferrari B.J.D., Casado-Martinez C	Internal seminar at the Federal Office for the Environment (BAFU)	Les sédiments: état des lieux et perspectives en Suisse	Bern, CH	21.11.2014