
PATRICIA BURKHARDT-HOLM



CURRENT POSITIONS

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

HEAD OF THE PROGRAM "MAN – SOCIETY - ENVIRONMENT" (MSE)

Since 2003

Department of Environmental Sciences, University of Basel, Switzerland

CONTACT DETAILS

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PROFESSIONAL EXPERIENCE

- 1999 – 2003 **DIRECTOR OF THE NATIONAL RESEARCH PROGRAMME 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

EDUCATION

- 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.**
Ruprecht-Karls-University Heidelberg, Germany

EDUCATIONAL GRANTS

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

EXTENDED PROFESSIONAL STAYS ABROAD

since 2012	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
22.11. – 15.12.1998	Team of Dr. C. Hogstrand, Thomas Hunt Morgan School of Biological Sciences, University of Kentucky, Lexington, Kentucky, USA
01.03. – 30.04.1987	Team of Dr. S. Holmgren, Institute for Zoophysiology, University of Goteborg, Sweden
15.02. – 01.04.1983	University of San Carlos, Cebu City and Iloilo, Southeast-Asian Fisheries Development Center (SEAFDEC), Philippines

ACADEMIC HONOURS AND MERITS

- 2006 Award for the best poster: Knauert, 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

**PATRICIA BURKHARDT-HOLM
TRACK RECORD**

ADDITIONAL PROFESSIONAL ACTIVITIES

SELECTED CURRENT ADDITIONAL PROFESSIONAL ACTIVITIES

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	Swiss expert of the scientific advisory committee on 'Marine Plastic Litter and Microplastics' of the UN Environment Programme (UN Environmental Resolution 4).
Since 2019	Appointed convenor/chair subcommisson 'Environmental Concern', Scientific Committee, International Whaling Commission
Since 2019	Deputy president of the board "Naturhistorisches Museum Basel"
since 2017	Member of the board "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" (<i>firmm</i>) 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)

 PREVIOUS ADDITIONAL PROFESSIONAL ACTIVITIES (SELECTED)

2020	Expert for the SNF research commission
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
2013 – 2014	Member of the program committee “Food Security of Academia Engelberg”
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)

MAJOR RESEARCH INTERESTS

- 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

LIST OF CRUISES

Cruise: Antarctic Project “Microplastics in the Southern Ocean”
 Project Leader: **Holm, P.**
 Duration: Februar - March 2021
 Financed by: Germany
 Research vessel: FS Polarstern, PS124.

Approved Cruise: Antarctic Project “Microplastics off Antarctic Peninsula”
 Project Leader: **Holm, P.**
 Duration: March 2020- April 2020
 Financed by: Germany
 Research vessel: Maria S. Merian, MSM90 (postponed, date not yet known, corona-related)

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.

Cruise: Antarctic Project “Occurrence of Microplastics in the Antarctic Seas
 (Microplastics)”
 Project Leader: **Holm, P.** (not on board)
 Duration: January 2018 - March 2018
 Financed by: Germany
 Research vessel: FS Polarstern, PS111.

Cruise: Antarctic Project “Response of cold-stenothermal fish to environmental pollutants
 and changing temperature: physiological and immunological aspects”
 Project Leader: **Holm, P.**
 Duration: December 2015 - February 2016
 Financed by: Germany
 Research vessel: FS Polarstern, PS96, ANT-XXXI/2.

Cruise: Antarctic Project “Fish as Bioindicator: Condition and health of groundfish species
 around Elephant Island, the South Shetland Islands and at the tip of the Antarctic
 Peninsula”
 Project Leader: **Holm, P.**
 Duration: March 2012 – April 2012
 Financed by: Germany
 Research vessel: FS Polarstern ANT-XXVIII/4

REVIEWER ACTIVITY

SCIENTIFIC JOURNALS AND BOOKS

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

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; 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.)

