
CV Paul van den Brink



Personal information

Family name: Van den Brink
First names: Paulus Johannes
Date of birth: 21 June 1968
Nationality: Dutch
Websites: <http://www.stressecology.eu>
<https://www.wur.nl/en/persons/paul-prof.dr.ir.-pj-paul-van-den-brink.htm>

Employer (2005 – current)

Name: Aquatic Ecology and Water Quality Management group, Wageningen University
Position: Full professor of chemical stress ecology
Address: Wageningen University & Research, P.O. Box 47, 6700 AA, Wageningen, The Netherlands
Phone: +31-317-481615
Email: Paul.vandenBrink@wur.nl

Past employer (1992 – 2023)

Name: Environmental Risk Assessment group, Wageningen Research
Position: Senior scientist
Address: Wageningen University & Research, P.O. Box 47, 6700 AA, Wageningen, The Netherlands

Ancillary activities and volunteer work

Institution	Position	Period
“Bergcommissie”, commission that advises Wageningen on “de Wageningse berg”	Member	2022 – current
Journal “Environmental Management”	Associated editor	2019 – current
Primary school “G.J. van den Brinkschool”	Board member and treasurer	2018 – 2023
NORMAN network (https://www.norman-network.net/)	Steering committee member	2020 – 2023
Wageningen Institute for Environment and Climate Research (WIMEK)	Board member	2017 – 2023
South China Normal University	Visiting professor	2017 – 2021
University of York	Honorary visiting professor	2012 – 2020
Canadian River Institute	Associate fellow	2008 – 2020
Journal “Toxics”	Associated editor	2018 – 2020
SETAC, the Society of Environmental Toxicology and Chemistry	President of the World Council (incl. vice and past)	2011 – 2013

SETAC, the Society of Environmental Toxicology and Chemistry	President of the European Council (incl. vice and past)	2008 – 2011
Journal “Environmental Toxicology and Chemistry”	Editor	2007 – 2017

Education

Institution		Wageningen University	
From	To	Degree	Major subjects
1986	1992	MSc	Environmental Sciences
1992	1999	PhD	Agricultural and environmental sciences (ecological risk-assessment of pesticides)
	2019	University Teaching Qualification	

Bibliography

Paul J. Van den Brink is a full, personal professor at the Aquatic Ecology and Water Quality Management Group of Wageningen University. At Wageningen University Paul chairs the chemical stress ecology group which currently consists of himself and 14 PhD students. He is involved in supervising and executing international projects on assessing the ecological effects of contaminants like pesticides, veterinary medicines and personal and home care products as well as those of multiple stressors, including climate change, drought, nutrients and salinization. Other research topics are the development of effect models (e.g. individual based, meta-population models and ecoinformatics, expert base models), Traits based Ecological Risk Assessment (TERA) and ecological risk assessment of chemicals in the tropics. Since 1995, Paul van den Brink has published over 280 ISI-listed papers (*h*-index = 62; SCOPUS), for three of which he won an international prize. He also co-edited five books. Paul currently coordinates the EU funded Innovative Training Network ECORISK2050 which studies the effects of global change on the emission, fate, effects and risks of chemicals in aquatic ecosystems. In 2006 Paul won the LRI-SETAC Innovative Science Award of € 100.000 and the SETAC Capacity Building Award in 2023. He also organized and took part in many international workshops and courses. He is also a past-president of SETAC (Society of Environmental Toxicology and Chemistry; www.setac.org) World and Europe and a SETAC Fellow.

Bibliometric data

	SCOPUS	Google Scholar
Total list of publications:	288	535
<i>h</i> -index:	63	79
Total citations:	13,458	20,103

Awards

Year	Award
2000	SETAC best publication award on environmental research
2003	ECETOC Science Award, in the category ‘Environmental Fate and Effects’ (€ 10.000)
2006	CEFIC-LRI, SETAC Europe Innovative Science Award (€ 100.000)
2013	University Fund Wageningen and KLV Wageningen Alumni Network MSc

	thesis award in the field of environmental sciences (as supervisor)
2015	Environmental Toxicology and Chemistry 2015 Best Paper Award (as co-author)
2016	SETAC Fellows Award
2019	Environmental Toxicology and Chemistry 2018 Exceptional Paper Award (as co-author)
2023	SETAC Capacity Building Award

National media

Channel	Title	Date
RTL news TV broadcast	Water quality of ditches and puddles is unhealthy: 'It's really going in the wrong direction' (in Dutch)	6-11-2023
RTL news site	Water quality of ditches and puddles is unhealthy: 'It's really going in the wrong direction' (in Dutch)	6-11-2023
Spraakmakers on the National Radio 1	What is the quality of the surface water? (in Dutch)	13-09-2023
Newspaper “de Volkskrant”	The water quality of the Rhine is getting worse instead of better (in Dutch)	05-09-2023
Newspaper “De Gelderlander”	Polluted Enka Groundwater remains a problem for Ede residential areas: 'Not a pleasant idea if I lived there' (in Dutch)	27-06-2023
Magazine of Wageningen University & Research	No ENKA pipeline, but concerns remain (in Dutch)	16-03-2023
Newspaper “De Gelderlander”	Many question about the cancellation of the ENKA grease pipe (in Dutch)	08-03-2023
Pointer Radio on the National Radio 1	The ENKA grease pipe (min 31, in Dutch)	12-02-2023
Nieuws en Co on the National Radio 1	Effects of psychopharmaceuticals on aquatic ecosystems (in Dutch, min 17-21, in Dutch)	30-01-2023
Magazine of Wageningen University & Research	A big fail for water quality (in Dutch)	20-12-2022
Newspaper “De Gelderlander”	Experts baffled by polluted groundwater discharged from Enka factory on the Rhine (in Dutch)	30-09-2022
Newspaper “de Volkskrant”	Water quality in the Netherlands is at the bottom of the European ranking – is it really that bad? (in Dutch)	03-06-2022
Newspaper “de Volkskrant”	Insects retain more and longer heavy pesticides than thought (in Dutch)	16-12-2021
Newspaper “de Volkskrant”	Water quality is below average almost everywhere in the Netherlands: new 'nitrogen-like debacle' threatens (in Dutch)	18-11-2021
Investigative Journalism Platform “Follow the Money”	Toxicologist Tennekes was right about bee deaths all along (in Dutch)	18-04-2020
Newspaper “de Volkskrant”	An alarming study on insect venom is 'just too late' to be able to approve the drug (in Dutch)	14-05-2019
Newspaper “de Volkskrant”	Dutch ditches, streams and canals are a lot dirtier than we think (in Dutch)	07-03-2019

Television news provided by the Dutch NOS broadcasting organisation	Neonicotinoids (in Dutch)	09-04-2015
Newspaper “de Volkskrant”	Devastation by insecticides turns out to be bigger than thought (in Dutch)	09-04-2015
Newspaper “NRC”	Poison plague: first the bees, now the birds (in Dutch)	12-07-2014
Newspaper “de Volkskrant”	Insects and birds disappear because of poison (in Dutch)	10-07-2014

Acquisition and project management (2008 - present)

Projects with PhD students and/or PostDocs (total: € 4.715.550,-)

