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# PATRICIA HOLM

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## CURRENT POSITIONS

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**PROF. DR. RER. NAT. / PROFESSOR OF ECOLOGY**

**HEAD OF THE PROGRAM “MAN – SOCIETY - ENVIRONMENT” (MGU)**

Since 2003

Department of Environmental Sciences, University of Basel, Switzerland

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### CONTACT DETAILS

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### WEBSITES

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<https://mgu.unibas.ch>  
[https://mgu.unibas.ch/en/team/  
patricia-burkhardt-holm](https://mgu.unibas.ch/en/team/patricia-burkhardt-holm)

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### PRIVATE ADDRESS

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Dullikerstr. 5  
CH-4656 Starrkirch-Wil  
+41 79 640 02 70

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## PROFESSIONAL EXPERIENCE

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- 1999 – 2003      **DIRECTOR OF THE NATIONAL RESEARCH PROGRAM ON FISH CATCH DECLINE “NETZWERK FISCHRÜCKGANG SCHWEIZ” (FISCHNETZ)**  
EAWAG, Dübendorf, Switzerland
- 1992 – 1999      **ASSISTANT PROFESSOR**  
Interdisciplinary Center for General Ecology, University of Bern and  
Institute for Animal Pathology, University of Bern
- 1997– 1999      **DEPUTY DIRECTOR OF THE DEPARTMENT FOR ELECTRON MICROSCOPY**  
University of Bern
- 1990 – 1992      **POST-DOC**  
Department of Neurobiology, Swiss Federal Institute of Technology (ETH),  
Zurich, Switzerland (50%)
- 1989 – 1990      **CONSULTANT FOR BIOLOGY AND ECOLOGY**  
RauCon Bioinformatics and Consulting GmbH, Dielheim, Germany

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## EDUCATION

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- 1999              **VENIA DOCENDI**  
for Ecology, Phil. Nat. Faculty  
University of Bern
- 1989              **PH.D., SUMMA CUM LAUDE**  
Title: Histochemische und cytologische Untersuchungen zum Darm von  
Osteichthyes und die Beeinflussung durch Ernährungsbedingungen und  
toxische Substanzen  
(Histochemical and electron microscopical studies on the intestinal tract of  
teleosts under different nutritional conditions)  
Zoological Institute I, University of Heidelberg, Germany
- 1985              **M.SC.**  
Biology and Sports Science  
Ruprecht-Karls-University Heidelberg, Germany

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## EDUCATIONAL GRANTS

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1997	Travel grant, “Schweizerische Hochschulstiftung”, for participation at the Ultrastructural Pathology of Toxicologic Diseases workshop, Ames, Iowa, USA
1994 – 1999	Grant for the promotion of junior scientists, “Nachwuchsförderungsprogramm des Bundes” (Federal support fund for young researchers), Swiss Federal Government
1991 – 1993	Educational grant “Deutsche Forschungsgemeinschaft” (DFG, German Research Council), Title: Auftreten ausgewählter Erkennungsmoleküle bei der Neurogenese, der Bildung, der Wanderung und Differenzierung von Neuronen im HVC, einem Kerngebiet des vokalmotorischen Systems adulter Zebrafinken (Title: Occurrence of selected recognition molecules in neurogenesis, development, migration and differentiation of neurones in HVC, a nucleus in the vocalmotor system of adult zebrafishes)
1988	Grant for the preparation of the thesis, “Studienstiftung des Deutschen Volkes”, German National Merit Foundation
1987	“Deutscher Akademischer Austauschdienst” (German Academic Exchange Service) for a short term professional stay (2 months) in Goteborg, Sweden
1987	“Landesgraduiertenförderungsgesetz Baden-Württemberg”, Graduate Government Aid
1982 – 1985	“Studienstiftung des Deutschen Volkes”, German National Merit Foundation

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## EXTENDED PROFESSIONAL STAYS ABROAD

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2012 - 2020	Several stays at NTU, Singapore, in the context of planning projects and conferences on higher education for sustainability
2008 - 2018	Several stays at AWRI Alberta Water Research Institute and University of Alberta, Edmonton, Canada, in the frame of research projects and adjunct professorship
1998	Team of Dr. C. Hogstrand, Thomas Hunt Morgan School of Biological Sciences, University of Kentucky, Lexington, Kentucky, USA (2 months)

- 1987 Team of Dr. S. Holmgren, Institute for Zoophysiology, University of Goteborg, Sweden (two months)
- 1983 University of San Carlos, Cebu City and Iloilo, Southeast-Asian Fisheries Development Center (SEAFDEC), Philippines (two months)

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### ACADEMIC HONOURS AND MERITS

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- 2022 Award for the 2<sup>nd</sup> best poster: Wiegleb, J., Hirsch, Ph. E., Seidel, F., Rauter, G., **Burkhardt-Holm, P.** "Swimming competition! Who beats the flow in a hydraulic barrier for invasive fish?", INTECOL 2022 congress, 28.8.-2.9.2022
- 2006 Award for the best poster: Knauer, S., Bopp, S., **Burkhardt-Holm, P.**, Knauer, K. Contaminant-stimulated oxidative stress in algal and fish cells. Workshop on environmental chemistry and ecotoxicology, Geneva, February 2006.
- 2005 Award for the best poster: Bopp, S., **Holm, P.** and Knauer, K. "Ist die Detektion reaktiver Sauerstoffspezies (ROS) ein geeigneter unspezifischer Biomarker für Mikroverunreinigungen?", 10th Annual Meeting of SETAC-GLB, 28.-30. September 2005, Basel
- 2003 Merit bonus from EAWAG (course "International Water Management")
- 2002 ALTEX Award by FFVFF ("Stiftung Fonds für versuchstierfreie Forschung", Zurich) for the publication: Schweigert, N., Eggen, R.I.L., Escher, B.I., **Burkhardt-Holm, P.** and Behra, R. "Ecotoxicological Assessment of Surface Waters: A Modular Approach Integrating In Vitro Methods". ALTEX 19, Supplement 1, 30-37.
- 2000 Merit bonus from EAWAG for project "Fischnetz"
- 1999 Berner Umweltforschungspreis for the habilitation thesis, University of Bern

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# PATRICIA HOLM

## TRACK RECORD

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Publications	26
Public Outreach (Selection)	63

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## ADDITIONAL PROFESSIONAL ACTIVITIES

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### SELECTED CURRENT ADDITIONAL PROFESSIONAL ACTIVITIES

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since 2022	Member of the International Scientific Advisory Board, University of Frankfurt a.M., Germany
since 2021	Member of the Board of Trustees International Convention of Environmental Laureates
since 2021	Member of the Academia Europaea
since 2020	Vice president of the Swiss Committee on Polar and High Altitude Research (SKPH). Swiss Academies of Sciences.
since 2019	Deputy president of the Committee “Naturhistorisches Museum Basel”
since 2017	Member of the Committee “Naturhistorisches Museum Basel”
since 2015	Member of the Scientific Advisory Board “Naturforschende Gesellschaft Senckenberg”, Frankfurt a. Main, Germany
since 2010	Founding Member of “International Centre for Water Management Services” (CEWAS), Willisau, Switzerland
since 2010	Member of the Board of “Foundation for Information and Research on Marine Mammals” (firmm) Switzerland and Spain
since 2009	Swiss delegate for the International Whaling Commission (IWC), scientific committee and steering committee member of the sub-commission “Pollution 2000+”
since 2008	Member of “Society of Environmental Toxicology and Chemistry Europe” (SETAC)
since 2008	Mentor of the Swiss Study Foundation
since 2005	Representative of the Faculty of Science and Chairperson of the curriculum commission of the Master’s Degree in Sustainable Development at the University of Basel
since 1995	Member of “European Association of Fish Pathologists” (EAFP)

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 PREVIOUS ADDITIONAL PROFESSIONAL ACTIVITIES (SELECTED)
 

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2019 – 2022	Appointed convenor/chair subcommisson ‘Environmental Concern’, Scientific Committee, International Whaling Commission
2020	Expert for the SNF research commission
2019	Swiss expert of the Scientific Advisory Committee on ‘Marine Plastic Litter and Microplastics’ of the UN Environment Program (UN Environmental Resolution 4).
2014 – 2019	Member of the Scientific Board of the State Museums of Natural History Karlsruhe and Stuttgart, Germany
2013 – 2020	Member of the Steering Committee of the Foundation of “Schweizerische Greina-Stiftung” (SGS)
2011 – 2018	Adjunct Professor, Department of Biological Sciences, University of Alberta, Edmonton, Canada
2011 – 2015	Member of the Steering Committee of the “Research Center for Sustainable Energy and Water Supply” at the University of Basel
2010 – 2013	Member of the Scientific Board of “Biodiversity and Climate Research Center” (BiK-F), Frankfurt a.M., Germany
2007 – 2016	Member of the Scientific Board of “Institute for Social-Ecological Research” (ISOE), Frankfurt a. M., Germany
2007 – 2011	Member of the Expert Group “Ecotoxicology of the Swiss Federal Office for Environment” (FOEN)
2007 – 2014	Member of the “Center for Xenobiotic and Environmental Risk Research” (XERR), Zurich, Switzerland
2005 – 2007	Member of the Scientific Board of “Swiss Federal Institute for Forest, Snow and Landscape Research” (WSL), institution of the “Swiss Federal Institute of Technology” (ETH)
2004 – 2010	Member of the Project Team “Pilotregion Basel der 2000-Watt-Gesellschaft”
2004 – 2010	Member of the Commission “Hochschule neu denken”, Altner-Combecher Foundation Hannover, Germany
2003 – 2008	Member and president of the Steering Committee “Fischnetz plus” (FN+)
2003 – 2007	Member of the Board “Swiss Academy Society for Environmental Research and Ecology” (SAGUF)
2002 – 2007	Member of the Foundation Board of “Praktischer Umweltschutz Schweiz” (PUSCH)

- 2002 – 2004 Member of the Swiss Working Group “Gewässerschutzkonzeption 21” (KVU)
- 1999 – 2010 Member of the Swiss Expert Commission “Endocrine Active Compounds” of the Swiss Federal Office for Environment (FOEN)
- 1993 – 1996 Member of the “Commission of European Affairs”, University of Bern
- 1993 – 1995 Member of the “Commission of Environmental Observation, Switzerland” (SKUB)



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## MAJOR RESEARCH INTERESTS

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- Ecology, biology, physiology, biochemistry and ecotoxicology of aquatic animals, especially fish, but also invertebrates and marine mammals
- Effects of natural and anthropogenic stress factors, such as microplastics, temperature, fine sediments, synthetic chemicals, hormones and food on aquatic organisms
- Invasive species in aquatic ecosystems
- Microplastics in aquatic and terrestrial ecosystems
- Education for sustainability

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**ORGANIZATION OF MEETINGS AND WORKSHOPS**

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- 2021 Pollution 2025, IWC Intersessional Workshop (Chair), online, 01.-04.11.2021
- 2017 Network in Education for Sustainability Asia Conference, Singapore, Program Committee, 02- 03. 05. 2017
- 2013 Academia Engelberg: Food Security, Program Committee, Engelberg, 15.10. 2014
- 2012 Mini-Symposium, Research at MGU, Basel, 24. 09. 2012
- 2011 Mini-Symposium, MGU & Center for Fish and Wildlife Research, Basel, 18. 11. 2011
- 2005 10. Annual Meeting SETAC-GLB, Basel, 28.–30.09.2005
- 1999- 2003 Annual Meeting 'Project Fish Catch Decline in Switzerland' (Chair)

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## REVIEWER ACTIVITY (SELECTION)

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### SCIENTIFIC JOURNALS AND BOOKS

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Aquatic Toxicology; Aquatic Sciences; Aquatic Biology; Biological Chemistry; Cambridge University Press; Canadian Journal of Fisheries and Aquatic Sciences; Canadian Journal of Zoology; Cell and Tissue Research; Cellular and Molecular Life Sciences; Chemosphere; Comparative Biochemistry & Physiology, Conservation Biology, Developmental and Comparative Immunology; Diseases of Aquatic Organisms; Ecological Applications; Environment Asia Journal; Environmental Chemistry; Environment International; Environmental Pollution; Environmental Science and Technology; Environmental Science and Pollution Research; Environmental Toxicology and Chemistry; Gaia, Global Change Biology; Histochemical Journal; Fish Physiology and Biochemistry; Marine Biology; Nature Communications; Parasite Epidemiology and Control; PLOS ONE; Proceedings of the Royal Society B; Science of the Total Environment; Scientific Reports; Water Research and various books and book chapters (for publishers such as Springer, Routledge, et al.)