SCIENCE FOUNDATIONS, EVALUATION PANELS AND FUNDING BOARDS

Akademien der Wissenschaften Schweiz (*Swiss Academies of Arts and Sciences*); 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 Adaptionsstrategien*</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
<i>Research on Sustainable Development*</i> (3)	Spring 2016 - Spring 2017
<i>Sustainability Science*(3)</i>	Spring 2014
<i>Interdisciplinarity in disciplinary PhD research in the context of sustainability (Winter School)*</i> (3)	Fall 2014

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

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

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

Supervision of Academic Theses

Co-supervisors from University of Basel, unless noted otherwise

DIPLOMA AND MASTER THESES

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 (<i>Pleurogramma antarcticum</i> , <i>Neopagetopsis ionah</i> and <i>Notothenia rossii</i>) from the Antarctic Peninsula and Eastern Weddell Sea.
Florian Christ	2020: Comparison of microplastics in bagged soil.
Mila Mi Hua Yong	2020: Microplastics in faecal samples of whale sharks (<i>Rhincodon typus</i>) and surface water in the Coral Triangle.
Risto Krebs	2019: Pollination of Sweet Cherry (<i>Prunus avium</i>) by Wild Pollinating Insects under Variable Weather Conditions (Co-Supervisor M. Albrecht, Agroscope).
David Scherrer	2019: Possible migration barrier for <i>Neogobius melanostomus</i> : Block ramps in a restored river section – Case Birs. (Co-Supervisor Dr. Philipp Hirsch).
Sophie Bosshart	2019: Microplastics Uptake by Round Gobies (<i>Neogobius melanostomus</i>) in the Rhine River.
Aita Gianelli	2019: „A Systematic Study of Sustainable Development Goals within Key Literature on Sustainable Water Management in Switzerland” (Co-Supervisor PD Dr. Flurina Schneider)
Markus Schüpbach	2019: „Nachhaltigkeit durch Berücksichtigung der Hochwassergefahren? Eine Analyse der Besiedlung im Grenzbereich der kartierten Hochwassergefahrengebiete in der Schweiz” (Co-Supervisor Prof. Dr. Margaretha Keiler)
Stefan Frehland	2019: Fate of Nanoplastic Particles and Microplastic Fibers in Wastewater Treatment Plants (Co-Supervisor: Dr. Denise Mitrano (EAWAG))
Andreas Kalberer	2018: Microplastics in Swiss Agricultural Soils The Relevance of Mulch Foil and Digestate Fertilizer for Plastic Pollution (Co-Supervisor: Prof. em. Dr. Dr. h.c. C. Körner)
Vincent Somerville	2017: Methylome wide association study of two mating season phenotypes in a wild Round Goby population (Co-Supervisors: Dr. I. Adrian-Kalchhauser, Prof. Dr. W. Salzburger (Zoological Institute))

- 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: Dr. P. 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: Hunziker, M., 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: Hirsch, P.)
- Maya Bütikofer 2014: Wie nachhaltig ist die Schafsömmernung im regionalen Naturpark Gantrisch? (Co-Supervisors: Scheidegger, C., FRG Parkwissen, Gantrisch, Switzerland; Werder, C., Alpe Beratung, Switzerland; Schneider, M., Agroscope Reckenholz-Tänikon, Switzerland)
- Sebastian Schillinger 2014: Ecological effects of water level fluctuations in a hydropower reservoir. (Co-Supervisors: Weigt, H., Hirsch, Ph.)
- Kerstin Glaus 2014: Bycatch or Targeted Fisheries? Artisanal Shark Fishing in Fiji. (Co-Supervisors: Brunnschweiler, J., ETHZ; Weder, R., Kalchhauser, I.)
- 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: Juraske, R., 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: Hirsch, Ph.)
- Peter Mutzner 2012: Genetic Diversity and Population Structure of the Invasive Goby Species *Ponticola kessleri* in Kleinhüningen and Birsfelden. (Co-Supervisor: Salzburger, W.)