Start year	Name project	Funder	Funding (k€)	Share AEW (%)	PhD/ PostDoc
2023	Impact of agricultural chemicals on the ecology & ecosystem of the lake tana sub-basin wetlands	Schlumberger Foundation	150	100	1 PhD
2023	Effects of chemicals of emerging concern on aquatic ecosystems under climate change	LPDP	132	100	1 PhD
2023	QTOX: Quantitative extrapolation in ecotoxicology	EU	257	100	1 PhD
2022	RATION: Risk assessment innovation for low-risk pesticides	EU	380	100	1 PhD
2022	Effects of PFOS on aquatic ecosystems	PEEF	110	100	1 PhD
2021	Effects of antibiotics on aquatic ecosystems.	CSC	65	100	1 PhD
2020	PsychoPharmac’eau: Psychopharmaceutical Prevention & Pilots to Reduce Effects in the water cycle	NWO	1,005	33	1 PhD
2019	GetReal: Assessing spatial and temporal variability in species assemblages and potential implications for chemical risk assessments	CEFIC	113	100	1 PhD 1 PostDoc
2018	Mechanisms of toxicity of neonicotinoid insecticides towards aquatic arthropod species	CSC	58	100	1 PhD
2018	ECORISK2050: Effects of global change on the emission, fate, effects and risks of chemicals in aquatic ecosystems.	EU	3,500	20	2 PhD
2017	EMERCHE: Effect-directed monitoring tools to assess ecological and human health risks of chemicals of emerging concern in the water cycle.	NWO	684	50	1 PhD
2016	Influence of ecosystem complexity on the ecological effects of pesticides.	CSC	58	100	1 PhD
2016	Ecological Risk Assessment of Chemicals	NUFFIC	82	100	1 PhD

	in a Central Ethiopian Rift Valley Lake: An Ecosystem Services Approach				
2016	Development of ecological archetypes and models for use in chemical risk assessment	Consumer goods company	260	75	1 PhD
2014	Effects of agrochemicals on aquatic ecosystem and fish biodiversity	NUFFIC	82	70	1 PhD
2013	Fate and effects of personal care ingredients in subtropical and tropical sediments	Consumer goods company	225	100	1 PhD
2012	Biological control of Schistosomiasis using molluscivorous freshwater fishes	NUFFIC	82	100	1 PhD
2012	Post-registration monitoring of pesticide-induced environmental and human health risks in Ghana.	Ghana government	16	100	1 PhD
2011	Assessing the effects of chemicals in untreated household wastewater on the ecosystems of rivers in developing regions	Consumer goods company	266	100	2 PhD 1 PostDoc
2011	Environmental Risk Assessment of Pesticides in Ethiopia	Dutch Ministry of Economic Affairs	70	100	1 PhD
2009	CREAM. Mechanistic Effect Models for Ecological Risk Assessment of Chemicals	EU	375	100	1 PhD 1 PostDoc
2009	SEAT, Sustainable Ethical Aquaculture Trade	EU	433	100	1 PhD 1 PostDoc
2009	Adaptive capacity and functionality of multitrophic aquatic ecosystems	WIMEK / SENSE	225	50	1 PhD

Projects without PhD students and/or PostDocs (total: € 3.684.000,-)

Start year	Name project	Funder	Funding (k€)	Share PvdB (%)
2022	AENEAS: Advancing the environmental risk assessment of non-target arthropods for plant protection products	EFSA	330	25
2020	PRECAUTION: Predicting the sensitivity of aquatic communities to emerging chemicals: A modelling toolbox for the cross-species extrapolation of chemical sensitivity	Consumer goods company and Dutch government	384	50
2020	ANTIVENOM: ANTIfoulants, VEterinary MediCiNaL Products and Organic Material can affect marine sediment organisms, but to what extent?	Norwegian Research Council	156	100
2018	Key factor toxicity: effect-based monitoring and mixture toxicity	Dutch ministry of infrastructure and water	361	100
2018	Chemicals Assessment of Risks to	CEFIC	113	50

2018	Ecosystem Services II Development of effect models for the ecological risk assessment of pesticides	Dutch ministry of Economic Affairs	163	100
2016	Tools for Assessment and Planning of Aquaculture Sustainability	EU	531	100
2015	Chemicals Assessment of Risks to Ecosystem Services	CEFIC	63	50
2015	Development of ecological archetypes and models for use in chemical risk assessment	Consumer goods company	200	100
2014 till 2015	Development of ecological scenarios for the ecological risk assessment of pesticides	Dutch ministry of Economic Affairs	80	100
2009 till 2016	Professorship Paul van den Brink	WUR	393	100
2013	AquaStress	Belgian science policy office	50	100
2013	CHIMERA: Towards more ecologically realistic assessment of chemicals in the environment	CEFIC	243	75
2013	SOLUTIONS: Solutions for present and future emerging pollutants in land and water resources management	EU	405	75
2013	Recovery and multistress	Dutch ministry of Economic Affairs	75	100
2010 and 2012	Models chemical stress	WUR	60	100
2011	Evaluation of test methods for measuring toxicity to sediment organisms	CEFIC	150	75
2010	Pesticide Risk Reduction Programme – Ethiopia	Dutch ministry of Economic Affairs	390	50
2008 till 2011	Metapopulation modelling	Chemical industry	435	100
2008	A model for integrated risk assessment of pesticide use in the Brazilian Amazon	WUR	24	100

PhD students

Banchiamlak Getnet (September 2023 – current). Impact of agricultural chemicals on the ecology & ecosystem of the lake Tana sub-basin wetlands. PhD project funded by the Schlumberger Foundation.

Imroatushshoolikhah (September 2023 - current). Effects of chemicals of emerging concern on aquatic ecosystems under climate change. PhD project funded by Lembaga Pengelola Dana Pendidikan, or the Indonesia Endowment Fund for Education (LPDP).

Judith Epping (March 2023 – current). Effects of low risk pesticides on aquatic ecosystems. PhD project funded by the EU.

Lea Grenc (March 2023 – current). Eco(toxico)logical modelling of the combined effects of chemicals and climate change. PhD project funded by the EU. Based at Radboud University Nijmegen. Supervised by Jan Hendriks.

- Pierina Rivas (February 2023 – current). Extrapolation of ecotoxicological effects in a changing climate. PhD project funded by the EU.
- Vera van Santvoort (February 2023 – current). Community-wide micro-evolutionary adaptation to anthropogenic stress: context dependency and ecological implications. PhD project funded by the Netherlands Organisation for Scientific Research (NWO). Based at NIOO. Supervised by Steven Declerck.
- Ayesha Ghafoor (December 2021 – current). Effects of PFOS on aquatic ecosystems. PhD project funded by The Punjab Educational Endowment Fund (PEEF).
- Dailing Wu (March 2021 – current). Effects of antibiotics on aquatic ecosystems. PhD project funded by the China Scholarship Council (CSC).
- Kaisheng Yao (January 2021 – current). Effects of pesticides and down-the-drain chemicals on sub-tropical aquatic ecosystems. PhD project funded by the CEFIC-LRI GetReal project (ECO50).
- Elien Versteegen (September 2020 – current). Sublethal effects of psychotropics on aquatic species, populations and ecosystems, how relevant are subtle effects for real-world ecosystems? PhD project funded by the Netherlands Organisation for Scientific Research (NWO).
- Marelize Labuschagne (February 2020 – current). Adverse Outcome Pathways to assess the effects of pesticides on aquatic macroinvertebrates. PhD project funded by NUFFIC. Supervised by Victor Wepener
- Aafke Saarloos (January 2020 - current). Chemical threats en route: risks of contaminants for migratory birds. Based at sub-department of Toxicology. Supervised by Nico van den Brink.
- Shuwen Han (September 2019 – current). Facing interactive effects of multiple stressors in a changing world: possibilities and limitations of rapid microevolutionary adaptation. PhD project funded by the China Scholarship Council (CSC). Based at NIOO. Supervised by Steven Declerck.
- Jadipa Khatikarn (August 2011 - current). Assessing the effects of chemicals in untreated household wastewater on the ecosystems of rivers in Thailand. Unfunded PhD project.