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### SCIENCE FOUNDATIONS, EVALUATION PANELS AND FUNDING BOARDS

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Akademien der Wissenschaften Schweiz (*Swiss Academies of Arts and Sciences*); BMBF-Förderinitiative "Soziale Dimensionen von Klimaschutz und Klimawandel"; Deutsche Bundesstiftung Umwelt DBU (*German Federal Environmental Foundation*), Deutsche Forschungsgemeinschaft DFG (*German National Science Foundation*), Exploratory Grants Evaluation Panel of the Swiss Polar Institute; European Academies Science Advisory Council (EASAC); foraus - Swiss Forum on Foreign Policy; German Research Foundation, Microplastic; Geschäftsstelle des Gutachterpanels Forschungsschiffe (GPF) (*German Research Vessels Portal*); Leibniz-Institute for Freshwater Ecology and Inland Fisheries, Berlin; Nanyang Technological University, Singapore; Federal Veterinary Office (Schweiz), Faculty of Life Sciences, University of Frankfurt; Swiss National Science Foundation (SNF); Swiss Polar Institute; Alfred-Wegener-Institut, Helmholtz-Zentrum für Polar- und Meeresforschung (AWI)

## TEACHING ACTIVITIES

LECTURES	TIME FRAME
<i>Sustainable Development: Introduction into Topics and Approaches*</i> (3)	Since Fall 2017
<i>Der Fisch und seine Umwelt</i> (2)	Spring 2004 – Fall 2014
<i>Principles and Processes of Ecosystems*</i> (2)	Fall 2011
<i>Umweltwissenschaften II Naturwissenschaftliche Grundlagen</i> (3)	Fall 2003-Fall 2006
LECTURES WITH EXERCISES/TUTORIALS	TIME FRAME
<i>Perspectives of natural sciences on sustainability</i> (3)	Since Fall 2015
<i>Grundkurs II: naturwissenschaftliche Grundlagen der Nachhaltigkeit</i> (3)	Fall 2007 - Fall 2014
<i>Quantitative und qualitative Aspekte globaler Wasserfragen</i> (4)	Spring 2012 – Spring 2013
COURSES	TIME FRAME
<i>Sustainability in Practice</i> *(2)	Since Fall 2021
<i>Nachhaltige Entwicklung: Einführung in Thema und MSD-Studium*</i> (1)	Fall 2010 – Fall 2016
<i>Research Design Master's Thesis</i> *(3)	Since Spring 2018
SEMINARS	TIME FRAME
<i>Vorbereitung für Projektarbeit*</i> (3)	Spring 2011 – Spring 2017
<i>Bioinvasoren und Klimawandel*</i> (3)	Spring 2013 – Spring 2014
<i>Quantitative und qualitative Aspekte globaler Wasserfragen</i> (3)	Spring 2009 – Spring 2014
<i>Vorbereitung für Projekt: Sustainability Assessment*</i> (3)	Spring 2013
<i>Umweltprobleme und ihre Auswirkung auf natürliche Ressourcen und ihre Nutzbarkeit</i> (3)	Spring 2006 – Spring 2008
<i>Ökologische Aspekte urbaner Räume</i> (3)	Spring 2008
<i>2000-Watt-Gesellschaft</i> * (3)	Fall 2007
<i>Fisch und Umwelt: Ökotoxikologie*</i> (3)	Fall 2004 – Fall 2005
<i>Schutz und Nutzung des Rheins*</i> (3)	Fall 2004 – Fall 2005

Values in brackets indicate number of academic credits; \* indicates team teaching.

PRACTICAL COURSES	TIME FRAME
<i>Eigenständiges Forschen*</i> (2)	Since Fall 2011
<i>Moderne Biomarker*</i> (2)	Spring 2013 - Spring 2017
<i>Aquatische Ökologie und Ökotoxikologie*</i> (2)	Fall 2007 - Spring 2011
<i>Nachhaltigkeit in der Ökosystemforschung*</i> (5)	Fall 2007- Spring 2009
<i>Sustainability in Ecosystem Research*</i> (3)	Spring 2006

FIELD TRIPS	TIME FRAME
<i>Aquatic Ecosystems in Practice (Marine or Freshwater) - Functional Basics and Interaction with the Anthroposphere</i> (3)	Spring 2021
<i>Meeresbiologischer Kurs an der Strasse von Gibraltar / Marine Biological Considerations at the Strait of Gibraltar*</i> (3)	Since Spring 2008
<i>Sustainability in Ecosystem research I*</i> (2)	Fall 2007 - Spring 2010

STUDENT PROJECTS	TIME FRAME
<i>Training for Sustainability Research *</i> (6)	Since Spring 2018
<i>Internationale Organisationen und das nachhaltige Management von natürlichen Ressourcen am Beispiel von Walen*</i> (6)	Fall 2017
<i>Nutzungskonflikte in der Waldnutzung aus ökologischer, gesellschaftlicher und ökonomischer Sicht*</i> (6)	Fall 2016
<i>Kleinwasserkraftwerke im Spannungsfeld von Nutzungskonflikten aus ökologischer, gesellschaftlicher und ökonomischer Sicht*</i> (6)	Fall 2015
<i>Projektarbeit: Klimawandel - nationale Adaptationsstrategien*</i> (6)	Fall 2012 – Fall 2014
<i>Sustainability in Ecosystem research II*(3)</i>	Spring 2010
<i>Fischnetz: Bedeutung und Auswirkungen eines inter- und transdisziplinären Projektes*</i> (6)	Fall 2010
<i>Bewertung der Ressource Wasser am Beispiel Westkanadas*</i> (6)	Spring 2009
<i>Millenium development Goals in der Schweiz*</i> (6)	Fall 2007
<i>Vorbereitung Projektkurs SS 2006: Pilotregion Basel der 2000 Watt Gesellschaft*</i> (3)	Spring 2006
<i>Revitalisierung von Kleinwasserkraftwerken (KWKW) Chance zur nachhaltigen Wasserkraftnutzung?*</i> (6)	Spring 2004
<i>Schutz und Nutzung des Rheins*</i> (6)	Fall 2004

DOCTORAL COURSES	TIME FRAME
Research on Sustainable Development* (3) Sustainability Science*(3) Interdisciplinarity in disciplinary PhD research in the context of sustainability (Winter School)* (3)	Spring 2016 - Spring 2017 Spring 2014 Fall 2014

COLLOQUIA	TIME FRAME
Presentation of Results of MSD Master's Thesis *(1)	Since Spring 2019
Introduction to Ongoing MSD Master's Thesis* (1)	Since Spring 2018
Präsentation und Diskussion von MSD-Masterarbeiten* (1)	Since Fall 2017
Presentation of Concepts of MSD Master's Thesis* (1)	Since Fall 2018
MSD Life Science *(*)(1)	Since Fall 2008
Institutskolloquium* (1)	Fall 2007 - Spring 2008
Doctoral colloquium* (1)	Fall 2005

CONTRIBUTIONS TO OTHER STUDY PROGRAMS AND UNIVERSITIES	TIME FRAME
Wasserethik. Ethik in Geo- und Umweltwissenschaften: 30206-01, Universität Basel, Switzerland	05.04.2022
Invasive Grundeln aus dem Schwarzen Meer erobern heimische Gewässer. Tierpflegerseminar, University of Basel, Switzerland	12.11.2015
Microplastics' and Antarctic fish. Lecture to graduate students in the School of Public Health SPH 522, University of Alberta, Canada	01.10.2015
Invasive Schwarzmeergrundeln auf dem Weg in die Schweiz. FHNW-Fachdidaktik Modul 3.1. Wissenschaftsorientierung, Basel, Switzerland	06.12.2013
What is an endocrine disruptor and why do we have to study these compounds? Toxicology Courses, Biological Sciences Department, University of Alberta, CA-Edmonton, Canada	11.01.2012
Cellular effects of microplastics in the blue mussel <i>Mytilus edulis</i> . Biological Sciences Departmental Seminar (Biology 642 Series), University of Alberta, CA-Edmonton, Canada	11.01.2012

Values in brackets indicate number of academic credits; \* indicates team teaching.

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## SUPERVISION OF ACADEMIC THESES

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Co-supervisors from University of Basel, unless noted otherwise

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### DIPLOMA AND MASTER THESES

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- Lucas Bergmann 2023: Microplastics pollution and animal swimming behaviour (Co-Supervisor: Joschka Wiegleb)
- Kevin Leuenberger 2023: Microplastic ingestion among five demersal, bathydemersal and bathypelagic fish species from the eastern Weddell Sea, Antarctica (Co-Supervisor: Gabriel Erni Cassola)
- Tiffany Meyer 2022: Microplastic in the River Rhine near Basel. Spatial Distribution and Diversity in River Shore Sediments.
- Ricardo Bentele 2022: Noah, the Ark and the Unknown. The Noah's Ark Problem in the Case of Species Conservation (Co-Supervisor: Rolf Weder).
- Anita Feierabend 2022: Age an Trait Variability of *Dryas octopetala* L. in a Changing Climate. (Co-Supervisor: Christian Rixen, WSL).
- Nandhakumar Govindasamy 2022: Hydraulic Forces that Preserved Round Goby (*Neogobius melanostomus* Pallas, 1814) Experience In Flow Channel (Co-Supervisor: Joschka Wiegleb).
- Eva-Maria Hanninger 2022: Injuries, Emaciation, and Skin Conditions in Cetaceans of the Strait of Gibraltar. A qualitative health assessment.
- Sina Sohneg 2022: Effects of luminaire shape, light level, and LED color temperature on nocturnal insect abundance (Co-Supervisor: Janine Bolliger).
- Belinda Biesuz 2021: The interactive potential of native and inoculated microorganisms to support crop yield (Co-Supervisor: Sebastian Franz Bender).
- Lea Masserey 2021: Microplastics in gills and gastrointestinal tract of Antarctic fishes (*Pleurogramma antarcticum*, *Neopagetopsis ionah* and *Notothenia rossii*) from the Antarctic Peninsula and Eastern Weddell Sea (Co-Supervisor: Gabriel Erni Cassola).
- Florian Christ 2020: Comparison of microplastics in bagged soil.
- Mila Mi Hua Yong 2020: Microplastics in faecal samples of whale sharks (*Rhincodon typus*) and surface water in the Coral Triangle.
- Risto Krebs 2019: Pollination of Sweet Cherry (*Prunus avium*) by Wild Pollinating Insects under Variable Weather Conditions (Co-Supervisor: Matthias Albrecht, Agroscope).