- Mollie Chapman 2012: Linking People and Rivers: An interdisciplinary approach to understanding pesticide use among farmers in Colombia (Diaz, J., Programa de Ingenieria Sanitaria, Universidad de Boyocá, Tunja, Colombia)
- Simon Herzog 2012: Cytotoxic effects of mineral particles on fish gill cells in vitro (Co-Supervisors: Capitani, C., Institute of Mineralogy and Petrography)
- Tina Skerlak 2012: An Integrative System Dynamics Model of Farmers' Fertilizing Behaviour with Special Focus on Phosphorus (Co-Supervisor: Binder, C., ETHZ, University of Graz, Austria)
- Karla Schlie de Ramos 2012: Quantifiable Effects of Chemicals on Life Cycle Parameters (Co-Supervisor: Schuwirth, N., Eawag)
- Priska Sacher 2012: Dezentrale Sanitarsysteme – Eine vergleichende Fallstudie von Pilotprojekten mit Stoffstromtrennung unter Einbezug von Hotelbauten (Co-Supervisor: Gebauer, H., Eawag)
- Max Reichenbach 2012: Die Sensibilitat unterschiedlicher Mobilitatstypen fur die Begunstigung von Verhaltensanderungen durch Kontextanderungen. Eine Untersuchung ausgewahlter Gruppen am Beispiel der Bewertung des E-Bikes (Co-Supervisor: Bruppacher, S.)
- Tobias Fischer 2012: Untersuchung der Verbuschung von landwirtschaftlichen Flachen im Unter- alptal vor dem Hintergrund der Nachhaltigen Entwicklung. Eine Analyse auf der Basis von Luftbilddaten 1967-2000 (Co-Supervision. Principal Supervisor: Kuhn, N. J.)
- Elvira Sturmer 2011: Wahrnehmung energieeffizienter Gebaude durch Private und Darstellung in den Medien: Implikationen fur eine Kommunikationsstrategie zur Verbreitungsforderung energieeffizienter Bauweise (Co-Supervisor: Bruppacher, S.)
- Martin Wiech 2011: Gear Avoidance Behavior, Personality, Growth, and Metabolic Rate in Guppies. (Co-Supervisor: Heino, M., 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: Krysiak, F.)
- Marco Felicioni 2011: An Assessment of the Components of the Water Footprint of Swiss Paper Consumption. (Co-Supervisor: Yang, H., 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: Zehnder, A.J.B., 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: Tierney, K. University of Alberta, Edmonton, Kanada)
- Angela Solothurnmann 2010: Die Pilotwalpopulation in der Strasse von Gibraltar 1999 bis 2009: Zustand, Veranderungen und deren Ursachen. (Co-Supervisor: Holm, J., 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: Bruppacher, S.)
- 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: Köhler, A., 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-Supervision. Supervisor: Utzinger, J., Swiss Tropical Institute)
- Corina Schmitz 2010: Plastikmüll an den Stränden in Südspanien - wo, wie viel, wie umfangreich, wie sichtbar? (Co-Supervisor: Bruppacher, S.)
- Giorgia Crivelli 2010: Comparison of oxidative stress induction by pentachlorophenol (PCP) and its metabolite tetrachlorohydroquinone (TCHQ) on different fish cell lines. (Co-Supervisor: Pietsch, C.)
- Daniel Eglin 2010: Fishing Down the Food Web: Auswirkungen und Regulierungsmöglichkeiten. (Co-Supervisor: Krysiak, F.)
- Venla Kontiokari 2009: Induction of oxidative stress by atrazine and isoproturon (IPU) in different permanent fish cell lines. University of Helsinki. (Co-Supervisor: Pietsch, C., University of Basel, Penttinen, O.-P., University of Helsinki)
- Nadja Häfeli 2009: Untersuchung zur Fischtoxizität von Sedimenten und Biofilmen. (Co-Supervisor: Schwartz, P.)
- Patrick Weber 2009: Monitoring der Verstädterung im Grossraum Istanbul mit den Methoden der Fernerkundung. (Co-Supervisor: Parlow, E.)
- Aleix Ferrer 2008: Health risks related to wastewater reuse in Thailand using quantitative microbial risk assessment. (Co-Supervisors: Nguyen-Viet, H., Morel, A., Swiss Tropical Institute)
- Fanny Frei 2008: Scenario Analysis of the Swiss Passenger Car Sector from a Sustainability Perspective. (Co-Supervisors: Hoffelner, W., Boulouchos, K., ETH Zurich)
- Clea Henzen 2008: The Impact of Land Use on Biodiversity in the Framework of Life Cycle Assessment. (Co-Supervisor: Koellner, Th., 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

MASTER THESES (ONGOING)

Tiffany Meyer Microplastics in the Rhine near Basel: Spatial Distribution and Diversity in River Shore Sediments