(Co-)supervised completed PhD theses

- Markus Hermann (2023). Interactive effects of stress posed by global climate change and chemicals on aquatic ecosystems. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Annika Mangold-Döring (2023). Modelling the effect of temperature and chemicals at different levels of biological organisation. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Lara Schuijt (2023). Aquatic life on drugs. Assessing the ecological impacts of pharmaceuticals on aquatic ecosystems. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Anna Huang (2022). Inter- and intra-species sensitivity of aquatic arthropods to imidacloprid and flupyradifurone. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Zhao Qinghua (2021). The influence of horizontal and vertical biodiversity on the effects of stressors on aquatic ecosystems. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Lemessa Merga (2021). Impacts of anthropogenic activities on the ecology and ecosystem service delivery of Lake Ziway, Ethiopia. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.

- Sanne van den Berg (2020). Improving cross-species extrapolation of chemical sensitivity. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Michael Onwona-Kwakye (2020). Pesticide-induced environmental risks: A field study in Ghana. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Fengjiao Peng (2018). Ecological risks of personal care ingredients for subtropical benthic communities. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Kizar Ahmed Sumon (2018). Effects of insecticides on aquatic ecosystems in Bangladesh. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Jacqueline Augusiak (2016). Improving communication and validation of ecological models - A case study on the dispersal of aquatic macroinvertebrates. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Berhan Teklu (2016). Environmental risk assessment of pesticides in Ethiopia: A case of surface water systems. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Concillia Monde (2016). Impact of natural and anthropogenic factors on the trophic interactions of molluscivores and Schistosoma host snails. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Mauricio Rocha Dimitrov (2016). Assessing the effects of chemicals on aquatic microbial ecosystems. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Noel Diepens (2015). Evaluation of test methods for measuring toxicity to sediment organisms. PhD thesis Wageningen University, Wageningen, The Netherlands. Co-supervisor
- Andreu Rico (2014). Environmental risk assessment of veterinary medicines used in Asian aquaculture. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Mazhar Iqbal Zafar (2012). Extrapolation of effects of pesticides on aquatic communities and ecosystems across different exposure patterns. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Nika Galic (2012). Assessing recovery potential of aquatic macroinvertebrate populations using ecological models. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Tahla Ansara-Ross (2011). Environmental and human risk in pesticide use in Southern Africa. PhD thesis University of Johannesburg, Johannesburg, South Africa. Co-supervisor.
- Mascha N. Rubach (2010). Predicting the response of aquatic invertebrates to stress using species traits and stressor mode of action. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Stephen J. Maund (2009). The aquatic ecotoxicology of the synthetic pyrethroids: from laboratory to landscape. PhD Thesis Wageningen University, Wageningen, The Netherlands. Supervisor.
- Michiel A. Daam (2007). Influence of climatic factors and microcosm complexity on the fate and effects of pesticides. PhD Thesis Universidade de Aveiro, Aveiro, Portugal. Co-supervisor.

Member of PhD thesis committee

- Ruben Bakker (2022). Toxicogenomic fingerprint identification in springtails to assess pesticide-contaminated soils. Vrije Universiteit, Amsterdam, The Netherlands.
- Félix P. Leiva (2022). Thermal biology and cell size: An oxygen limitation perspective in ectotherms. Radboud University, Nijmegen, the Netherlands

- Vera Silva (2022). Pesticide residues in EU soils and related risks. Wageningen University, Wageningen, The Netherlands.
- Ruoyu Liang (2022). Spatial variation in the ecological vulnerability of freshwater invertebrate assemblages to chemical stressors. University of Sheffield, Sheffield, UK.
- Arne Deknock (2022). Applicability of food web interactions within aquatic ecosystems for biological control of amphibian chytridiomycosis. Ghent University, Ghent, Belgium.
- Gregg R. Jansen van Rensburg (2022). The effect of DDT, atrazine and a combination of both on the freshwater shrimp, *Caridina africana*. North-West University, Potchefstroom, South Africa.
- Shokouh Rahsepar (2021). Deep marine oil spills, oil-particles-dispersants interaction and impact on oil biodegradation. Wageningen University, Wageningen, The Netherlands.
- Miguel Calvo Agudo (2021). Honeydew as a newly described route of insecticide exposure to beneficial insects. Wageningen University, Wageningen, The Netherlands.
- Shensheng Zhao (2021). Consequences of kinetic variability for inter-species, inter-ethnic and inter-individual differences in sensitivity towards organophosphate pesticides quantified by new approach methodologies. Wageningen University, Wageningen, The Netherlands.
- Shandong Meng (2021). Combined effects of global warming and pesticide exposure on mosquitoes: integrating temporal aspects within and across generations in ecotoxicology. KU Leuven, Leuven, Belgium.
- Nico Wolmarans (2021). Ecological risk assessment of amphibians in the Phongolo River floodplain. North-West University, Potchefstroom, South Africa and University of Antwerp, Antwerp, Belgium.
- Yuzhu Wei (2021). Potential impact of underwater released exhaust gas from innovative ships on the marine ecosystem. Wageningen University, Wageningen, The Netherlands.
- Henrik Barmentlo (2020). Neonicotinoids in nature: The effects on aquatic invertebrates and their role in ecosystems. Leiden University, Leiden, The Netherlands.
- Thomas Wagner (2020). Removal and transformation of conditioning chemicals in constructed wetlands treating cooling tower water. University of Amsterdam, Amsterdam, The Netherlands.
- Lizaan de Necker (2019). Biodiversity and ecological structures of an African subtropical river and associated floodplain pans. North-West University, Potchefstroom, South Africa.
- Tiago Simões (2019). Integrated omics to add ecological relevance to risk assessment of pesticides. Vrije Universiteit, Amsterdam, The Netherlands.
- Nadia J. Vendrig (2018). Out of the box: Statistical methods for the analysis of automated home cage experiments. Wageningen University, Wageningen, The Netherlands.
- Pepijn de Vries (2018). Targeted selection of existing aquatic in vivo bioassay data in ecotoxicological hazard quantification. Wageningen University, Wageningen, The Netherlands.
- Wenbo Liu (2018). Anaerobic manganese- or iron-mediated pharmaceutical degradation in water. Wageningen University, Wageningen, The Netherlands.
- Justine van Eenennaam (2017). Marine snow formation during oil spills: additional ecotoxicological consequences for the benthic ecosystem. Wageningen University, Wageningen, The Netherlands.
- Yujie He (2017). Removal of pharmaceutically active compounds in constructed wetlands: mechanisms and application. Wageningen University, Wageningen, The Netherlands.
- Belay Tizazu Mengistie (2016). Environmental governance of pesticides in Ethiopian vegetable and cut flower production. Wageningen University, Wageningen, The Netherlands.
- Karel Viaene (2016). Improving ecological realism in the risk assessment of chemicals: Development of an integrated model. Ghent University, Ghent, Belgium.