- David Scherrer 2019: Possible migration barrier for *Neogobius melanostomus*: Block ramps in a restored river section – Case Birs (Co-Supervisor: Philipp E. Hirsch).
- Sophie Bosshart 2019: Microplastics Uptake by Round Gobies (*Neogobius melanostomus*) in the Rhine River.
- Hydrobiology-Limnology-Award 2021 for the best master thesis**
- Aita Gianelli 2019: „A Systematic Study of Sustainable Development Goals within Key Literature on Sustainable Water Management in Switzerland” (Co-Supervisor: Flurina Schneider).
- Markus Schüpbach 2019: „Nachhaltigkeit durch Berücksichtigung der Hochwassergefahren? Eine Analyse der Besiedlung im Grenzbereich der kartierten Hochwassergefahrengebiete in der Schweiz” (Co-Supervisor Margaretha Keiler, Uni Bern).
- Stefan Frehland 2019: Fate of Nanoplastic Particles and Microplastic Fibers in Wastewater Treatment Plants (Co-Supervisor: Denise Mitrano, Eawag).
- Andreas Kalberer 2018: Microplastics in Swiss Agricultural Soils The Relevance of Mulch Foil and Digestate Fertilizer for Plastic Pollution (Co-Supervisor: Christian Körner).
- Vincent Somerville 2017: Methylome wide association study of two mating season phenotypes in a wild Round Goby population (Co-Supervisors: Irene Adrian-Kalchhauser, Walter Salzburger).
- Sandrine Straub 2017: Uptake and effects of biodegradable microplastics on the freshwater amphipod *Gammarus fossarum*.
- Özdal Nilgün 2017: Feeding habits of round goby (*Neogobius melanostomus*) in the Kleinhüningen Harbour, Basel (Co-Supervisor: Philipp E. Hirsch).
- Monika Hübner 2017: Mikroplastikeinträge in den Rhein: Analyse möglicher Herkünfte und Eintragungspfade sowie von Massnahmen zu deren Verminderung
- Céline Mäder 2016: Die Ernährungsweise der Schwarzmundgrundeln (*Neogobius melanostomus*) in Basel im Vergleich mit anderen Ökosystemen.
- Paolo Ferrara 2015: Charakterisierung von Genen, die am Abbau von Schadstoffen in antarktischen Fischarten beteiligt sind. Nachweis des Cytochrom P450 Ia Transkripts in antarktischen Fischarten und ein Vergleich der Expression in verschiedenen antarktischen Fischarten.
- Christina Geiger 2015: Decrease of benthic macroinvertebrates caused by hydropower-induced water level fluctuations with potential effects on fish.
- Lisa Wilmsmeier 2015: Flussrenaturierung nach dem Prinzip „Perlenkette» – Ein vielversprechender Ansatz für den Mungnaukanal und den Grundbach?
- Thomas Mani 2015: Mikroplastikerhebung im Rhein – von der Schweizergrenze bis zum Meer.



- Pascal Blarer 2015: Aufnahme und Effekte von Mikroplastik in Amphipoden.
- Katharina Appoloni 2015: Wasserstandschwankungen in Stauseen und deren Auswirkungen auf die Primärproduktion im Kontext der Wirtschaftlichkeit des Stauseebetriebs.
- Tanja Erzinger 2014: Wirksamkeit von Wildtierschutz-Kampagnen bei Freeridern (Co-Supervisor: Marcel Hunziker, WSL Birmensdorf)
- Sylvie Flämig 2014: Potential of Recreational Boating as a Distribution Vector for Invasive Gobies in Switzerland and Development of Recommendations for Action (Co-Supervisor: Philipp E. Hirsch).
- Maya Bütikofer 2014: Wie nachhaltig ist die Schafsömmernung im regionalen Naturpark Gantrisch? (Co-Supervisors: Christine Scheidegger, FRG Parkwissen, Gantrisch, Switzerland; Cornel Werder, Alpe Beratung, Switzerland; Manuel K. Schneider, Agroscope Reckenholz-Tänikon, Switzerland).
- Sebastian Schillinger 2014: Ecological effects of water level fluctuations in a hydropower reservoir. (Co-Supervisors: Hannes Weigt, Philipp E. Hirsch).
- Kerstin Glaus 2014: Bycatch or Targeted Fisheries? Artisanal Shark Fishing in Fiji. (Co-Supervisors: Jürg Brunnschweiler, ETHZ; Rolf Weder, Irene Kalchhauser)
- Renata Estevão Pollini 2013: Sustainability assessment of mango production: A case study with small-scale growers in the Nilo Coelho irrigation project in Petrolina, northeast of Brazil. (Co-Supervisor: Ronnie Juraske, ETHZ)
- Anouk N'Guyen 2013: Potential economic impacts of invasive gobies on recreational angling and commercial fishing. The exemplary case of Lake Zurich. (Co-Supervisor: Philipp E. Hirsch).
- Peter Mutzner 2012: Genetic Diversity and Population Structure of the Invasive Goby Species *Ponticola kessleri* in Kleinhüningen and Birsfelden. (Co-Supervisor: Walter Salzburger).
- Mollie Chapman 2012: Linking People and Rivers: An interdisciplinary approach to understanding pesticide use among farmer (Jaime Diaz Gomez) Programa de Ingenieria Sanitaria, Universidad de Boyocá, Tunja, Colombia) in Colombia.
- Simon Herzog 2012: Cytotoxic effects of mineral particles on fish gill cells in vitro (Co-Supervisor: Christian de Capitani).
- Tina Skerlak 2012: An Integrative System Dynamics Model of Farmers' Fertilizing Behaviour with Special Focus on Phosphorus (Co-Supervisor: Claudia R. Binder, ETHZ, University of Graz, Austria).
- Karla Schlie de Ramos 2012: Quantifiable Effects of Chemicals on Life Cycle Parameters (Co-Supervisor: Nele Schuwirth, Eawag).

- Priska Sacher 2012: Dezentrale Sanitärsysteme – Eine vergleichende Fallstudie von Pilotprojekten mit Stoffstromtrennung unter Einbezug von Hotelbauten (Co-Supervisor: Heiko Gebauer, Eawag).
- Max Reichenbach 2012: Die Sensibilität unterschiedlicher Mobilitätstypen für die Begünstigung von Verhaltensänderungen durch Kontextänderungen. Eine Untersuchung ausgewählter Gruppen am Beispiel der Bewertung des E-Bikes (Co-Supervisor: Susanne Bruppacher).
- Tobias Fischer 2012: Untersuchung der Verbuschung von landwirtschaftlichen Flächen im Unter-alptal vor dem Hintergrund der Nachhaltigen Entwicklung. Eine Analyse auf der Basis von Luftbilddaten 1967-2000 (Co-Supervision. Principal Supervisor: Nikolaus J. Kuhn).
- Elvira Stürmer 2011: Wahrnehmung energieeffizienter Gebäude durch Private und Darstellung in den Medien: Implikationen für eine Kommunikationsstrategie zur Verbreitungsförderung energieeffizienter Bauweise (Co-Supervisor: Susanne Bruppacher).
- Martin Wiech 2011: Gear Avoidance Behavior, Personality, Growth, and Metabolic Rate in Guppies. (Co-Supervisor: Miko Heino, University of Bergen).
- Nina Weiss 2011: Dynamics of fish (salmonid) habitat in running water courses of Alberta's forests: Impact of natural and anthropogenic disturbance. (Co-Supervisor: Frank Krysiak).
- Marco Felicioni 2011: An Assessment of the Components of the Water Footprint of Swiss Paper Consumption. (Co-Supervisor: Hong Yang, Eawag)
- Tara Hadler 2011: Virtual Water in the Context of Alberta's Irrigation Districts: Assessing Water-Food-Trade Relationships at a Localized Level. (Co-Supervisor: Alexander J.B. Zehnder, Alberta Water Research Institute).
- Barbara Berli 2011: Effects of turbidity on individual and schooling performance of three strains of salmonids (*Oncorhynchus mykiss* and *Salmo trutta*). (Co-Supervisor: Keith Tierney, University of Alberta, Edmonton, Kanada).
- Angela Solothurnmann 2010: Die Pilotwalpopulation in der Strasse von Gibraltar 1999 bis 2009: Zustand, Veränderungen und deren Ursachen. (Co-Supervisor: Jürgen Holm, University of Applied Sciences, Bern)
- Sabine Wirthner 2010: Das Entscheidungsverhalten von Einfamilienhausbesitzern und -besitzerinnen bezüglich einer energetischen Sanierung: Eine quantitative Untersuchung in den Kantonen Basel-Stadt und Basel-Landschaft. (Co-Supervisor: Susanne Bruppacher, Uni Bern).
- Nadia von Moos 2010: Histopathological and cytochemical analysis of ingested polyethylene powder in the digestive gland of the blue mussel, *Mytilus edulis* (L.). (Co-Supervisor: Angela Köhler, Alfred-Wegener-Institut für Polar- und Meeresforschung, Bremerhaven).

***Awarded the best Master Thesis of the year, SETAC-GLB 2011***

- Maiti L. de Himpsl 2010: Sustainability of malaria vector control, with special consideration to indoor residual spraying. (Co-Supervisor. Supervisor: Jürg Utzinger, STPH)
- Corina Schmitz 2010: Plastikmüll an den Stränden in Südspanien - wo, wie viel, wie umfangreich, wie sichtbar? (Co-Supervisor: Susanne Bruppacher, Uni Bern).
- Giorgia Crivelli 2010: Comparison of oxidative stress induction by pentachlorophenol (PCP) and its metabolite tetrachlorohydroquinone (TCHQ) on different fish cell lines. (Co-Supervisor: Constanze Pietsch).
- Daniel Eglin 2010: Fishing Down the Food Web: Auswirkungen und Regulierungsmöglichkeiten. (Co-Supervisor: Frank Krysiak).
- Venla Kontiokari 2009: Induction of oxidative stress by atrazine and isoproturon (IPU) in different permanent fish cell lines. University of Helsinki. (Co-Supervisor: Constanze Pietsch, Olli-Pekka Penttinen, University of Helsinki).
- Nadja Häfeli 2009: Untersuchung zur Fischtoxizität von Sedimenten und Biofilmen. (Co-Supervisor: Patrick Schwartz).
- Patrick Weber 2009: Monitoring der Verstädterung im Grossraum Istanbul mit den Methoden der Fernerkundung. (Co-Supervisor: Eberhard Parlow).
- Aleix Ferrer 2008: Health risks related to wastewater reuse in Thailand using quantitative microbial risk assessment. (Co-Supervisors: Hung Nguyen-Viet, Antoine Morel, Swiss Tropical Institute).
- Fanny Frei 2008: Scenario Analysis of the Swiss Passenger Car Sector from a Sustainability Perspective. (Co-Supervisors: Wolfgang Hoffelner, Konstantinos Boulouchos, ETH Zurich).
- Clea Henzen 2008: The Impact of Land Use on Biodiversity in the Framework of Life Cycle Assessment. (Co-Supervisor: Koellner Thomas, Swiss Federal Institute of Technology Zurich).
- Sophia Bloch 2007: Temperature and Estrogen Effects on the Physiology of Brown Trout.
- Andreas Taverna 2005: Die Gonadenentwicklung bei der Elritze (*Phoxinus phoxinus*).
- Patrick Faller 2001: Hat die ARA Surental einen Einfluss auf die Reproduktionsfähigkeit von Gründlingen (*Gobio gobio*)? Zoological Department, University of Zurich.

***Candidate for the Best Student's Paper Award, Environmental Toxicology and Chemistry***

- René Benguerel 1998: Bachforellen im Langzeitmonitoring: Einfluss beeinträchtigter Wasserqualität auf die Ultrastruktur der Epidermis Phil.-nat. Fakultät. University of Bern.