Nandha Govindhasamy Forces that round goby experience in flowing water

Anita Maria Feierabend Age & trait variability of alpine plant species in a changing climate (Co-Supervisor: Christian Rixen, WSL cooperation)

PH.D COMMITTEES (EXTERNAL)

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

PH.D. THESES (INTERNAL, ONGOING)

Clara Leistenschneider since 2018: Microplastics: A potential threat to the remote and pristine ecosystem(s) of Antarctic Seas? (Working title)

Karen Bussmann since 2017: Invasive Ponto-Caspian gobies in Swiss rivers (Working title)

 PH.D. THESES (COMPLETED)

ACTED AS PRINCIPAL SUPERVISOR, UNLESS NOTED OTHERWISE

Joschka Wiegleb	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 <i>Salmo trutta</i> .
	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 (<i>Salmo trutta fario</i>). Faculty of Veterinary Medicine, University of Bern (co-supervision).

SELECTED FUNDING AWARDS

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 Programme 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 Programme: 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 vitellgenin 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 Biomonitorien. 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, Fischereinspektorat, 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

PUBLICATIONS



PEER-REVIEWED JOURNAL ARTICLES

1. 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
2. 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.
3. 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.
4. 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.
5. 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.

6. Leistenschneider, C., **Burkhardt-Holm, P.**, Mani, T., Primpke, S., Taubner, H., Gerdt, 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).
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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. *Limnologia*. 84, 125812.
13. Bussmann, K., **Burkhardt-Holm, P.** 2020. Round gobies in the third dimension – use of vertical walls as habitat enables vector contact in a bottom-dwelling invasive fish. *Aquatic Invasions* 15, 683-699.
14. Unger, B., Herr, H., Viquerat, S., Gilles, A., **Burkhardt-Holm, P.**, Siebert, U. 2020. Opportunistically collected data from aerial surveys reveal spatio-temporal distribution patterns of marine debris in German waters. *Environmental Science and Pollution Research international* 28, 2893-2903.
15. Lutz, E., Hirsch, P.E., Bussmann, K., Wiegleb, J., Jermann, H-P., Muller, R., **Burkhardt-Holm, P.**, Adrian-Kalchhauser, I. 2020. Predation on native fish eggs by invasive round goby revealed by species-specific gut content DNA analyses. *Aquatic Conservation 30: Marine and Freshwater Ecosystems*, 1566-1577.
16. Herr, H., **Burkhardt-Holm, P.**, Heyer, K., Siebert, U., Selling, J. 2020. Injuries, Malformations, and Epidermal Conditions in Cetaceans of the Strait of Gibraltar. *Aquatic Mammals*, 46(2), 215-235.