- Patrik Henriksson (2015). Evaluating European import of Asian aquaculture products using statistically supported Life Cycle Assessments. Leiden University, Leiden, The Netherlands.
- Oleksandra Ieromina (2015). Effects of pesticides on aquatic macrofauna in the field. Leiden University, Leiden, The Netherlands.
- Gert Everaert (2015). Potential risk of organic micropollutants on marine phytoplankton in the greater North Sea: integration of modelling and experimental approaches. Ghent University, Ghent, Belgium.
- Alpar Barsi (2014). Towards understanding the effects of putative endocrine disruptors in the great pond snail *Lymnaea stagnalis*: experimental and toxicokinetic-toxicodynamic modelling approaches. VU university, Amsterdam, The Netherlands.
- Nander van Praet (2014). Effects of environmental contaminants on aquatic macroinvertebrates using sublethal bioindicators. University of Antwerp, Antwerp, Belgium.
- Devdutt Kulkarni (2014) A combined approach of experiments and modelling for the implementation of freshwater copepods in ecological risk assessment. RWTH Aachen University, Aachen, Germany.
- Edwin M. Foekema (2013). Eggsposed. Impact of maternally transferred POPs to fish early life development. Wageningen University, Wageningen, The Netherlands.
- Charl Wijnand Malherbe (2013). Validation and implementation of an ecological risk assessment (ERA) framework for pesticide use in the Vaalharts irrigation scheme. University of Johannesburg, Johannesburg, South Africa.
- Elke Zimmer (2013). The pond snail under stress: interactive effects of food limitation, toxicants and copulation explained by dynamic energy budget theory. Vrije Universiteit, Amsterdam, The Netherlands.
- Raúl A. Loayza-Muro (2013). Life at the edge: benthic invertebrates in high altitude Andean streams. University of Amsterdam, Amsterdam, The Netherlands.
- Henrique M.R. Anselmo (2012). Effects of marine persistent organic pollutants on early life development and metamorphosis of echinoids. Wageningen University, Wageningen, The Netherlands.
- Signe Pedersen (2012). Effect of pesticide pulse exposure on non-target aquatic organisms – Implications for ecological risk assessment. Roskilde University, Roskilde, Denmark.
- Catherine Bo Choung (2012). Ecotoxicological assessment of the impacts of a herbicide-insecticide mixture on freshwater ecosystems. Macquarie University, New South Wales, Australia.
- Gordon C. O'Brien (2012). Regional scale risk assessment methodology using the relative risk model as a management tool for aquatic ecosystems in South Africa. University of Johannesburg, Johannesburg, South Africa.
- Hendrik Trekels (2011). Functional ecological study of the effects of two key stressors in aquatic Hemiptera. From cell to (meta)community. K.U. Leuven, Leuven, Belgium.
- Pham Van Hoi (2010). Governing pesticide use in vegetable production in Vietnam. Wageningen University, Wageningen, The Netherlands.
- Raphael K. N'Guessan (2009). Insecticide resistance in the West African malaria vector *Anopheles gambiae* and investigation of alternative tools for its delay. Wageningen University, Wageningen, The Netherlands.
- P. Mangala C.S. De Silva (2009). Pesticide effects on earthworms. A tropical perspective. VU university, Amsterdam, The Netherlands.
- Rinus Bogers (2008). Markers of endocrine disruption in fish. Wageningen University, Wageningen, The Netherlands.
- Roman Ashauer (2007). Predicting effects of fluctuating or pulsed exposure to pesticides on aquatic organisms. University of York, York, UK.

Andrew H. Siwela (2007). Some ecotoxicological aspects of selected freshwater bodies around Bulawayo. National University of Science and Technology, Bulawayo, Zimbabwe.

Helene Roussel (2005). Effects of copper on structure and function of freshwater ecosystems: a lotic mesocosms study. Universite Paul Sabatier, Toulouse, France.

N. Claire Wells (2003). The ecoepidemiology of rivers in England and Wales. University of London, London, UK.

Experience in Third countries

Paul has a long term cooperation and/or projects with counterparts in Europe, Canada, Brazil, Ghana, South Africa, Ethiopia, Bangladesh, Thailand, Vietnam and China.

Conferences, Training and Lecturing

International conferences

On average 3 - 5 times a year a platform presentation at (SETAC) conferences, for which he is often invited. He also served many times as (co-)chair. He also was a member of the scientific committee of several SETAC conferences and of the local organising committee of the SETAC Europe meeting in The Hague in 2006.

Keynote and invited presentations

- Van den Brink, P.J. (2023). Effects of pharmaceuticals on aquatic ecosystems. 15th International Congress of the European Association for Veterinary Pharmacology and Toxicology, Bruges, Belgium.
- Van den Brink, P.J. (2023). The interactive effects of climate change and chemicals on aquatic ecosystems. 2nd International Conference on Climate Change & Environment. Quaid-i-Azam University, Islamabad in collaboration with Pakistan EPA, Islamabad, Pakistan.
- Van den Brink, P.J. (2020). Personal reflections on the top 4 research questions from the European horizon-scanning workshop. 9th Young Environmental Scientists Meeting, SETAC, Waco TX, USA.
- Van den Brink, P.J. (2019). Assessing and Extrapolating of Effects of (Multiple) Stressors at Different Levels of Biological Organisation. The 6th national ecotoxicology conference, Guangzhou, China.
- Van den Brink, P.J. (2019). Effects of Imidacloprid on aquatic ecosystem. 2019 International symposium on chemical risk prediction and management (ISCRPM-2019), Guangzhou, China.
- Van den Brink, P.J. (2017). Towards Sustainable Environmental Quality: Priority Research Needs for Europe. SETAC Europe 2017 meeting, Brussels, Belgium.
- Van den Brink, P.J. (2015). Diagnosis of field impacts of chemicals from monitoring and experimental data. SASAqS (The Southern African Society of Aquatic Scientists) 2015 Conference, Drakensberg, South Africa.
- Van den Brink, P.J. (2013). Assessing aquatic population and community level risks of pesticides. SETAC Europe 2013 meeting, Glasgow, UK.
- Van den Brink, P.J. (2010). Risk assessment of effects of agrochemicals on irrigation water quality. 28th International Horticultural Congress, Lisbon, Portugal.
- Van den Brink, P.J. (2010). The effects of climate change on the pesticide sensitivity and recovery potential of aquatic ecosystems. 12th IUPAC International Congress of Pesticide Chemistry, Melbourne, Australia.

- Van den Brink, P.J. (2009). 'Putting the eco into ecotoxicology': a lesson from J. Cairns Jr. from 1988 is still contemporary in 2009. 30th annual meeting of SETAC North America, New Orleans, USA.
- Van den Brink, P.J. (2009). Ecological Risk Assessment: From Book-Keeping to Chemical Stress Ecology. 2nd CSTS (Cameroon Society for Toxicological Sciences) international conference, Dschang, Cameroon.
- Van den Brink, P.J. (2009). Trait based Ecological Risk Assessment of chemicals, does taxonomy matters? SASAqS (The Southern African Society of Aquatic Scientists) 2009 Conference, Magaliesberg, South Africa.
- Van den Brink, P.J. (2009). Patterns, socio-economic issues and effects of pesticide use in Asia, South-Africa and South-America. 19th annual meeting of SETAC Europe, Göteborg, Sweden.
- Van den Brink, P.J. (2009). Career talk at the Young Environmental Scientists Meeting of SETAC Europe. 1st SETAC Young Environmental Scientists meeting, Landau, Germany.
- Van den Brink, P.J. (2006). Assessing ecosystem health and impairment by species traits and their relation to stressors. International Conference on Pesticide Use in Developing Countries, Arusha, Tanzania.
- Van den Brink, P.J. (2002). Multivariate Techniques: an Advanced Group of Methods to Link Biological and Chemical Data. Interact2002 meeting, Sydney, Australia.
- Van den Brink, P.J. (2001). Effects of remediation on sediment contaminant composition, sediment toxicity and benthic community structure in the delta of the rivers Rhine and Meuse. 6th international conference of the Aquatic Ecosystem Health and Management Society (AEHMS), Amsterdam, The Netherlands