### **Hydrobiology-Limnology-Award 1999 for the best diploma thesis**

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#### MASTER THESES (ONGOING)

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Kevin Leuenberger	Microplastics in fish of the Southern Ocean
Lucas Bergmann	Microplastics pollution and animal swimming behaviour

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#### PH.D COMMITTEES (EXTERNAL)

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Bianca Unger	2017: Meeresmüll in der Nord- und Ostsee: raum-zeitliche Verteilung und Vorkommen in Meeressäugern, University of Veterinary Medicine, Hannover
Martin Wagner	2013: Endocrine Disruptors in Bottled Water and Foodstuff: A Bioassay-based Approach, Johann Wolfgang Goethe-University, Frankfurt
Michael Wenger	2009: Impact of multiple stressors on fish: responses to pathogens and pollutant exposures at the molecular and organism levels, University of Berne
Kathrin Bettge	2008: The Proliferative Kidney Disease of salmonids: Dynamics of the parasite in the fish host, University of Berne
Richard Burki	2006: Environmental estrogens as endocrine disruptors in Swiss rivers: Assessment of exposure, effects on brown trout and interactions with other stressors, University of Berne

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#### PH.D. THESES (INTERNAL, ONGOING)

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Sara Schubert	resumed 2022: Estrogenic Endocrine Disruption in Switzerland: Assessment of Effects on Brown Trout at different Life Stages using Field and Laboratory Methods (Working title)
Clara Leistenschneider	since 2018: Microplastics: A potential threat to the remote and pristine ecosystem(s) of Antarctic Seas? (Working title)

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 PH.D. THESES (COMPLETED)
 

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## ACTED AS PRINCIPAL SUPERVISOR, UNLESS NOTED OTHERWISE

- Karen Bussmann 2022: Ecological, behavioural and molecular aspects enabling invasive round goby translocation via boats.
- Joschka Wiegler 2022: Hydraulic burden and swimming behaviour of benthic fish in a vertical slot fish pass.
- Thomas Mani 2019: Microplastics in the Rhine River – from the Swiss catchment towards the North Sea.
- Anouk N’Guyen 2016: Non-native goby species in Switzerland – Impacts and management.
- Christian Michel 2013: Fine Sediment Effects in Trout – New Insights from Laboratory and Field Studies.
- Maria a Marca 2011: Ex vivo and in vivo studies to assess chemical effects on steroidogenesis in fish: development and application of methods.
- Patrick Schwartz 2011: Ecotoxicological characterization of the estrogenic mycotoxin zearalenone and environmental samples: Effects on zebrafish development and reproduction.
- Oliver Körner 2007: Field and laboratory approaches to assess estrogen disruption in the brown trout *Salmo trutta*.
- Awarded best Ph.D. thesis of the year, SETAC-GLB 2008**
- Gisela Lamche 1999: The fish epidermis as a model for ecotoxicological studies. Faculty of Natural Science, University of Bern (Co-supervision).
- Daniel Bernet 1999: Development of instruments to assess the influence of waste water on brown trout in the river. Faculty of Natural Science, University of Bern (Co-supervision).
- Heike Schmidt 1998: Effect of environmental influences on brown and rainbow trout. Evaluation of several biomarkers in the field and in the laboratory. Faculty of Veterinary Medicine, University of Bern (co-supervision).
- Awarded best Ph.D. thesis of the year, Faculty of Veterinary Medicine, University of Berne**
- Matthias Escher 1996: Assessment of the influence of waste water on the health status of brown trout (*Salmo trutta fario*). Faculty of Veterinary Medicine, University of Bern (Co-supervision).

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## RESEARCH GRANTS (SELECTION)

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Cruise: Antarctic Project “Eastern Weddell Sea Observation System I”

Project Leader: **Holm, P.**

Duration: März 2022 - April 2022

Financed by: Germany

Research vessel: FS Polarstern, PS129.

Non-cash contribution: EUR 159'600

Cruise: Antarctic Project “Microplastics in the Southern Ocean”

Project Leader: **Holm, P.**

Duration: Februar - March 2021

Financed by: Germany

Research vessel: FS Polarstern, PS124.

Non-cash contribution: EUR 120'000

Title: Role of Rhine in global plastic waste problem

Project Leader: **Holm, P.**

Duration: 2020-2023

Financed by: Wilson-Mettler Foundation

Amount: CHF 30'000

Approved Cruise: Antarctic Project “Microplastics off Antarctic Peninsula’ (postponed due to COVID-19 pandemic)

Project Leader: **Holm, P.**

Duration: March 2020- April 2020

Financed by: Germany

Research vessel: Maria S. Merian, MSM90

Non-cash contribution: EUR 127'272

Cruise: Antarctic Project “Occurrence of microplastics in the Antarctic Seas”

Project Leader: **Holm, P.**

Duration: December 2018 - February 2019

Financed by: Germany,

Research vessel: FS Polarstern, PS117.

Non-cash contribution: EUR 202'040

Title: Microplastics in Antarctic ocean

Project Leader: **Holm, P.**

Duration: 2019-2021

Financed by: Ricola Foundation, Laufen

Amount: CHF 36'000

Title: Expedition for sampling of microplastics in the Antarctic sea  
Project Leader: **Holm, P.**

Duration: December 2018 – February 2019

Financed by: FAG Basel

Amount: CHF 15'000

Title: Invasive gobies (aggregated several sub-projects)  
Project Leader: **Holm, P.**

Duration: April 2017 – April 2022

Financed by: Different funding sources (swisslos-fonds BL, SO, AG, Canton BS; Federal Office for the Environment FOEN, University Basel)

Amount: CHF 755'000

Title: Round goby in Switzerland  
Project Leader: **Holm, P.**

Duration: October 2015 - September 2017

Financed by: AWEL, Amt für Abfall, Wasser, Energie und Luft, Abteilung Gewässerschutz, Zürich, Switzerland

Amount: CHF 67'200

Title: Microplastic in Rhine catchment. Sources and assessment of biological and ecological effects  
Project Leader: **Holm, P.**

Duration: July 2015 - June 2016

Financed by: WWF Switzerland

Amount: CHF 49'500

Title: Microplastic in Rhine catchment. Occurrence, Sources and Meaning  
Project Leader: **Holm, P.**

Duration: 2016 - 2019

Financed by: FAG Basel

Amount: CHF 43'000

Title: Towards societal consensus – Influencing the perception and evaluation of energy policy measures by means of self-reflection and information  
Project Leader: **Holm, P.**

Duration: January 2015 – December 2018

Financed by: Swiss National Science Foundation

Amount: CHF 266'000

Title: Microplastic in running waters. Load and concentration of microplastics in Rhine between Basel and the North Sea

Project Leader: **Holm, P.**

Duration: June 2014 – May 2015

Financed by: Stiftung Emilia Guggenheim-Schnurr der Naturforschenden Gesellschaft in Basel

Amount: CHF 8'970

Title: Discovering the cold: Are Antarctic fish capable of coping with anthropogenic chemicals?

Project Leaders: **Holm, P.**, Segner, H., Schmid, P.

Duration: March 2014 – November 2017

Financed by: Swiss National Science Foundation

Amount: CHF 439'000

Title: Sustainable Development on Bachelor Level – an Immersive Program in Sustainable Development

Project Leaders: **Holm, P.**, Krysiak, F.C., Burger, P.

Duration: June 2013 – December 2016

Financed by: Swiss Academies of Arts and Sciences

Amount: CHF 98'068

Title: Sustainable Development at Universities Program: Summer School

Project Leaders: Burger, P., Krysiak, F.C., **Holm, P.**

Duration: June 2013 – December 2016

Financed by: Swiss Academies of Arts and Sciences

Amount: CHF 99'860

Title: Invasive Species

Project Leaders: **Holm, P.**, Kalchhauser I., Hirsch, P.

Duration: January 2013 – December 2016

Financed by: Federal Office for the Environment FOEN, Bern; Amt für Umwelt und Energie Basel-Stadt; Lotteriefonds Solothurn; Swisslos Fonds Aarau; Swisslosfonds Baselland;

Amount: CHF 489'068

Title: Invasive Species – pre-project

Project Leaders: **Holm, P.**, Kalchhauser I., Hirsch, P.

Duration: September 2012 – December 2012

Financed by: Canton of Aargau; Federal Office for the Environment FOEN

Amount: CHF 20'000



Title: Research Center for Sustainable Energy and Water Supply  
 Project Leaders: Burger, P., **Holm, P.**, Krysiak, F.  
 Duration: August 2011 – July 2016  
 Financed by: Different funding sources  
 Amount: CHF 1'753'585

Title: Physiological Capacity of Antarctic Fish  
 Project Leader: **Holm, P.**  
 Duration: December 2011 – December 2014  
 Financed by: Freiwillige Akademische Gesellschaft (FAG), Basel  
 Amount: CHF 25'000

Title: Methodologies to measure and characterize fine sediment input to alpine rivers and their effects on health and reproduction of gravel spawning brown trout (*Salmo trutta*)  
 Project Leaders: **Holm, P.**, Alewell, C., Huggenberger, P.  
 Duration: September 2011 – August 2012  
 Financed by: Swiss National Science Foundation, CoRe  
 Amount: CHF 129'268

Title: Deterioration of habitats for fish (*Salmonidae*) in running water courses of Alberta due to fine sediment input from forestry  
 Project Leader: **Holm, P.**  
 Duration: 2010 – 2012  
 Financed by: Alberta Water Research Institute, Edmonton, Alberta (Canada)  
 Amount: CAD 43'000

Title: Supporting measures on energy efficiency of buildings: awareness, effects and energetic potential  
 Project Leaders: **Holm, P.**, Bruppacher, S.  
 Duration: 2010 – 2012  
 Financed by: Amt für Umwelt und Energie, Basel  
 Amount: CHF 30'000

Title: Untersuchung der Auswirkungen von Microplastics auf marine Ökosysteme.  
 Study on the effects of microplastics on marine ecosystems.  
 Project Leader: **Holm, P.**  
 Duration: 2009 – 2010  
 Financed by: usitawiNetwork Club Basel  
 Amount: CHF 2'124

Title: PhastSystem with Separation-Control and Development Units

Project Leaders: **Holm, P.**, Pietsch, C.

Duration: 2009 – 2010

Financed by: Freiwillige Akademische Gesellschaft (FAG), Basel

Amount: CHF 10'000

Title: Application of a brown trout (*Salmo trutta fario*) ex vivo conad culture for investigating the effects of chemical exposure and steroidogenesis

Project Leaders: **Holm, P.**, Thorpe, K.

Duration: 2009 – 2010

Financed by: Emilia Guggenheim-Schnurr Stiftung der Naturforschenden Gesellschaft in Basel

Amount: CHF 15'000

Title: Ecological risk assessment of PCB in aquatic food webs

Project Leaders: **Holm, P.**, Pietsch, C.

Duration: 2009

Financed by: Federal Office for the Environment FOEN

Amount: CHF 15'000

Title: PCB in fish, risk of toxic effects on fish on Switzerland and their predators

Project Leaders: **Holm, P.**, Pietsch, C.

Duration: 2008 – 2009

Financed by: Federal Office for the Environment FOEN

Amount: CHF 12'000

Title: Study on the effects of fine sediments on brown trout in Swiss running waters. Stress effects on gills

Project Leader: **Holm, P.**

Duration: 2008 – 2009

Financed by: Emilia Guggenheim-Schnurr-Stiftung, Aesch

Amount: CHF 9'400

Title: Methodologies to measure and characterise fine sediment input to alpine rivers and their effects on health and reproduction of gravel spawning brown trout (*Salmo trutta*)

Project Leaders: **Holm, P.**, Alewell, C., Bänninger, D.