17. Mani, T., **Burkhardt-Holm, P.** 2019. Seasonal microplastics variation in nival and pluvial stretches of the Rhine River – From the Swiss catchment towards the North Sea. *Science of The Total Environment*, 135579.
18. Ruesch Schweizer, C., Di Giulio, A., **Burkhardt-Holm, P.** 2019. Scientific Support for Redesigning a Higher-Education Curriculum on Sustainability. *Sustainability* 11, 6035.
19. Di Giulio, A., Ruesch Schweizer, C., Defila, R., Hirsch, P., **Burkhardt-Holm, P.** 2019. "These Grandmas Drove Me Mad. It Was Brilliant!" - Promising Starting Points to Support Citizen Competence for Sustainable Consumption in Adults. *Sustainability* 11, 681.
20. **Burkhardt-Holm, P.**, N'Guyen, A. 2019. Ingestion of microplastics by fish and other prey organisms of cetaceans, exemplified for two large baleen whale species. *Marine Pollution Bulletin*, 144, 224-234.
21. Mani, T., Primpke, S., Lorenz, C., Gerdt, G., **Burkhardt-Holm, P.** 2019. Microplastic Pollution in Benthic Midstream Sediments of the Rhine River. *Environ. Sci. Technol.*, 53, 6053–6062.
22. Mani, T., Blarer, P., Storck, F.R., Pittroff, M., Wernicke, T., **Burkhardt-Holm, P.** 2019. Repeated detection of polystyrene microbeads in the Lower Rhine River. *Environmental Pollution*, 245, 634-641.
23. Mani, T.; Frehland, S.; Kalberer, A.; **Burkhardt-Holm, P.** 2019. Using castor oil to separate microplastics from four different environmental matrices. *Analytical Methods*, 11 (13), 1788-1794.
24. Somerville, V.; Schwaiger, M.; Hirsch, P. E; Walser, J.; Bussmann, K.; Weyrich, A.; **Burkhardt-Holm, P.**; Adrian-Kalchhauser, I. 2019. DNA Methylation Patterns in the Round Goby Hypothalamus Support an On-The-Spot Decision Scenario for Territorial Behavior. *Genes*. 10 (3), 1-22.
25. Adrian-Kalchhauser, I.; Walser, J.; Schwaiger, M.; **Burkhardt-Holm, P.** 2018. RNA sequencing of early round goby embryos reveals that maternal experiences can shape the maternal RNA contribution in a wild vertebrate. *BMC Evolutionary Biology*, 18 (1), 34.
26. **Burkhardt-Holm, P.**; Zehnder, A.J.B. 2018. Fischnetz: Assessing outcomes and impacts of a project at the interface of science and public policy. *Environmental Science & Policy*, 82, 52-59.
27. Hirsch, P. E.; N'Guyen, A.; Muller, R.; Adrian-Kalchhauser, I.; **Burkhardt-Holm, P.** 2018. Colonizing islands of water on dry land - on the passive dispersal of fish eggs by birds. *Fish and Fisheries*, 19(3), 502-510.
28. N'Guyen, A.; Hirsch, P. E.; Bozzuto, C.; Adrian-Kalchhauser, I.; Hôrková, K.; **Burkhardt-Holm, P.**; Zenni, R. 2018. A dynamical model for invasive round goby populations reveals efficient and effective management options. *Journal of Applied Ecology*, 55 (1), 342-352.

29. Strobel, A., Mark, F., Segner, H., **Burkhardt-Holm, P.** 2018. Expression of aryl hydrocarbon receptor-regulated genes and superoxide-dismutase in the Antarctic eelpout *Pachycara brachycephalum* exposed to Benzo(a)pyrene. *Environmental Toxicology and Chemistry*, 37 (5) 1487- 1495.
30. Strobel, A., Schmid, P., **Burkhardt-Holm, P.** , Segner, H., 2018, Zennegg, M. 2018. Persistent organic pollutants in red- and white-blooded High-Antarctic notothenioid fish from the remote Weddell Sea. *Chemosphere*. 193, 213 – 222.
31. Unger, B., Herr, H., Benke, H., Böhmert, M., **Burkhardt-Holm, P.**, Dähne, M., Hillmann, M., Wolff- Schmidt, K., Wohlsein, P., Siebert, U. 2017. Marine debris in harbor porpoises and seals from German water. *Marine Environmental Research*, 130: 77-84.
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21. Kalchhauser, I., Burkhardt-Holm P. 2015. Ponto-Caspian gobies. How bighead goby population genetics relate to shipping. Abstract. CeMEB Meeting, Tjärnö, Sweden. April 2015.
22. 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.
23. 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.
24. 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.

25. 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.
26. Kalchhauser, I., Burkhardt-Holm P. 2014. Schwarzmeergrundeln in der Schweiz. Abstract. AGIN Symposium, Olten, Switzerland, 23.01.2014.
27. 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.
28. 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.
29. 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.
30. 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.
31. 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.
32. 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 Pathologistst (EAFF), Split, Croatia, 12.-16.09.2011.
33. 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.
34. 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.
35. 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.

36. 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.
37. **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.
38. 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.
39. 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.
40. 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.
41. 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.
42. **Burkhardt-Holm, P.** 2006. Wenn die Angler klagen. Forschung und offene Fragen zum Fischrückgang in der Schweiz. Abstract. IGB, Berlin, Germany, 16.11.2006.
43. 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.
44. **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.
45. **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.
46. 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.

47. Bopp, S., **Holm, P.**, Knauer, K. 2005. Ist die Detektion reaktiver Sauerstoffspezies (ROS) ein geeigneter unspezifischer Biomerker für Mikroverunreinigungen? In: Books of Abstracts of 10th Annual Meeting of SETAC-GLB, Basel, Switzerland, 28.-30.09.2005.
48. 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.
49. 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.
50. 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.
51. 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.
52. 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.
53. 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.
54. 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.
55. 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.
56. 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.
57. 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.