Courses and trainings lectured

Paul is the coordinator and examiner of the course “Chemical Stress Ecology and Ecotoxicology” (6 credits) and a lecturer and examiner in the “Environmental Risk Assessment of Chemicals” (6 credits) taught at Wageningen University. The “Chemical Stress Ecology and Ecotoxicology” course has been evaluated by the students as very good (4.2 out of 5) and the contribution of Paul as excellent (4.6 out of 5). Since 1998 he has taught over 30 courses mainly on the ecological risk assessment of chemicals and the use of multivariate statistical methods for the analysis of ecotoxicological data sets. Most of these courses were tailor made and were held in Europe, Canada, USA, Costa Rica, Cameroon, Tanzania, South Africa, Vietnam, Australia and New Zealand. He was also teaching for several years in the Erasmus Intensive Program “Pollution in Europe”.

International workshops (2005 – present)

- Precaution workshop “Potential new descriptors of species sensitivity, stepping away from currently existing paradigms and encouraging outside the box ideas”. 13-14 March 2023. Wageningen, The Netherlands. Member of the steering committee.
- NORMAN network workshop “Ecosystem level effects of chemicals of emerging concern on aquatic ecosystems”. 21-22 November 2022, Online. Member of the steering committee.
- SETAC Pellston workshop “Integrating Global Climate Change (GCC) into Ecological Risk Assessment”. 20-23 June 2022, Oscarsborg, Norway.
- ECORISK2050 workshop “Chemical Risk in the Future”. 30 March – 2 April 2020, Wageningen, The Netherlands.
- CARES (Chemicals: Assessment of Risks to Ecosystem Services) II workshop. 21-22 January 2020, Brussels, Belgium. Member of the steering committee.

DEBtox modelling workshop. 2-3 December 2019, Wageningen, The Netherlands

Understanding the environmental and non-therapeutic health risks of increasing access to medicines in low- and middle-income countries. 8-11 September 2019, Nairobi, Kenya.

SETAC Special Science Symposium on “Extrapolation of Effects Across Biological Levels: Challenges to Implement Scientific Approaches in Regulation” 23–24 October 2018, Brussels, Belgium. Chair of the organising committee.

CARES (Chemicals: Assessment of Risks to Ecosystem Services) II workshop. 12 October 2018 Brussels, Belgium. Member of the steering committee.

StressNet – Scientific workshop for the advancement of multiple stressor models and databases. 13-15 September 2018, Landau, Germany.

Workshop on Terrestrial Environmental Risk Assessment of Plant Protection Products: Non-target Arthropods (NTAs) and Soil Invertebrates. 12 – 14 February 2018, Barcelona, Spain. Workshop rapporteur.

Multiple Stressor Workshop 2 (MSW2): Making Aquatic Ecosystems Great Again (MAEGA)! 18 – 21 September 2017, Wageningen, The Netherlands. Member of the steering committee.

FAO Working group on ground- and surface water risk assessment. 8 – 10 December 2015, Rome, Italy.

CARES (Chemicals: Assessment of Risks to Ecosystem Services) workshops. 15 – 16 July 2015, 3 – 4 May 2016, 24 – 15 November 2016 Brussels, Belgium. Member of the steering committee.

SETAC Global Horizon Scanning workshop. 6-7 May 2015, Barcelona, Spain. Member of the steering committee.

Ecotoxicology for B-EF research: designing novel multi-trophic B-EF experiments (sEcoToxDiv) sDiv Workshop 2.11. 15 – 18 December 2014, Leipzig, Germany. Member of the steering committee.

New diagnostics for multiply-stressed marine and freshwater ecosystems: integrating models, ecoinformatics and Big Data. 10 – 12 September 2014, Sydney, Australia. Member of the steering committee.

FAO Working group on pesticide registration by analogy. 26 – 28 March 2014, Rome, Italy.

IUPAC workshop on Nanopesticides. 17 – 18 May 2013, York, UK.

EU Workshop on how to use ecological effect models to link ecotoxicological tests to protection goals (second MODELINK workshop). 22 – 25 April 2013, Monschau, Germany.

EcoFINDERS traits workshop. 17 – 18 February 2013, Flörsheim, Germany.

EU Workshop on how to use ecological effect models to link ecotoxicological tests to protection goals (first MODELINK workshop). 22 - 25 October 2012, Le Croisic, France.

Latin American Aquatic Risk Assessment of Pesticides (LATARAP). 10 – 13 October 2012, Buenos Aires, Argentina. Member of the steering committee.

Environmental Contaminants and Long-Term Change in Tropical Forests. 24 – 26 February 2012, La Selva Biological Station, Costa Rica.

Influence of global climate change on the scientific foundation and application of environmental toxicology and chemistry. 16 – 21 July 2011, Racine, USA.

Pesticides, rice and wetlands. Ramsar Convention. 3 - 4 March 2011, Singapore.

Environmental assessment of down-the-drain chemicals in China. Unilever. 14 – 15 December 2010, Shanghai, China.

Future Impacts of Agricultural Contaminants on Ecosystem Services in South Asia. 22 – 25 November 2010, TERI, New Delhi, India.

TERA workshop: Trait-based Ecological Risk Assessment (TERA): Realising the potential of ecoinformatics approaches in ecotoxicology. 7 – 11 September 2009, Burlington, Ontario, Canada. Member of the steering committee.

PERAS workshop: Semi-field Methods for the Environmental Risk Assessment of Pesticides in Soil. 8 – 10 October 2007, Coimbra, Portugal. Workshop rapporteur.

2nd ELINK-Workshop Linking Aquatic Exposure and Effects in the Registration Procedure of Plant Protection Products. 19 – 21 September 2007. Wageningen, The Netherlands.

LEMTOX workshop: Ecological models in support of regulatory risk assessments of pesticides: Developing a strategy for the future. 9 – 12 September 2007, Leipzig, Germany. Member of the steering committee.

AMPERE workshop: Aquatic Mesocosms in Pesticide Registration in Europe: Recent Experiences. 24 – 25 April 2007, Leipzig, Germany.

1st ELINK-Workshop Linking Aquatic Exposure and Effects in the Registration Procedure of Plant Protection Products. 14– 16 March 2007. Bari, Italy.

Integrated analysis of the health, ecological and economic impacts of current pesticide use and management in the Red River Delta of Vietnam. WOTRO Workshop. 19 and 20 December 2005. Hanoi, Vietnam. Member of the steering committee.

New Improvements in the Aquatic Ecological Risk Assessment of Fungicidal Pesticides and Biocides. SETAC - ESF LESC Exploratory Workshop. 6 – 9 November 2005. Wageningen, The Netherlands. Member of the steering committee.

Towards a European framework for probabilistic assessment of the ecological risks of plant protection products. First end-user workshop of the EUFRAM project. 7 – 10 March 2005. Brussels, Belgium.