Duration: September 2008 –August 2011

Financed by: Swiss National Science Foundation, KID

Amount: CHF 394'850

Title: Method development of effect monitoring in aquatic ecosystems

Project Leader: **Holm, P.**

Duration: 2008

Financed by: Federal Office for the Environment FOEN

Amount: CHF 30'000

Title: Study on estrogenic effects on zebra fish

Project Leader: **Holm, P.**

Duration: 2007

Financed by: Freiwillige Akademische Gesellschaft (FAG), Basel

Amount: CHF 8'000

Title: Library of the Master's Degree in Sustainable Development of the University of Basel

Project Leader: **Holm, P.**

Duration: June 2007 – May 2010

Financed by: Ingo-Finanz AG

Amount: CHF 36'000

Title: Development of a Master program in Sustainable Development at the University of the Philippines Cebu College

Project Leader: **Holm, P.**

Duration: 2007

Financed by: Freiwillige Akademische Gesellschaft (FAG), Basel

Amount: CHF 1'714

Title: Comparison of fish species responses to endocrine disruptors

Project Leaders: Thorpe, K.L., **Holm, P.**

Duration: August 2006 – July 2009

Financed by: Syngenta

Amount: CHF 33'000

Title: Effects of temperature and ethinylestradiol on the physiology of brown trout (*Salmo trutta*)

Project Leaders: Körner, O., **Holm, P.**

Duration: 2006

Financed by: Basler Stiftung für Experimentelle Zoologie

Amount: CHF 2'500

Title: Assessment of the effects of aromatase inhibitors and solvents by means of an in vitro assay

Project Leaders: a Marca, M., **Holm, P.**

Duration: April 2006 – March 2009

Financed by: Syngenta

Amount: CHF 33'000

Title: Micropollution in Swiss Surface Waters (MicroPoll)

Project Leaders: Knauer, K., **Holm, P.**

Duration: January 2005 – December 2007

Financed by: Federal Office for the Environment FOEN

Amount: CHF 100'000

Title: Project N° 252: Master Studies of Sustainable Development

Project Leader: **Holm, P.**

Duration: 2005 – 2007

Financed by: Velux Stiftung

Amount: CHF 300'000

Title: Endocrine disruption in Switzerland: Assessment of fish exposure and effects (SAFE I & II)

Project Leaders: **Holm, P.**, Segner, H., Peter, A., Suter, M.

Duration: June 2002 – July 2007

Financed by: Swiss National Science Foundation, NFP 50

Amount: CHF 350'000 + CHF 233'000

Title: Modul-Stufen-Konzept, Modul Ökotoxikologie (Modular concept for comprehensive assessment of streams, modul ecotoxicology)

Project Leaders: Schweigert, N., Eggen, R.I.L., Behra, R., Bundi, U., Escher, B., **Holm, P.**

Duration: January 2001 – December 2004

Financed by: Federal Office for the Environment FOEN, Eawag

Amount: CHF 405'000

Title: Äschenbestand Inn Oberengadin (Abundance of grayling in the river Inn, Oberengadin)

Project Leader: **Holm, P.**

Duration: June 2000 – December 2000

Financed by: Jagd- und Fischereiinspektorat und Amt für Umwelt GR

Amount: CHF 25'800

Title: Evaluierung von Ansätzen und Methoden zur ökotoxikologischen Gewässerbeurteilung (Evaluation of concepts and methods for an ecotoxicological assessment of water quality)

Project Leaders: R. Behra, R. Eggen, B. Escher, **P. Holm.**

Duration: March 2000 – September 2001

Financed by: Eawag Dübendorf

Amount: CHF 45'000

Title: Untersuchung der Biozönose im Linthkanal im Bereich der Salzwassereinleitung der KVA Niederurnen (Investigation on the biocenose in the channel of Linth, in the area of the salt water inflow of the sewage plant Niederurnen)

Project Leader: **Holm, P.**

Duration: January 2000 – June 2001

Financed by: KVA Linthgebiet Niederurnen

Amount: CHF 58'130

Title: Project Fishnet

Project Leader: **Holm, P.**

Duration: 1999 – 2004

Financed by: All 26 Swiss cantons, the Principality of Liechtenstein, Eawag, Federal Office for the Environment FOEN

Amount: CHF 5'000'000

Title: Gonadenveränderungen (Ovotestis) in männlichen Forellen (Alteration of gonads (ovotestis) in male brown trout)

Project Leaders: Wahli, T., **Holm, P.**

Duration: July 1999 – December 1999

Financed by: Federal Office for the Environment FOEN

Amount: CHF 29'000

Title: Immunhistologische Untersuchung der Vitellogenin-Expression in Bachforellen aus schweizerischen Fließgewässern (Immunohistological investigation of the expression of vitellogenin in brown trout of Swiss running water systems)

Project Leader: **Holm, P.**

Duration: November 1998 – July 1999

Financed by: Federal Office for the Environment FOEN

Amount: CHF 49'000

Title: Biomonitoring in Fließgewässern des Kantons Bern (Biomonitoring in running water systems in the canton Berne)

Project Leaders: Meier, W., Wahli, T., **Holm, P.**

Duration: April 1998 – September 1999

Financed by: Kantonales Amt für Gewässerschutz, Bern

Amount: CHF 110'000

Title: Water quality: development of a set of biomarkers as an instrument to assess water quality

Project Leaders: Meier, W., **Holm, P.**

Duration: April 1996 – March 1999

Financed by: Swiss National Science Foundation

Amount: CHF 179'690

Title: Einfluss verschiedener Gewässeranteile der Langeten (Flusswasser, ARA-Auslauf, Grundwasser) auf Fische als Biomonitoren. Vergleich mit chemisch-analytischen, ökomorphologischen und anderen biologischen Untersuchungen (Influence of the different parts of the river water of the river Langeten (river water, sewage water, groundwater) on fish as bioindicators)

Project Leaders: **Holm, P.**, Wahli, T., Meier, W.

Duration: February 1996 – February 1999

Financed by: Kantonales Amt für Gewässerschutz, Bern, Fischereinspektorat Bern, Federal Office for the Environment FOEN

Amount: CHF 255'732

Title: Entwicklung eines Instrumentariums zur Bewertung des Einflusses der Abwasserqualität von ARA-Ausläufen auf die Organismengemeinschaft im Vorfluter (Development of instruments to assess the influence of the sewage water quality of sewage water treatment plants on organisms in the river)

Project Leaders: Meier, W., **Holm, P.**

Duration: October 1994 – July 1997

Financed by: Kantonales Amt für Gewässerschutz, Bern, Fischereiinspektorat, Bern, Federal Office for the Environment FOEN

Amount: CHF 249'000

Title: Methods for evaluation of nutritional status of fish larvae

Project Leaders: Paulsen, H., Poulsen, N.E. Lavens, P., Korsgaard, B., Iglesias, J., Olmedo, M., **Holm, P.**

Duration: January 1990 – December 1992

Financed by: EG-Project Fisheries Sector

Amount: ECU 242'262

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**PUBLICATIONS**


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**PEER-REVIEWED JOURNAL ARTICLES**


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1. Erni-Cassola, G., Ebner, J.N., Blattner, L.A., **Burkhardt-Holm, P.**, 2023. Microplastics in river sediment: Chronic exposure of the amphipod *Gammarus fossarum* to polyethylene terephthalate in a microcosm. Elsevier 2024/Vol. 463. doi.org/10.1016/j.jhazmat.2023.132874
2. Hanninger, E.-M., Selling, J., Heyer, K., **Burkhardt-Holm, P.**, 2023. Injuries in cetaceans in the Strait of Gibraltar: an update for the period 2016-2020. doi.org/10.47536/jcrm.v24i1.39
3. Hanninger, E.-M., Selling, J., Heyer, K., **Burkhardt-Holm, P.**, 2023. Injuries in cetaceans in the Strait of Gibraltar: an update for the period 2016-2020. doi.org/10.47536/jcrm.v24i1.397
4. Hanninger, E.-M., Selling, J., Heyer, K., **Burkhardt-Holm, P.**, 2023. Skin conditions, epizoa, ectoparasites and emaciation in cetaceans in the Strait of Gibraltar: An update for the period 2016–2020. Cetacean Research Management. 2023/Vol. 24. doi.org/10.47536/jcrm.v24i1
5. Wiegleb, J., Hirsch, Ph. E., Seidel, F., Rauter, G., **Burkhardt-Holm, P.**, 2023. Round goby [*Neogobius melanostomus* (Pallas, 1814)], gudgeon (*Gobio gobio* L.) and bullhead (*Cottus gobio* L.) show distinct swimming patterns in a vertical slot fish pass. Front. Environ. Sci. 2023. doi.org/10.3389/fenvs.2023.1156248

6. Wiegleb, J., Hirsch, Ph. E., Seidel, F., Rauter, G., **Burkhardt-Holm, P.**, 2022. Impact of hydraulic forces on the passage of round goby (*Neogobius melanostomus*), gudgeon (*Gobio gobio*) and bullhead (*Cottus gobio*) in a vertical slot fish pass. *Ecology of Freshwater Fish* 2022. doi: 10.1111/eff.12696
7. Leistenschneider, C., Le Bohec, C., Eisen, O., Houstin, A., Neff, S., Primpke, S., Zitterbart, D.P., **Burkhardt-Holm, P.**, Gerdts, G., 2022. No evidence of microplastic ingestion in emperor penguin chicks (*Aptenodytes forsteri*) from the Atka Bay colony (Dronning Maud Land, Antarctica). *STOTEN* 2022, 851 Part 2, doi: 10.1016/j.scitotenv.2022.158314
8. Bussmann, K., Hirsch, Ph.E., Lehmann, M.F., **Burkhardt-Holm, P.**, 2022. Differential habitat use of a notorious invasive fish, the round goby, in a translocation-relevant system. *Ecology and Evolution* 2022:12:e9202. doi: 10.1002/ece3.9202
9. Bussmann, K., Hirsch, Ph.E., **Burkhardt-Holm, P.**, 2022. Invasive goby larvae: first evidence as stowaways in small watercraft motors. *Management of Biological Invasions* 13(1), 191-203. doi: 10.3391/mbi.2022.13.1.11.
10. Purser, A., Hehemann, L., Boehringer, L., Tippenhauer, S., Wege, M., Bornemann, H., Pineda-Metz, S.E.A., Flintrop, C.M., Koch, F., Hellmer, H.H., **Burkhardt-Holm, P.**, Janout, M., Werner, E., Glemser, B., Balaguer, J., Rogge, A., Holtappels, M., Wenzhoefer, F. 2022. A vast icefish breeding colony discovered in the Antarctic. *Current Biology*. doi:10.1016/j.cub.2021.12.022.
11. Strobel, A., Lille-Langøy, R., Segner, H., **Burkhardt-Holm, P.**, Goksøyr, A., Odd, A.K. 2021. Xenobiotic metabolism and its physiological consequences in high-Antarctic Notothenioid fishes. *Polar Biology*. doi: 10.1007/s00300-021-02992-4.
12. Wiegleb, J., Hirsch, Ph.E., Seidel, F., Rauter, G., **Burkhardt-Holm, P.**, 2021. Flow, force, behaviour: assessment of a prototype hydraulic barrier for invasive fish. *Hydrobiologia* (2022) 849, 1001–1019. doi: 10.1007/s10750-021-04762-z.
13. Leistenschneider, C., **Burkhardt-Holm, P.**, Mani, T., Primpke, S., Taubner, H., Gerdts, G. 2021. Microplastics in the Weddell Sea (Antarctica): A Forensic Approach for Discrimination between Environmental and Vessel-Induced Microplastics. *Environ. Sci. Technol.* 55, 23, 15900–15911. doi: 10.1021/acs.est.1c05207 (most read).
14. Paler, M.K.O., Leistenschneider, C., Migo, V, **Burkhardt-Holm, P.** 2021. Low microplastic abundance in *Siganus* spp. From the Tañon Strait, Central Philippines. *Environmental Pollution* 284, 117166. doi: 10.1016/j.envpol.2021.117166.