58. von Tschanner, 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.
59. Wahli, T., **Burkhardt-Holm, P.**, Schneeberger, U., Meier, W. 1995. Investigation of the decrease in fish populations in two Swiss river systems. Abstract. EAFF conference, Palma de Mallorca, Spain.

 INVITED ORAL PRESENTATIONS

1. **Holm, P.** 2022. Wo Eisfische brüten, Eisberge entstehen, und Mikroplastik wandert – eine besondere Antarktisexpedition, firmm foundation for information and research on marine mammals, 19.02.2022.
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. Pollution 2025, IWC Intersessional Workshop, online. 01.-04.11.2021
4. **Holm, P.** 2021. Mikroplastikforschung in der Antarktis, Rector's Dinner, Basel. 28.10.2021
5. **Holm, P.** 2021. Wo Eisfische brüten, Eisberge entstehen, und Mikroplastik wandert – eine besondere Antarktisexpedition, Naturforschende Gesellschaft in Basel, NGIB, 16.09.2021.
6. **Holm, P.** 2021. Expedition with the Ice Breaker "Polarstern" in the Antarctica. Sustainable Future Research Luch, Basel. 29.05.2021
7. **Holm, P.** 2020. Microplastics – Basel Sustainability Forum, Basel, 30.09.2020.
8. **Holm, P.** 2019. Mikroplastik – selbst in der entlegenen Antarktis nachweisbar? Ricola Foundation, Laufen, 20.11.2019.
9. **Holm, P.** 2019. Mikroplastik. Naturwissenschaftliche Gesellschaft Winterthur, Winterthur, 08.11.2019.
10. **Holm, P.** 2019. Mikroplastik-Vorkommen in Gewässern der Schweiz und international. EDA - Contribution of Switzerland to International Maritime Activities, Basel, 21.10.2019.
11. **Holm, P.** 2019. „Sustainable Development“: Einblicke in die Forschung zur nachhaltigen Bewirtschaftung der Ressourcen. Förderverein Universität Basel, Kollegienhaus Universität Basel, 06.06.2019.
12. **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.
13. **Holm, P.** 2019. Von Walen und Menschen. Inner Wheel Club Berner Oberland, Thun, 10.04.2019.
14. **Holm, P.** 2019. Antarktis – Wie Tiere Grenzräume des Lebens meistern. Geographische Gesellschaft Basel, 21.03.2019.
15. **Holm, P.** 2018. Mikroplastik: Sind wir umgeben von Mini-Müll? Tec-Day Kanti Olten, 29.11.2018.
16. **Holm, P.** 2018. Microplastics in Rhine Riverbed Sediments. MICRO 2018, Lanzarote, 19.11.2018.
17. **Holm, P.** 2018. Wale und Walfang – und die Arbeit in der IWC. Studienstiftler – Lunch, Basel, 13.11.2018.
18. 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.