Models

ERA-AQUA (www.era-aqua.wur.nl) is a decision support system that is developed to estimate risks of veterinary medicinal products applied in pond aquaculture for the targeted produce, surrounding aquatic ecosystems, consumers and trade. The ERA-AQUA can be used to perform risk assessments in a wide range of aquaculture scenarios based on information on environmental characteristics, aquaculture management practices and physico-chemical and toxicological properties of the compound under study.

PERPEST (www.perpest.wur.nl) is an information model designed to Predict the Ecological Risks of PESTicides. The underlying concept of this is Case-Based Reasoning. In the model, the Case-Base comprises results from microcosm and mesocosm experiments. Previous experiences (results of field experiments) have been stored in the memory and used to predict direct effects in new situations or with other compounds. The model output shows the direct effects of eight groups of endpoints simultaneously.

PRIMET (www.primet.wur.nl) is a decision support system for assessing Pesticide Risks in the tropics to Man, Environment and Trade that is based on risk assessment procedures used in the European Union. The DSS is able to estimate the risks of pesticide application to 1) aquatic life, 2) terrestrial life, 3) the use of groundwater as drinking water and 4) dietary exposure via the consumption of groundwater, vegetables, fish and macrophytes. The risks are assessed at the household level, i.e. actual pesticide application data on a farmer's level is needed as input parameters. The risk assessment is expressed in Exposure Toxicity Ratio's which are calculated by dividing the exposure by the safe concentration.

MASTEP (www.mastep.wur.nl) is a Metapopulation model for Assessing Spatial and Temporal Effects of Pesticides and describes the decline and subsequent recovery of invertebrate populations after a periodic exposure to pesticides. The modelled landscape for MASTEP is represented as a lattice of connected cells, which have a dimension of 1 by 1 metre. The MASTEP model is an Individual Based Model (IBM) that includes processes of

natural mortality, pesticide induced mortality, reproduction and movement between cells. It takes into account density dependence in population regulation and, in case of the stream scenario, medium-distance transport of invertebrates due to water flow. The model is currently parameterised for aquatic populations of *Asellus aquaticus*, *Gammarus pulex*, *Chironomus* sp. and univoltine and multivoltine mayflies, but more species will be added.

Key Publications

- Van den Brink, P.J. (2008). Ecological risk assessment: from book-keeping to chemical stress ecology. *Environ. Sci. Technol.* 42: 8999 – 9004.
- Van den Brink, P.J., S.A. Bracewell, A. Bush, A. Chariton, C.B. Choung, Z.G. Compson, K.A. Dafforn, K. Korb, M. Mayer-Pinto, W.A. Monk, A. L. O'Brien, N.K. Rideout, R.B. Schäfer, K.A. Sumon, R.C.M. Verdonschot and D.J. Baird (2019). Towards a general framework for the assessment of interactive effects of multiple stressors on aquatic ecosystems: Results from the Making Aquatic Ecosystems Great Again (MAEGA) workshop. *Science of the Total Environment.* 684: 722-726.
- Van den Brink, P.J., A.B.A. Boxall, L. Maltby, B.W. Brooks, M.A. Rudd, T. Backhaus, D. Spurgeon, V. Verougstraete, C. Ajao, G.T. Ankley, S.E. Apitz, K. Arnold, T. Brodin, M. Cañedo-Argüelles, J. Chapman, J. Corrales, M-A. Coutellec, T.F. Fernandes, J. Fick, A.T. Ford, G. Giménez Papiol, K.J. Groh, T.H. Hutchinson, H. Kruger, J.V.K. Kukkonen, S. Loutseti, S. Marshall, D. Muir, M.E. Ortiz-Santaliestra, K.B. Paul, A. Rico, I. Rodea-Palomares, J. Römbke, T. Rydberg, H. Segner, M. Smit, C.A.M. van Gestel, M. Vighi, I. Werner, E.I. Zimmer and J. van Wensem (2018). Towards sustainable environmental quality: priority research questions for Europe. *Environ. Toxicol. Chem.* 37: 2281-2295
- Van den Brink, P.J. and C.J.F. Ter Braak (1999). Principal Response Curves: analysis of time-dependent multivariate responses of a biological community to stress. *Environ. Toxicol. Chem.* 18: 138-148. Won the SETAC best publication award on environmental research for the year 2000.
- Schuijt, L.M., F-J. Peng, S.J.P. van den Berg, M.M.L. Dingemans and P.J. Van den Brink (2021). Ecotoxicological tests for assessing impacts of chemical stress to aquatic ecosystems: facts, challenges, and future. *Science of the Total Environment.* 795: 148776.

Publications (extended list)

PhD Thesis

Van den Brink, P.J. (1999). Ecological and statistical evaluation of effects of pesticides in freshwater model ecosystems. PhD Thesis Wageningen University, Wageningen, The Netherlands.

Peer reviewed papers

- 281 Huang, A., P.J. Van den Brink, N.W. Van den Brink and J. Baas (Submitted). A dynamic energy budget (DEB) model to assess the sublethal effects of imidacloprid toward *Gammarus pulex* at different temperatures.
- 280 Hermann, M., F. Polazzo, L. Cherta, M. Crettaz-Minaglia, A. García-Astillero, E.T.H.M. Peeters, A. Rico, and P.J. Van den Brink (Submitted). Combined stress of an insecticide and heatwaves or elevated temperature induce community and food web effects in a Mediterranean freshwater ecosystem.
- 279 Moe, S.J., K. Brix, W.G. Landis, J. Stauber, J. Carriger, J.D. Hader, T. Kunimitsu, S. Mentzel, R. Nathan, P. Noyes, R. Oldenkamp, J. Rohr, P.J. Van den Brink, J. Verheyen, R.E. Benestad (Accepted). Integrating climate model projections into environmental risk assessment: a probabilistic modeling approach. *Integrated Environmental Assessment and Management*
- 278 Mentzel, S., R. Nathan, P. Noyes, S.J. Moe, K. Brix, J. Rohr, J. Verheyen, P.J. Van den Brink and J. Stauber (Accepted). Evaluating the effects of climate change and chemical, physical and biological stressors on nearshore coral reefs: A case study in the Great Barrier Reef, Australia. *Integrated Environmental Assessment and Management*
- 277 Schuijt, L.M., C.K.E. van Drimmelen, L.L. Buijse, J. van Smeden, D. Wu, M-C. Boerwinkel, D.J.M. Belgers, A.M. Matser, I. Roessink, K.K. Beentjes, K.B. Trimbos, H. Smidt and P.J. Van den Brink (2024). Assessing ecological responses to exposure to the antibiotic sulfamethoxazole in freshwater mesocosms. *Environmental Pollution* 343: 123199.
- 276 Mentzel, S., C. Martínez-Megías, M. Grung, A. Rico, K.E. Tollefsen, P.J. Van den Brink and S.J. Moe (2024). Using a Bayesian network model to predict risks of pesticides on aquatic community endpoints in a rice field – A southern European case study. *Environmental Toxicology and Chemistry* 43: 182–196.
- 275 Schuijt, L.M., J. van Smeden, C.K.E. van Drimmelen, L.L. Buijse, D. Wu, M-C. Boerwinkel, D.J.M. Belgers, A.M. Matser, I. Roessink, I. Heikamp-de Jong, K.K. Beentjes, K.B. Trimbos, H. Smidt and P.J. Van den Brink (2024). Effects of antidepressant exposure on aquatic communities assessed by a combination of morphological identification, functional measurements, environmental DNA metabarcoding and bioassays. *Chemosphere* 349: 140706.
- 274 Cabecinha, E., M.Â. Pardo, J.A. Cabral, S.M. Monteiro, R. Cortes, M.J. Saveedra, S. Varandas and P.J. Van den Brink (2024). Assessing the ecological potential of reservoirs: a principal response curve (PRC) analysis approach. *Hydrobiologia* 851: 25–44.
- 273 Mangold-Döring, A., J. Baas, A. Focks, P.J. Van den Brink and E. Van Nes (2023). A toxicokinetic-toxicodynamic model to assess effects of temperatures. *Environ. Sci. Technol.* 57: 21029–21037
- 272 Zhao, Q., P.J. Van den Brink, C. Xu, S. Wang, A.T. Clack, C. Karakoç, G. Sugihara, C.E. Widdicombe, A. Atkinson, S. Matsuzaki, R. Shinohara, S. He, Y.X.G. Wang and F. De Laender (2023). Relationships of temperature and biodiversity with stability of natural aquatic food webs. *Nature Communications* 14: 3507.
- 271 Hermann, M., E.T.H.M. Peeters and P.J. Van den Brink (2023). Heatwaves, elevated temperatures, and a pesticide cause interactive effects on multi-trophic levels of a freshwater ecosystem. *Environmental Pollution*. 327: 121498.
- 270 Schuijt, L.M., O. Olusoji, A. Dubey, P. Rodríguez-Sánchez, R. Osman, P.J. Van den Brink and S.J.P. van den Berg (2023). Effects of the antidepressant fluoxetine on the swimming behaviour of the amphipod *Gammarus pulex*: comparison of short-term and long-term toxicity in the laboratory and the semi-field. *Science of the Total Environment*. 872: 162173.
- 269 Teklu, B.M., S. Deniz Yakan and P.J. Van den Brink (2023). The use of a simple model for the regulatory environmental risk assessment of pesticides in Ethiopia. *Chemosphere* 316: 137794.