15. Yong, M.M.H., Leistenschneider, C., Miranda, J.A., Paler, M.K., Legaspi, Ch., Germanov, E., Araujo, G., **Burkhardt-Holm, P.**, Erni-Cassola, G. 2021. Microplastics in fecal samples of whale sharks (*Rhincodon typus*) and from surface water in the Philippines. *Microplastics and Nanoplastics*, 1, 17. doi: 10.1186/s43591-021-00017-9.
16. Hirsch, P.E., N'Guyen, A., **Burkhardt-Holm, P.** 2021. Hobbyists acting simultaneously as anglers and aquarists: Novel pathways for non-native fish and impacts on native fish. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 31, 6, 1285-1296. doi: 10.1002/aqc.3557.
17. Egger, B., Wiegleb, J., Seidel, F., **Burkhardt-Holm, P.**, Hirsch, P.E. 2020. Comparative swimming performance and behaviour of three benthic fish species: The invasive round goby (*Neogobius melanostomus*), the native bullhead (*Cottus gobio*), and the native gudgeon (*Gobio gobio*). *Ecology of freshwater fish*. 30 (3), 391-405. doi: 10.1111/eff.12592.
18. Bosshart, S., Erni-Cassola, G., **Burkhardt-Holm, P.** 2020. Independence of microplastic ingestion from environmental load in the round goby (*Neogobius melanostomus*) from the Rhine river using high quality standards. *Environmental Pollution*, 267, 115664.
19. Wiegleb, J., Hirsch, P.E., Egger, B., Seidel, F., **Burkhardt-Holm, P.** 2020. Flow field-induced drag forces and swimming behavior of three benthic fish species. *Limnologica*. 84, 125812.
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22. **Burkhardt-Holm, P.**, Wahli, T., Negele, R. D., Meier, W. 1997. Effects of nonylphenol on trout surface epithelia. Annual Meeting of the Society for Experimental Biology University of Kent, Canterbury, Great Britain, A5.15.
23. Schmidt, H., Escher, M., Wahli, T., Meier, W., **Burkhardt-Holm, P.** 1996. Belastung von Fliessgewässern und Auswirkungen auf die Fischpopulation am Beispiel der Langeten. - Tagung der Fachgruppe "Fischkrankheiten" in Verbindung mit der EAFP/deutsche Sektion, DE-Königswartha, 24.-26.9.1996. Verlag der deutschen Veterinärmedizinischen Gesellschaft e.V., 155-160.

24. Escher, M., Schmidt, H., Büttner, S., Wahli, T., Meier, W., **Burkhardt-Holm, P.** 1996. Gesundheitsgefährdung von Bachforellen unterhalb einer Kläranlage. Tagung der Fachgruppe "Fischkrankheiten" in Verbindung mit der EAFF/deutsche Sektion, DE-Königswartha, 24.- 26.09.1996. Verlag der deutschen Veterinärmedizinischen Gesellschaft e.V., 161-166.
25. **Burkhardt-Holm, P.**, Braunbeck, T., Storch, V. 1994. Histo- und cytopathologische Effekte von 4- Chloranilin in den Kiemen embryonaler Zebraärblinge (*Brachydanio rerio*). Tagung der Deutschen Sektion der EAFF, Wolfegg, Baden-Württemberg, Germany, 14./15.09.1994, 104-107.

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**Abstracts and Posters (SELECTION)**

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1. Wiegleb, J., Hirsch Ph.E., Seidel, F, Rauter, G, **Burkhardt-Holm, P.** 2022. Swimming competition! Who beats the flow in a hydraulic barrier for invasive fish? INTECOL Geneva, 28.08.-02.09.2022.
2. Leistenschneider, C., Primpke, S., Taubner, H., **Burkhardt-Holm, P.**, Gerdts, G. 2022. Microplastics and ship paint particles in the Weddell Sea, Southern Ocean: A forensic investigation. MICRO 2022, Lanzarote, 14.-18.11.2022.
3. Leistenschneider, C., **Burkhardt-Holm, P.**, Mani, Th., Primpke, S., Taubner, H., Gerdts, G. 2022. Paint Particles in the Weddell Sea (Antarctica): A Forensic Investigation. SETAC annual meeting, Copenhagen, 15.-19.05.2022.
4. Leistenschneider, C., Primpke, S., **Burkhardt-Holm, P.**, Gerdts, G. 2020. Microplastics and ship paint in the Weddell Sea, Antarctica. MICRO- Fate and Impacts of Microplastics, Lanzarote, 23.-27.11.2020.
5. Bussmann, K., **Burkhardt-Holm, P.** 2019. Stowaways on my boat? Engaging boat owners with aquatic invasive species using citizen science. ICYMARE, Bremen, 24.-29.09.2019.
6. **Holm, P.** 2018. Microplastics in Rhine Riverbed Sediments. MICRO 2018, Lanzarote, 19.11. 2018.
7. Mani, T., Frehland, S. , Kalberer, A., **Burkhardt-Holm, P.** 2018. MOSeS: Microplastics Oil Separation Standard for Surface, Soil and Sediment Samples, Monte Verità, 30.10.2018.
8. Bussmann, K., **Burkhardt-Holm, P.** 2018. Round goby eggs and leisure boats – the search for the missing link (a proposal). Goby meeting, Chioggia, Venice Italy. 07.-09.03.2018.
9. Wiegleb, J., Hirsch, P.E., **Burkhardt-Holm, P.** 2018. Do round gobies overcome strong currents in fish passes? -Application of 3D-printed fish. Goby meeting, Chioggia, Venice Italy. 07.-09.03.2018.
10. Hirsch, P.E., Schillinger, M., **Burkhardt-Holm, P.** Weigt, H. 2017. Integrating Economic and Ecological Benchmarking for a Sustainable Development of Hydropower. Abstract NTNU Sustainability Science Conference, Trondheim Norway. 18.-20.10.2017.



11. Adrian-Kalchhauser, I., Walser, J.C., Schwaiger, M., **Burkhardt-Holm, P.** 2017. Maternal mRNA is able to transmit temperature information across generations in wild fish. Abstract. ESEB, Groningen, Netherlands, 20.-25.8.2017.
12. Adrian-Kalchhauser, I., Walser, J.C., **Burkhardt-Holm, P.** 2017. Maternal mRNA is able to transmit temperature information across generations in wild fish. Abstract. Biology17, Bern, Switzerland, 02.-03.02.2017.
13. Somerville, V., Walser, J.C., **Burkhardt-Holm, P.**, Adrian-Kalchhauser, I. 2017. Methylome wide association study of two reproductive phenotypes in the round goby. Abstract. Biology17, Bern, Switzerland, 02-03.02.2017.
14. Strobel, A., Segner, H., Zennegg, M., Schmid, P., **Burkhardt-Holm, P.** 2016. Are Antarctic fish capable of coping with anthropogenic chemicals? Swiss Canadian Polar Research Symposium. 21-22.11.2016.
15. Hirsch, P.E., Schillinger, M., Apolloni, K., Weigt, H., **Burkhardt-Holm, P.** 2016. Combining ecological and economic benchmarks towards a sustainable development of hydropower. Societas Internationalis Limnologia, DGL, SIL Austria meeting. Vienna, Austria, 28.-30.09.2016.
16. Strobel, A., Segner, H., **Burkhardt-Holm, P.** 2016. Effects of environmental pollutants and changing temperature on the hepatic energy budget of High-Antarctic fish. Abstract SCAR Open Science Conference, Kuala Lumpur, Malaysia, 20.-30.08.2016.
17. Adrian-Kalchhauser, I., Hirsch, P.E., Behrmann-Godel, J., N'Guyen, A., Watzlawczyk, S., Gertzen, S., Borchering, J., **Burkhardt-Holm, P.** 2016. Genetic evidence for the translocation of invasive bighead goby along rivers by commercial vessels. Poster. Neobiota, Vianden, Luxembourg, 14.-16.09.2016.
18. Adrian-Kalchhauser, I., Somerville, V., Walser, J.C., **Burkhardt-Holm, P.** 2016. Epigenetic mechanisms and the success of invasive vertebrates. Poster. Neobiota, Vianden, Luxembourg, 14.-16.09.2016.
19. Strobel, A., Segner, H., **Burkhardt-Holm, P.** 2016. How efficient and thermally flexible is the toxicant metabolism of Antarctic notothenioid fish? Poster. SCAR Open Science Conference, Kuala Lumpur, Malaysia, 20.-30.08.2016.
20. Adrian-Kalchhauser, I., Walser, J.C., Pippel, M., Schloissnig, S., **Burkhardt-Holm, P.** 2016. Transgenerational adaptation mechanisms in wild populations of *Neogobius melanostomus*. Abstract. EMBO Symposium New Models for Linking Evolution and Ecology, Heidelberg, Germany, 08.-11.05.2016.

21. Kalchhauser, I., Hirsch, P.E., N'Guyen, A., Watzlawczyk, S., Gertzen, S., Borcharding, J., **Burkhardt-Holm, P.** 2015. Adaptation and selection processes at the invasion front of a globally expanding vertebrate. Poster. Congress of the European Society for Evolutionary Biology, 09.-14.08.2015.
22. Hirsch, P.E., Thorlacius, M., Rüegg, A., Indermaur, A., Brodin, T., **Burkhardt-Holm, P.** 2015. In water, on land, and in the air - transporting experimental fish across Europe. Poster. Fishbase Symposium, Stockholm, Sweden, 19.10.2015.
23. Kalchhauser, I., Burkhardt-Holm P. 2015. Ponto-Caspian gobies. How bighead goby population genetics relate to shipping. Abstract. CeMEB Meeting, Tjärnö, Sweden. April 2015.
24. Kalchhauser, I., Borcharding, J., **Burkhardt-Holm, P.** 2015. European bighead goby display large scale genetic homogeneity and small scale genetic differentiation in correlation with shipping patterns. European Goby Meeting, Umea, Sweden. 24.-27.02.2015.
25. Kalchhauser, I., Hirsch, P.E., N'Guyen, A., **Holm P.** 2015. Kooperation von Forschung und Gesellschaft für ein erfolgreiches Management von invasiven Arten. Poster. Swiss Forum on Conservation Biology SWIFCOB 15, Biodiversität und Politik: Vielfalt bewegt, 16.01.2015.
26. Hirsch, P.E., Eckmann, R., Weigt, H., **Burkhardt-Holm, P.** 2014. Water-level fluctuations and habitat mismatch affect phenotypes of perch (*Perca fluviatilis*). Abstract. EcoFil, České Budějovice, Czech Republic, 08.-11.09.2014.
27. Strobel, A., **Holm, P.**, Segner, H. 2014. How efficient are the xenobiotica biotransformation capacities in antarctic notothenioid fish compared to temperate species? Poster. ICBF Conference, Edinburgh, United Kingdom, 03.10.2014.
28. Kalchhauser, I., Burkhardt-Holm P. 2014. Schwarzmeergrundeln in der Schweiz. Abstract. AGIN Symposium, Olten, Switzerland, 23.01.2014.
29. Kalchhauser, I., N'Guyen, A., Hirsch, P.E., **Burkhardt-Holm, P.** 2013. Ponto-Caspian gobies in Switzerland – Science meets Management. Abstract. European Vertebrate Pest Management Conference, Turku, Finland, 24.09.2013.
30. Kalchhauser, I., Mutzner, P., Hirsch, P.E., N'Guyen A., **Burkhardt-Holm, P.** 2013. Invasion genetics of goby species in European freshwaters. Poster. Freshwater Invasives – Networking for Strategy, Galway, Ireland, 08.-11.04.2013.