19. **Holm, P.** 2018. Pollution in the Southern Ocean - POP's, Microplastic. SKPH-Meeting: "Science Highlight", Bern, 20.04.2018.
20. **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.
21. **Holm, P.** 2017. Umweltprobleme in der Antarktis. Schweizerische Greina-Stiftung zur Erhaltung der alpinen Fließgewässer (SGS). 31. Stiftungsratversammlung, Schwyz, 23.06.2016.
22. **Holm, P.**, 2017. Microplastics in Rhine River. Brown Bag Talk and Lab Experience. Denk-weiter-Wochen, Tatort Nachhaltigkeit, Universität Basel, 25.04.2017
23. **Holm, P.**, 2017. Unterwasser. Wie geht's der Lebewelt im Rhein? AUE-Forum, Basel, 24.04.2017
24. **Holm, P.**, 2017. Lecture 1 "Invasive Fische im Rhein", lecture 2 "Mikroplastik", Studienstiftler-Lunch, Universität Basel, 12.04.2017
25. **Holm, P.**, 2017. Microplastics in Rhine River. Media conference, eco.naturkongress & prix eco.ch Museum Kleines Klingental, Basel, Switzerland, 15.03.2017
26. **Holm, P.**, 2017. Schwarzmundgrundeln im Rhein, Motor-Segelsportclub Hochrhein, D-Wehr-Brennet, 05.03.2017
27. **Holm P.**; 2017. *firrm* annual meeting, lecture 1 "Mit dem Eisbrecher Polarstern auf Forschungsreise in der Antarktis, lecture 2 "Die firrm-Forschung erfährt internationale Resonanz bei der Walfangkommission IWC", Kultur-und Kongresshaus Aarau, 25.02.2017
28. **Holm, P.**; 2017. Forschung in aquatischer Ökologie bei MGU (Mensch-Gesellschaft-Umwelt), Institute for Terrestrial and Aquatic Wildlife Research (ITAW), Büsum, 09.01.2017
29. **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.
30. **Burkhardt-Holm, P.**, 2016. Mikroplastik im Rhein. Bund/Länder Gespräch zu Mikroplastik in Binnengewässern. Bayrisches Landesamt für Umwelt, Wielenbach, 10.03.2016.
31. **Holm, P.**, Mani, T., Hübner, M., Straub, S., 2016. Microplastics Meeting WWF/ MGU Uni Basel in Zürich. WWF, Zurich, Switzerland, 01.11.2016.
32. **Holm, P.**, 2016. Chair Session Earth Science, Water, Science and Technology in Society forum. Kyoto, Japan, 03.10.2016.
33. **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.
34. **Holm, P.** 2016. Erlebnisbericht einer Antarktisreise. Schweizerische Greina-Stiftung zur Erhaltung der alpinen Fließgewässer (SGS). 30. Stiftungsratversammlung, 30.05.2016.

35. **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.
36. **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
37. **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, Weddelsee, 29.12.2015.
38. **Holm, P.**, Hirsch, P.E., Adrian-Kalchhauser, I., N'Guyen, A. 2015. Schwarzmeergrundeln in der Schweiz – Erkenntnisse und Fortschritte. Dialog. Wissenschaftsapéro, MGU, University of Basel, Switzerland, 11/2015.
39. **Holm, P.**, N'Guyen, A. 2015. Sportbootstransporte und Verarbeitung aquatischer Neozoen (Schwarzmeergrundeln, Quagga-Muscheln). AGIN-D-Besprechung, Basel/Rheinfelden, Switzerland, 11.08.2015.
40. **Holm, P.** 2015. Verschleppung aquatischer Neozoen am Beispiel der Schwarzmeergrundeln. Beitrag zur Tagung. 4. AGIN – Tagung, Olten, Switzerland, 06/2015.
41. **Holm, P.** 2015. Invasion der Schwarzmeergrundeln – neueste Erkenntnisse. Dialog. Delegiertenversammlung Aargauer Fischereiverband (AFV), Lupfig, Switzerland, 03/2015.
42. **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.
43. **Holm, P.** 2015. Invasive Grundeln aus dem Schwarzen Meer erobern heimische Gewässer. Tierpflegerseminar, University of Basel, Switzerland, 12.11.2015.
44. **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.
45. **Burkhardt-Holm, P.** 2015. 'Microplastics' and Antarctic fish. Lecture to graduate students in the School of Public Health SPH 522, University of Alberta, Canada, 01.10.2015.
46. **Holm, P.** 2015. Is this biology? IBM Research GmbH, Rüschlikon, Switzerland, 03/2015.
47. 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.
48. **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.