- 268 Huang, A., A. Mangold-Döring, H. Guan, M-C. Boerwinkel, D. Belgers, A. Focks and P.J. Van den Brink (2023). The effect of temperature on toxicokinetics and the chronic toxicity of insecticides towards *Gammarus pulex*. *Science of the Total Environment*. 856: 158886.
- 267 Saraiva, T.C.S, S.H. Ventura, E.S. Brito Junior, S.M.B. Rocha, R.M. Costa, A.P.d.A. Pereira, R.S. de Sousa, J.P. Verma, P.J. Van den Brink and A.S.F. Araujo (2022). Temporal stability of soil microbial properties in responses to long-term application of compost obtained from tannery sludge. *Sustainability*. 14: 16736.
- 266 Mangold-Döring, A., A. Huang, E.H. Van Nes, A. Focks and P.J. Van den Brink (2022). Explicit consideration of temperature improves predictions of toxicokinetic-toxicodynamic models for flupyradifurone and imidacloprid in *Gammarus pulex*. *Environ. Sci. Technol.* 56: 15920–15929
- 265 Huang, A., A. Mangold-Döring, A. Focks, C. Zhang and P.J. Van den Brink (2022). Comparing the acute and chronic toxicity of flupyradifurone and imidacloprid to nontarget aquatic arthropod species. *Ecotoxicology and Environmental Safety* 243: 113977
- 264 Huang, A., I. Roessink, N.W. Van den Brink and P.J. Van den Brink (2022). Size- and sex-related sensitivity differences of aquatic crustaceans to imidacloprid. *Ecotoxicology and Environmental Safety* 242: 113917.
- 263 Turschwell, M.P., R. Ashauer, M.D. Campbell, R. Connolly, S.R. Connolly, I.M. Côté, F. De Laender, M. Jackson, M. Kattwinkel, C. Mantyka-Pringle, R.B. Schäfer, M. Sievers, P.J. Van den Brink and C.J. Brown (2022). Interactive effects of multiple stressors vary with consumer interactions, stressor dynamics and magnitude. *Ecology Letters* 25: 1483 –1496.
- 262 Yao, K-S., Y-J. He, P.J. Van den Brink, Y-N. Dai, Y. Yang and Y-D. Cui (2022). Multivariate approaches to assess the drivers of benthic macroinvertebrate communities and biotic indices in a highly urbanized fluvial-estuarine system. *Ecological Indicators* 139: 108856.
- 261 Hermann, M., R. Jansen, J. van de Glind, E.T.H.M. Peeters and P.J. Van den Brink (2022). A transportable temperature and heatwave control device (TENTACLE) for laboratory and field simulations of different climate change scenarios in aquatic micro- and mesocosms. *HardwareX* 11: e00307
- 260 Yang Y, S. Li, Z. Wang , Y. Mu, X. Zhang, P.J. Van den Brink, H. Sun, Y. Song and B. Cheng (2022). Acute toxicity, bioaccumulation and elimination of prometryn in tilapia (*Oreochromis niloticus*). *Chemosphere* 300: 134565.
- 259 Polazzo, F., S.K. Roth, M. Hermann, A. Mangold-Döring, A. Rico, A. Sobek, P.J. Van den Brink and M.C. Jackson (2022). Combined effects of heatwaves and micropollutants on freshwater ecosystems: towards an integrated assessment of extreme events in multiple stressors research. *Global Change Biology* 28: 1248-1267.
- 258 Van de Perre, D., D. Li, K-S. Yao, H-J. Lei, P.J. Van den Brink and G-G. Ying (2022). The effects of the chemotherapy drug cyclophosphamide on the structure and functioning of freshwater communities under sub-tropical conditions. *Science of the Total Environment* 806: 150678.
- 257 Welch, S.A., T. Lane, A.O.S Desrousseaux, J. van Dijk, A. Mangold-Döring, R. Gajraj, J.D. Hader, M. Hermann, A.P. Ayillyath, S. Mentzel, P. Nagesh, F. Polazzoh, S.K. Roth, A.B.A. Boxall, B. Chefetz, S.C. Dekker, J. Eitzinger, M. Grung, M. MacLeod, S.J. Moe, A. Rico, A. Sobek, A.P. van Wezel and P.J. Van den Brink (2021). ECORISK2050: An Innovative Training Network for predicting the effects of global change on the emission, fate, effects, and risks of chemicals in aquatic ecosystems. *Open Research Europe* 1: 154.
- 256 Onwona Kwakye, M., F-J. Peng, J.N. Hogarh and P.J. Van den Brink (2021). Linking macroinvertebrates and physicochemical parameters for water quality assessment in the lower basin of the Volta River in Ghana. *Environmental Management* 68: 928 – 936.
- 255 Van de Perre, D., K-S. Yao, D. Li, H-J. Lei, P.J. Van den Brink and G-G. Ying (2021). Imidacloprid treatments induces cyanobacteria blooms in freshwater communities under sub-tropical conditions. *Aquatic Toxicology* 240: 105992.
- 254 Van den Brink, P.J., A. Alix, P. Thorbek, H. Baveco, A. Agatz, J.H. Faber, A.R. Brown, S. Marshall and L. Maltby (2021). The use of ecological models to assess the effects of a plant protection product on ecosystem services provided by an orchard. *Science of the Total Environment*. 798: 149329
- 253 Maltby, L., A.R. Brown, J.H. Faber, N. Galic, P.J. Van den Brink, O. Warwick and S. Marshall (2021). Assessing chemical risk within an ecosystem services framework: implementation and added value. *Science of the Total Environment*. 791: 148631