31. Kalchhauser, I., Mutzner, P., **Burkhardt-Holm P.** 2012. Invasion genetics of bighead and round goby in European freshwaters. Poster. Evolutionary ecology and management of aquatic ecosystems, Eawag, Dübendorf, 22.-23.11.2012.
32. Kalchhauser, I., Mutzner, P., **Burkhardt-Holm, P.** 2012. Tracing provenience and dispersal mode of gobies invading Switzerland by microsatellite analysis. Poster. NEOBIOTA 2012, Pontevedra, Spain, 11.09.2012.
33. Berli B., **Burkhardt-Holm P.**, Tierney K.B. 2011. Sediment alters the swimming performance of individual and schooling salmonids. Abstract. Annual meeting of the Canadian Society of Zoologists, Ottawa, Canada, 16.-20.05.2011.
34. Michel C., **Burkhardt-Holm P.** 2011. Suspended mineral particles affect rainbow trout *Oncorhynchus mykiss*. Histopathology workshop on lymphoid organs (including musculoskeletal/ nervous system pathology). Abstract. 15th International conference on diseases of fish and shell fish of the European Association of Fish Pathologists (EAFP), Split, Croatia, 12.-16.09.2011.
35. Schindler Y., Michel C., **Burkhardt-Holm P.**, Thorpe K., Alewell C. 2010. The spatial and temporal dynamic of fine sediment input in a small Swiss river in the foothills of the Alps, Poster. Swiss- Korean Science Days, Seoul, South Korea, 09.-10.09.2010.
36. Schindler, Y., Michel, C., **Burkhardt-Holm, P.**, Thorpe, K., Alewell, C. 2010. The abiotic environment of the interstitial of a small Swiss river in the foothills of the Alps and its influence on gravel spawning brown trout (*Salmo trutta L.*). Poster. European Geosciences Union General Assembly, Vienna, Austria, 02.-07.05.2010.
37. A Marca-Pereira, M., Thorpe, K.L., **Burkhardt-Holm, P.** 2007. Abstract and poster: Development of an in vitro gonad culture to quantify the effects of aromatase inhibitors in brown trout. NRP50 meeting, Magglingen, Switzerland, 09.-11.09.2007.
38. A Marca-Pereira, M., Thorpe, K.L., **Burkhardt-Holm, P.** 2007. Abstract and poster. Development of an in vitro gonad culture to quantify the effects of aromatase inhibitors in brown trout. 8th International Symposium on Reproductive Physiology of Fish, Saint Malo, France, 03.-08.06.2007.
39. **Burkhardt-Holm, P.** 2007. Decline of brown trout (*Salmo trutta*) in Switzerland - How to assess potential causes in a multi-factorial cause-effect relationship. Abstract. 14th International Symposium PRiMO (Pollutant Responses in Marine Organisms), Florianópolis, Santa Catarina, Brazil, 6.- 9.05.2007.

40. Körner, O., Kohno, S., Schönenberger, R., Suter, M.J.F., Knauer, K., Guillet, L.J., **Burkhardt-Holm, P.** 2006. Effect of water temperature on vitellogenin expression in juvenile brown trout after exposure to ethinylestradiol, Poster. NFP 50 Annual Meeting, Giessbach, Brienz, Switzerland, 15.–17.10.2006.
41. Burki, R., Vermeirssen, E.L.M., Körner, O., Joris, C., **Burkhardt-Holm, P.**, Segner, H. 2006. Combined effect of estrogenic exposure and the proliferative kidney disease in rainbow trout, spoken presentation. Abstract. ESCPB 2006 congress, Antwerpen, Belgium, 17.-20.09.2006.
42. Abicht, H., Knauert, S., **Burkhardt-Holm, P.**, Knauer, K. 2006. Bestimmung der Toxizität von Kupfer für die permanente Fischzelllinie Rtgill: Oxidativer Stress und DNS-Schäden. Abstract. 11th Annual Meeting of SETAC-GLB, Landau, Germany, 03.-05.09.2006.
43. Leimgruber, A., Knauert, S., **Burkhardt-Holm, P.**, Knauer, K. 2006. Co-Toleranz von Phytoplanktongemeinschaften gegenüber PS-II Inhibitoren. Abstract. 11th Annual Meeting of SETAC-GLB, Landau, Germany, 03.-05.09.2006.
44. **Burkhardt-Holm, P.** 2006. Wenn die Angler klagen. Forschung und offene Fragen zum Fischrückgang in der Schweiz. Abstract. IGB, Berlin, Germany, 16.11.2006.
45. Schwartz, P., Hartmann, N., Bucheli, T.D., **Burkhardt-Holm, P.** 2006. General toxicity and endocrine disruption - Effects of zearalenone on early life stages of Zebrafish (*Danio rerio*), Poster. NFP 50 Annual Meeting, Giessbach, Brienz, Switzerland, 15.–17.10.2006.
46. **Burkhardt-Holm, P.**, Burki, R., Segner, H., Peter, A., Schubert, S., Suter, M.J.-F., Schönenberger, R., Borsuk, M. 2006. Estrogenic endocrine disruption in Switzerland: Assessment of fish exposure and modeling of effects on the population level (SAFE). Poster. Gordon Research Conference, Il Ciocco, Barga, Italy, 04.-09.06.2006.
47. **Burkhardt-Holm, P.**, Segner, H., Burki, R., Peter A., Borsuk M. 2005. Endocrine disruption in Switzerland: Assessment of fish exposure and effects – SAFE. Abstract. Workshop NRP 50 Endocrine Disruptors, Cadro, Lugano, Switzerland, 02.-04.10.2005.
48. Vermeirssen, E.L.M., Körner, O., Joris, C., **Holm, P.**, Segner, H. 2005. Assessment of estrogenic exposure in brown trout (*Salmo trutta*). Poster. Workshop NRP 50 Endocrine Disruptors, Cadro, Switzerland, 02.-04.10.2005.
49. Bopp, S., **Holm, P.**, Knauer, K. 2005. Ist die Detektion reaktiver Sauerstoffspezies (ROS) ein geeigneter unspezifischer Biomarker für Mikroverunreinigungen? In: Books of Abstracts of 10th Annual Meeting of SETAC-GLB, Basel, Switzerland, 28.-30.09.2005.

50. Körner, O., Knauer, K., Thoma, G., **Holm, P.** 2005. Wie geeignet ist Vitellogenin als Biomarker einer östrogenen Belastung im Freiland? In: Books of Abstracts of 10th Annual Meeting of SETAC-GLB, Basel, Switzerland, 28.-30.09.2005.
51. Körner, O., Vermeirssen, E.L.M., **Burkhardt-Holm, P.** 2005. Survey of plasma vitellogenin and intersex in brown trout from Swiss rivers with reported catch decline. Poster. 15th SETAC Europe Annual Meeting, Lille, France, 22.-26.05.2005.
52. Suter, M.J.F., Strehler, A., Schönenberger, R., Vermeirssen, E.L.M., Eggen, R.I.L., **Burkhardt-Holm, P.** 2004. How estrogenic are Swiss rivers? A comparative approach using chemical analysis, bioassays and model predictions. Abstract. Portland, Oregon, USA, 14.-18.11.2004.
53. Vermeirssen, E.L.M., Burki, R., Joris, C., Peter, A., Segner, H., Suter, M.J.F., **Burkhardt-Holm, P.** 2004. Characterisation of the estrogenicity of Swiss Midland rivers using a recombinant yeast bioassay and plasma vitellogenin concentrations in feral male brown trout. Abstract. 5th International Symposium on Fish Endocrinology, Castellon, Spain, 05.-9.09.2004.
54. Körner, O., Zimmerli, S., Vermeirssen, E.L.M., Segner, H., **Burkhardt-Holm, P.** 2004. Catch decline in Swiss trout (*Salmo trutta*): are reproductive parameters impaired? Abstract. 5th International Symposium on Fish Endocrinology, Castellon, Spain, 05.-09.09.2004.
55. Vermeirssen, E.L.M., Körner, O., **Burkhardt-Holm, P.** 2004. Mini caging of brown trout and passive water sampling methods for assessing environmental estrogens in Swiss Midland rivers. Abstract. CREDO cluster workshop on the ecological relevance of chemically induced endocrine disruption in wildlife. University of Exeter, Exeter, Great Britain, 5.-7.07.2004.
56. Hartmann, P.C., **Burkhardt-Holm, P.**, Giger, W. 2002. Polybrominated Diphenyl Ether Flame Retardants in Fish Bile and Livers from Swiss Rivers. Abstract. European Meeting on Environmental Chemistry, Geneva, Switzerland, 12/2002.
57. Hartmann, P.C., **Burkhardt-Holm, P.**, Giger, W. 2002. Polybrominated Diphenyl Ether Flame Retardants: Methods and First Assessment in Fish from Swiss Rivers. Abstract. Workshop on the Analysis of Brominated Flame Retardants in Environmental Samples. CSIC, Barcelona, Spain, 10/2002.
58. Hartmann, P.C., **Burkhardt-Holm, P.**, Giger, W. 2002. Polybrominated Diphenyl Ether Flame Retardants: Methods and First Assessment in Fish from Swiss Rivers. Abstract. Fall Meeting of the Swiss Chemical Society, Basel, Switzerland, 10/2002.

59. Schweigert, N., Behra, R., Escher, B., **Burkhardt-Holm, P.**, Eggen, R. I. L. 2001. Ecotoxicology as a part of the Swiss modular concept in the evaluation of surface waters. Abstract. 6th International Conference of the Aquatic Ecosystem, Amsterdam, Netherlands.
60. von Tschärner, C., Wyder, M., Nicolet, J., **Burkhardt-Holm, P.**, Suter, M. M. 1998. Is *Malassezia pachydermatitis* phagocytized by activated keratinocytes in culture? Abstract. 14th AAVD/ACVD meeting, San Antonio, USA.
61. Wahli, T., **Burkhardt-Holm, P.**, Schneeberger, U., Meier, W. 1995. Investigation of the decrease in fish populations in two Swiss river systems. Abstract. EAFP conference, Palma de Mallorca, Spain.

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 INVITED ORAL PRESENTATIONS
 

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1. **Holm, P.** 2022. Invasion der Schwarzmeergrundeln im Oberrhein und Auswirkungen auf das Gewässerökosystem. Forum Ökologie, Rundgespräch, Bayerische Akademie der Wissenschaften, München. 25.05.2022.
2. **Holm, P.** 2021. Cumulative Effects – Multiple Stressors in Cetacean Research – a brief summary on the Pollution 2025 workshop – IWC, SC, Climate Change workshop, online. 30.11. – 03.12.2021.
3. **Holm, P.** 2021. Expedition with the Ice Breaker "Polarstern" in the Antarctica. Sustainable Future Research Lunch, Basel. 29.05.2021
4. **Holm, P.** 2020. Microplastics – Basel Sustainability Forum, Basel, 30.09.2020.
5. **Holm, P.** 2019. Mikroplastik-Vorkommen in Gewässern der Schweiz und international. EDA - Contribution of Switzerland to International Maritime Activities, Basel, 21.10.2019.
6. **Holm, P.** 2019. Potential mitigation measures for reducing exposure of cetaceans to persistent organic pollutants (POPs), IWC Scientific Advisory Committee, Nairobi, Kenya, 13.05.2019.
7. **Holm, P.** 2018. Microplastics in Rhine Riverbed Sediments. MICRO 2018, Lanzarote, 19.11. 2018.
8. Mani, T., Frehland, S. , Kalberer, A., **Burkhardt-Holm, P.** 2018. MOSeS: Microplastics Oil Separation Standard for Surface, Soil and Sediment Samples, Monte Verità, 30.10.2018.
9. **Holm, P.** 2018. Pollution in the Southern Ocean - POP's, Microplastic. SKPH-Meeting: "Science Highlight", Bern, 20.04.2018.
10. **Holm, P.** 2017. Invasive Grundeln aus dem Schwarzen Meer in heimischen Gewässern – welche Konsequenzen sind zu erwarten? SVNF-Veranstaltung, Invasive Neozoen in Schweizer Gewässern, Basel, 08.11.2017.
11. **Holm, P.;** 2017. Forschung in aquatischer Ökologie bei MGU (Mensch-Gesellschaft-Umwelt), Institute for Terrestrial and Aquatic Wildlife Research (ITAW), Büsum, 09.01.2017
12. **Holm, P.,** 2016. "Is this Biology?" To solve real-world problems scientists are provoked to think out-of-the-box. University of Cologne. Institute of Zoology, Cologne, Germany, 09.11.2016.