49. **Holm, P.** 2015. Vom Walfang zum Walschutz. 17. firmm -Treffen, Aarau, Switzerland, 21.02.2015.
50. **Holm, P.** 2014. Nicht-heimische Grundeln in der Schweiz – Massnahmen zur Eindämmung und Schadensminimierung. Bundesanstalt für Wasserbau, Karlsruhe, Germany, 07.04.2014.
51. **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.
52. **Holm, P.,** Hirsch, P.E., Adrian-Kalchhauser, I., N'Guyen, A. 2014. Grundel-Stakeholder Workshop, University of Basel, Switzerland, 27.11.2014.
53. **Holm, P.** 2014. Von Walfang und Walbeobachtung. Umweltkommission Starrkirch-Wil, Switzerland, 19.11.2014.
54. 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.
55. **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.
56. **Holm, P.** 2014. Schwarzmeergrundel-Projekt: Übersicht und Empfehlungen. Fischereiaufseherkurs, Pontresina, Switzerland, 22.08.2014.
57. **Burkhardt-Holm, P.** 2014. Spreading of round goby in Europe and spawning trap as an approach to reduce propagule pressure. Special Seminar MI49 Biological Sciences, Department of Biological Sciences, University of Alberta, Edmonton, Canada, 09.07.2014.
58. **Holm, P.** 2014. Schwarzmeergrundeln im Rhein bei Basel – betrifft das die Berufsfischerei in der Schweiz? 89. Ordentliche Generalversammlung des Schweizerischen Berufsfischerverbandes SBFV, Ramada Hotel La Palma au Lac, Locarno, Switzerland, 16.03.2014.
59. **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.
60. **Holm, P.** 2014. Grundeln im Hochrhein. Sitzung FISH (I)14, Internationale Kommission zum Schutz des Rheins, Koblenz, Germany, 05.02.2014.
61. **Holm, P.** 2013. Invasive Schwarzmeergrundeln auf dem Weg in die Schweiz. FHNW- Fachdidaktik Modul 3.1. Wissenschaftsorientierung, Basel, Switzerland, 06.12.2013.
62. **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.

63. **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.
64. **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.
65. **Burkhardt-Holm, P.** 2013. Biodiversity treatment by pollution. STS forum 10th Annual Meeting, Session of “Biodiversity”, Kyoto, Japan, 07.10.2013.
66. **Burkhardt-Holm, P.,** Kalchauer, 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.
67. **Holm, P.** 2013. Invasive Neozoen. Informationsabend Aargauischer Fischereiverband, Lupfig, Switzerland, 19.09.2013.
68. **Holm, P.** 2013. Von lebenden Fossilien und modernen Alleskönnern – Die Vielfalt der Fische. Bündner Naturmuseum, Chur, Switzerland, 20.08.2013.
69. **Holm, P.** 2013. Neozoen – welche Arten erobern derzeit die Schweiz? Invasive Grundeln im Hochrhein. BAFU, Fischerei-Infotag, Monitoring Fisch- und Krebsbestände Schweiz, Olten, Switzerland, 04.07.2013.
70. **Holm, P.** 2013. Invasive Grundeln im Rhein. ZONTA Club Liestal, Switzerland, 19.06.2013.
71. **Holm, P.** 2013. Was halten die Fische von “Urban Farming”? Grand Opening Urban Farmers Basel –UF001 LokDepot, Switzerland, 25.05.2013.
72. **Holm, P.** 2013. Invasive Fische aus dem Schwarzen Meer erobern die Schweiz – Problematik und Möglichkeiten der Abwehr. Naturforschende Gesellschaft, Basel, Switzerland, 15.05.2013
73. **Holm, P.** 2013. Die Überfischung der Meere – gibt es befriedigende Lösungen? Rotary Club Wynen- Surental, Switzerland, 01.05.2013.
74. **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.
75. **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.
76. **Holm, P.** 2013. Wie ein Fisch im Wasser – wie wohl fühlen sich unsere Fische in hohen Lagen? Auditorium der Academia Engiadina, Samedan, Switzerland, 14.03.2013.
77. **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.
78. **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.
79. **Holm, P.** 2012. Von lebenden Fossilien und modernen Alleskönnern – die Vielfalt der Fische. Vortragsreihe “Natur am Sibni”, Naturmuseum St. Gallen, Switzerland. 14.11.2012.

80. **Holm, P.** 2012. Fremde Fische in unseren Gewässern. Umweltkommission Starrkirch-Wil, Starrkirch-Wil, Switzerland, 07.11.2012.
81. **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.
82. **Burkhardt-Holm, P.** 2012. Feeding the world – the role of fisheries and aquaculture. 8th World Demographic and Ageing Forum, University of St. Gallen, Switzerland, 29.08.2012.
83. **Holm, P.** 2012. Der Mensch und das Meer. Lions Club Bern, Switzerland, 16.07.2012.
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INTERVIEWS AND APPEARANCES ABOUT RESEARCH

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 my 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.