- 252 Faber, J.H., S. Marshall, A.R. Brown, A. Holt, P.J. van den Brink and L. Maltby (2021). Identifying ecological production functions for use in ecosystem services-based environmental risk assessment of chemicals. *Science of the Total Environment*. 791: 146409
- 251 Schuijt, L.M., F.-J. Peng, S.J.P. van den Berg, M.M.L. Dingemans and P.J. Van den Brink (2021). Ecotoxicological tests for assessing impacts of chemical stress to aquatic ecosystems: facts, challenges, and future. *Science of the Total Environment*. 795: 148776.
- 249 Merga, L.B. and P.J. Van den Brink (2021). Ecological effects of imidacloprid on a tropical freshwater ecosystem and its recovery dynamics. *Science of the Total Environment*. 784: 147167.
- 248 Huang, A., N.W. van den Brink, L. Buijse, I. Roessink and P.J. Van den Brink (2021). Toxicokinetics and biotransformation of imidacloprid can explain species sensitivity differences and its increased toxicity with time. *Aquatic Toxicology*. 235: 105837
- 247 Brown, A.R., S. Marshall, C. Cooper, P. Whitehouse, P.J. Van den Brink, J.H. Faber and L. Maltby (2021). Assessing the feasibility and value of employing an ecosystem services approach in chemical environmental risk assessment under the Water Framework Directive. *Science of the Total Environment*. 789: 146857
- 246 Perujo N., P.J. Van den Brink, H. Segner, C. Mantyka-Pringle, S. Sabater, S. Birk, A. Bruder, F. Romero and V. Acuña (2021). A guideline to frame stressor effects in freshwater ecosystems. *Science of the Total Environment*. 777: 146112.
- 245 Vilas-Boas, J.A., A. Arenas-Sánchez, M. Vighi, S. Romo, P.J. Van den Brink, R.J.P. Dias and A. Rico (2021). Multiple stressors in Mediterranean coastal wetland ecosystems: influence of salinity and an insecticide on zooplankton communities under different temperature conditions. *Chemosphere*. 269: 129381.
- 244 Brock, T.C.M., M. Arena, N. Cedergreen, S. Charles, S. Duquesne, A. Ippolito, M. Klein, M. Reed, I. Teodorovic, P.J. Van den Brink and A. Focks (2021). Application of GUTS models for regulatory aquatic pesticide risk assessment illustrated with an example for the insecticide chlorpyrifos. *Integrated Environmental Assessment and Management*. 17: 243-258.
- 243 Merga, L.B., A.A. Mengistie, M.T. Alemu and P.J. Van den Brink (2021). Biological and chemical monitoring of the ecological risks of pesticides in Lake Ziway, Ethiopia. *Chemosphere* 266: 129214.
- 242 Peng, F.-J., C.J.F. ter Braak, A. Rico and P.J. Van den Brink (2021). Double constrained ordination for assessing biological trait responses to multiple stressors: a case study with benthic macroinvertebrate communities. *Science of the Total Environment* 754: 142171
- 241 Van den Berg, S.J.P., L. Maltby, T. Sinclair, R. Liang and P.J. van den Brink (2021). Cross-species extrapolation of chemical sensitivity. *Science of the Total Environment*. 753: 141800
- 240 Araujo, A.S.F., W.J. de Melo, F.F. Araujo and P.J. Van den Brink (2020). Long-term effect of composted tannery sludge on soil chemical and microbial properties. *Environ. Sci. Pollut. Res.* 27: 41885–41892
- 239 Merga, L.B., P.J. Van den Brink, J.H. Faber and A.A. Mengistie (2020). Trends in chemical pollution and ecological status of lake Ziway, Ethiopia: A review focussing on nutrients, metals and pesticides. *African Journal of Aquatic Science* 45: 386–400
- 238 Zhao, Q., F. De Laender and P.J. Van den Brink (2020). Community composition modifies direct and indirect effects of pesticides in freshwater food webs. *Science of the Total Environment*. 739: 139531
- 237 Van den Berg, S, C. Rendal, A. Focks, E. Butler, ETHM Peeters, F. De Laender and P.J. van den Brink (2020). Potential impact of chemical stress on freshwater invertebrates: A sensitivity assessment on continental and national scale based on distribution patterns, biological traits, and relatedness. *Science of the Total Environment*. 731: 139150
- 236 Dulio, V., J. Koschorreck, B. van Bavel, P.J. Van den Brink, J. Hollender, J. Munthe, M. Schlabach, R. Aalizadeh, M. Agerstrand, L. Ahrens, I. Allan, N. Alygizakis, D. Barcelo, P. Bohlin-Nizzetto, S. Boutroup, W. Brack, A. Bressy, J.H. Christensen, L. Cirka, A. Covaci, A. Derksen, G. Deviller, M.M.L. Dingemans, M. Engwall, D. Fatta-Kassinos, P. Gago-Ferrero, F. Hernández, D. Herzke, K. Hilscherová, H. Hollert, M. Junghans, B. Kasprzyk-Hordern, S. Keiter, S.A.E. Kools, A. Krueve, D. Lambropoulou, M. Lamoree, P. Leonards, B. Lopez, M. López de Alda, L. Lundy, J. Makovinská, I. Marigómez, J.W. Martin, B. McHugh, C. Miège, S. O' Toole, N. Perkola, S. Polesello, L. Posthuma, S. Rodríguez-Mozaz, I. Roessink, P. Rostkowski, H. Ruedel, S. Samanipour, T. Schulze, E. Schymanski, M. Sengl, P. Tarábek, D. Ten Hulscher, N. Thomaidis, A. Togola, S. Valsecchi, S. van

- Leeuwen, P. von der Ohe, K. Vorkamp, B. Vrana and J. Slobodnik (2020). The NORMAN Association and the European Partnership for Chemicals Risk Assessment (PARC): Let's cooperate! *Environ. Sci. Eur.* 32:100
- 235 Merga, L., P.E. Redondo-Hasselerharm, P.J. Van den Brink and A.A. Koelmans (2020). Distribution of microplastic and small macroplastic particles across four fish species and sediment in an African lake. *Science of the Total Environment.* 741: 140527
- 234 Pertile, M., J.E.L. Antunes, F.F. Araujo, P.J. Van den Brink, A.S.F. Araujo (2020) Responses of soil microbial biomass and activity to herbicides imazethapyr and flumioxazin. *Scientific Reports* 10: 7694
- 233 Orr, J., R. Vinebrooke, M. Jackson, K. Kroeker, R. Kordas, C. Mantyka-Pringle, P.J. Van den Brink, F. De Laender, R. Stoks, M. Holmstrup, C. Matthaei, W. Monk, M. Penk, S. Leuzinger, R. Schäfer and J. Piggott (2020). Towards a unified study of multiple stressors: divisions and common goals across research disciplines. *Proc. R. Soc. B.* 287: 20200421.
- 232 Onwona-Kwakye, M., J.N. Hogarh and P.J. Van den Brink (2020). Environmental risk assessment of pesticides currently applied in Ghana. *Chemosphere* 254: 126845.
- 231 Onwona Kwakye, M., K. Paris-Plants, J. Lee, P.J. Van den Brink, J.N. Hogarh and C. Darkoh (2020). Pesticides decrease the microbial species composition of irrigated rice fields. *Microorganisms* 8: 318.
- 230 Cheng, B., J. Van Smeden, J. Deneer, D. Belgers, E. Foekema, I. Roessink, A. Matser and P.J. Van den Brink (2020). The chronic toxicity of emamectin benzoate to three marine benthic species using microcosms. *Ecotoxicology and Environmental Safety* 194: 110452.
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