13. **Burkhardt-Holm, P.**, 2016. Mikroplastik im Rhein. Bund/Länder Gespräch zu Mikroplastik in Binnengewässern. Bayrisches Landesamt für Umwelt, Wielenbach, 10.03.2016.
14. **Holm, P.**, 2016. Chair Session Earth Science, Water, Science and Technology in Society forum. Kyoto, Japan, 03.10.2016.
15. **Holm, P.**, 2016. RACC in Switzerland. River Restoration. Science and Technology in Society forum. Regional Action on Climate Change (RACC). Building Consensus for Action on Climate Threats. Preventing new risk, reducing, existing risk and strengthening resilience. Kyoto, Japan, 01.10.2016.
16. **Burkhardt-Holm, P.** 2016. An interdisciplinary course on Sustainable Development on Bachelor Level at University of Basel, Switzerland – what can we learn for other courses in higher education? Community of Practice for More Effective Implementation of Higher Education for Sustainability in Asia. Nanyang Technological University, Singapore, 22.04.2016.
17. **Burkhardt-Holm, P.** 2016. Fischnetz -Entstehung, Ergebnisse und Auswirkungen. Vortrag im FIBER- Seminar “Fischrückgang in der Schweiz – wo stehen wir heute?” Kongresszentrum Olten, Switzerland, 27.02.2016
18. **Holm, P.**, Strobel, A., Segner, H., Mark, F., Koschnik, N., Scheuffele, H., Riginella, E., Christiansen, H., 2015. Ecology, toxicology, physiology and reproductive investment of Antarctic fish. MS Polarstern, Weddellsee, 29.12.2015.
19. **Holm, P.**, Hirsch, P.E., Adrian-Kalchhauser, I., N'Guyen, A. 2015. Gobies as a model for invasion biology, evolutionary ecology, and reproductive strategies. The goby meeting, Umea, Sweden, 26.02.2015.
20. **Burkhardt-Holm, P.** 2015. Where has all the plastic gone? Microplastics in the River Rhine and effects on a freshwater invertebrate. Ecology and Evolution Seminar (Bio 631), University of Alberta, Canada, 02.10.2015.
21. Mani, T.A., **Burkhardt-Holm, P.** 2015. Microplastics in the Rhine river between Basel (CH) and Rotterdam (NL). Aquatic Sciences Meeting, Granada, Spain, 27.02.2015.
22. **Burkhardt-Holm, P.** 2015. To initiate policy changes and sustainable management of invasive goby species collaboration with external stakeholders is a need. The Goby Meeting 2015, Umea, Sweden, 25.02.2015.
23. **Holm, P.** 2014. Nicht-heimische Grundeln in der Schweiz – Massnahmen zur Eindämmung und Schadensminimierung. Bundesanstalt für Wasserbau, Karlsruhe, Germany, 07.04.2014.



24. **Burkhardt-Holm, P.** 2014. Non-native gobies arriving in new river systems – what do we need to know to mitigate the problem? Ökologische Station Grietherbusch, Germany, 17.01.2014.
25. Hofer, C., **Holm, P.**, Roos, G., Graber, A., Graf, M. 2014. Podiumsdiskussion “Wer ernährt die Schweiz im Jahre 2050”, Konferenz Academia Engelberg “Nahrungssicherheit – Wissenschaft und Vertrauen”, Engelberg, Switzerland, 15.10.2014.
26. **Burkhardt-Holm, P.** 2014. Brown trout decline in the Alps: fish under multiple pressure of climate change, land use change, temperature-related disease and pollution. Conférence spéciale GRIL-RIVE- CRC Ecologie des eaux douces, Université du Québec à Trois-Rivières, Québec, Canada, 02.10.2014.
27. **Burkhardt-Holm, P.** 2014. Spreading of round goby in Europe and spawning trap as an approach to reduce propagule pressure. Special Seminar M149 Biological Sciences, Department of Biological Sciences, University of Alberta, Edmonton, Canada, 09.07.2014.
28. **Holm, P.** 2014. Higher education in sustainability – Experiences with a curriculum and critical reflection after running a master course in sustainable development for 8 years. Sustainability in Education, Pedagogical Themes and Practices in Asian Countries, Nanyang Executive Center, Nanyang Technological University, Singapore, 28.02.2014.
29. **Holm, P.** 2013. Microplastics in our rivers and lakes: do they pose a risk for aquatic food web? 2013 XeRR Research Idea Workshop on “Water”, University of Zurich, Switzerland, 27.11.2013.
30. **Burkhardt-Holm, P.** 2013. Non-native gobies arriving in new river systems – what do we need to know to mitigate the problem? Ecology and Evolution Seminar, University of Alberta, Edmonton, Canada, 08.11.2013.
31. **Burkhardt-Holm, P.** 2013. An inter-transdisciplinary project to cope with the challenge of invasive gobies arriving in the Rhine. IRES Seminar, UBC Vancouver, Canada, 05.11.2013.
32. **Burkhardt-Holm, P.** 2013. Biodiversity treatment by pollution. STS forum 10th Annual Meeting, Session of “Biodiversity”, Kyoto, Japan, 07.10.2013.
33. **Burkhardt-Holm, P.**, Kalchhauser, I., Hirsch, P., N`Guyen, A. 2013. Applied research as a basis for a sustainable management of non-native gobies. European Vertebrate Pest Management Conference, Turku, Finland, 24.09.2013.
34. **Holm, P.** 2013. What is an endocrine disruptor and why do we have to study these compounds? University of Alberta, Edmonton, Canada, 05.04.2013.

35. **Holm, P.** 2013. Importance of fine sediments for brown trout – how to assess their impact. University of Alberta, Edmonton, Biological Sciences Departmental Seminar (Biology 631 Series), Canada. 05.04.2013.
36. **Burkhardt-Holm, P.,** Segner H. 2012. Fish research in Switzerland. Polarstern Cruise ANT-XXVIII/4, Southern Ocean off Elephant Island 61° 34,07'S – 55° 1,42'W, 18.03.2012.
37. **Holm, P.** 2012. Microplastic – an emerging problem for aquatic life. Swissnex Singapore Events, hosted by NUS Environmental Research Institute, National University of Singapore, 11.12.2012.
38. **Burkhardt-Holm, P.** 2012. Successful knowledge-action-networks in European coastal cities. Regional Climate Change Conference (RCC4), Adjunct Session to The Ninth Annual Meeting of the Science and Technology in Society forum, “Adaptation to Natural and Social Impacts of Regional Climate Change”, Kyoto, Japan, 06.10.2012.
39. **Burkhardt-Holm, P.,** Zosso, M., Menn, C., Giehler, T., Rinkler P. 2012. What to do with expired drugs? A study on consumer behaviour with suggestions how to reduce urban water pollution. Singapore, International Water Week, Singapore, 03.07.2012.
40. **Burkhardt-Holm, P.** 2011. Knowledge Action Networks and Regional Climate Change Adaptation, RCC3 Workshop, Presentation on Europe. Science and Technology in Society forum. Kyoto, Japan, 01.10.2011.
41. **Holm, P.** 2011. Linking water quality issues to human health and environment: The fate of micro- pollutants. LKY School Lunchtime Talk, Lee Kuan Yew School of Public Policy, Singapore, 13.07.2011.
42. **Burkhardt-Holm, P.,** Götz, K. 2011. Environmental hormones: risk, fate and potential measures to reduce their entry into the water cycle (poster IWA-6501). Water Convention Conference, 4th Singapore International Water Week, Singapore, 04.-08.07.2011.
43. **Holm, P.** 2011. Estrogenic endocrine disruption in fish: extrapolation from organism to population. Biol631 - Biological Sciences Departmental Seminar, University of Alberta, Department of Biological Sciences, Edmonton, Canada, 21.01.2011.
44. **Holm, P.** 2011. Gonad organ culture of juvenile brown trout and effects of an aromatase inhibitor. Biol631 - Biological Sciences Departmental Seminar, University of Alberta, Department of Biological Sciences, Edmonton, Canada, 21.01.2011.
45. **Burkhardt-Holm, P.** 2010. Endocrine Disruptors-Micropollutants interfering with the health of man and wildlife. Facts, risks, and possible solutions on an emerging issue. Swiss Science Days, Seoul, South Korea, 10.09.2010.

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## PUBLIC OUTREACH (SELECTION)

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### POPULAR ARTICLES, ORAL CONTRIBUTIONS & PUBLIC RELATIONS

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Selection of over 140 public contributions:

1. **Holm, P.** 2022. Mikroplastik im Rhein. Vortrag "Territories of Waste", Tinguely Museum Basel. 01.12.2022.
2. **Holm, P.** 2022. Invasion der Schwarzmeergrundeln - Massnahmen zum Schutz des Rheins und anderer Gewässer. Forschungsprojekte in der Region. Uni am Markt 24.09.-16.11.2022.
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4. **Holm, P.** 2022. Klimawandel – eine Herausforderung für die Fische und Gewässer. Rotary Clubs, Sissach & Gelterkinden, 05.10.2022.
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6. **Holm, P.** 2022. Der Sound der Unterwassertiere, Radio SRF, Wissenschaftsmagazin, 19.02.2022. <https://www.srf.ch/audio/wissenschaftsmagazin/muaaah-boong-oder-gragrag-was-wassertiere-sich-erzaehlen?id=12143129>
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15. **Holm, P.** 2019. Von Walen und Menschen. Inner Wheel Club Berner Oberland, Thun, 10.04.2019.
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#### COMMITMENT TO THE PROMOTION OF YOUNG TALENTS

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5. **Holm, P.** 2014. Wieso ertrinken Fische nicht? Oder: Ein Tag im Leben von 'Nemo. Kinder-Uni Basel. Juni 2014.
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#### INTERVIEWS AND APPEARANCES ABOUT RESEARCH

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Contributed in many outreach events, e.g. Netzwerkanlass beider Basel 2020. «Die Exzellenz der Hochschullandschaft Region Basel». 24.08.2020, FHNW Muttenz. Swiss Polar Class 2020 (Swiss Polar Institute), Interview zur Sonderausstellung 'Erde am Limit' 2020 (Naturhistorisches Museum Basel).

Participated in over 35 interviews and contributed to over 305 newspaper articles and other media appearances on own research in the popular media, including SRF, ZDF, SNF, Beobachter Natur, DRS, Schweizer Familie, Politische Ökologie, UniNova, Basler Zeitung, NZZ, GEO, NZZ Campus, European Commission Environmental News, Galway-Mayo Institute of Technology GMIT.