

## LIST OF PUBLICATIONS

### Manuscripts under review

43 Harrison, PM, Helland, IP, Cooke SJ, Martins EG, Amundsen P-A, Alfredsen K, Beirao B, Bolland J, Castro-Santos T, Cowx I, Curry RA, Deng D, Dorian C, Duan M, Dudgeon D, Enders E, Egerrup M, Eloranta AP, Ferreira T, Graham EB, Hahn L, **Hirsch PE**, Kamal R, Linnansaari T, Lima C, Lucas M, Monk W, Noble R, Olden J, Pompeu P, Sabeter S, Silva A, Turgeon K, Weiwei Y, Wilkes M, Winemiller K, Xenopolous M, and Power, M. Research priorities for the development of fish friendly hydropower: a global list of 70 key questions. First revision at **Fish and Fisheries**

42 Behrmann-Godel J, Stoll S, Yohannes E, **Hirsch PE**, Keeping up with the Joneses – Phenotypic plasticity mediates group phenotypic composition in fish shoals. Under review at **Frontiers in Ecology and Evolution** (Manuscript ID: 439052)

### Peer-reviewed original articles

41 **Hirsch PE**, N'Guyen, Burkhardt-Holm P. Hobbyists acting simultaneously as anglers and aquarists - novel pathways for non-native fish and impacts on native fish. Accepted at **Aquatic Conservation Marine and Freshwater Ecosystems** (Manuscript ID: AQC-20-0154)

40 Ericsson P, Persson P, Behrens JW, Brodin T, **Hirsch PE**, Sundelin A, van Deurs M, Winberg von Friesen LW, Nilsson PA. Personality-dependent inter- and intraspecific foraging competition in the invasive round goby, *Neogobius melanostomus*. Accepted at **Journal of Fish Biology** (Manuscript ID: JFB-MS-18-698)

39 Egger B, Wiegbleb J, Seidel F, Burkhardt-Holm P, **Hirsch PE**. 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*). Accepted at **Ecology of Freshwater Fish** (Manuscript ID: EFF-20-0097)

38 Schillinger M, Weigt H, **Hirsch PE** (2020). Economic woes or environmental flows – hydropower under global energy market changes. **PLOS ONE** 15(8): e0236730

37 Lutz E\*, **Hirsch PE\***, Bussmann K, Wigleb J, Jermann H-P, Muller R, Burkhardt-Holm P, Adrian-Kalchhauser I (\*shared first authorship) (2020). Predation on native fish eggs by invasive round goby revealed by species-specific gut content DNA analyses. **Aquatic Conservation Marine and Freshwater Ecosystems** 1-12

36 Wiegbleb J, **Hirsch PE**, Egger B, Seidel F, Burkhardt-Holm P (2020). Flow field-induced drag forces and swimming behavior of three benthic fish species. **Limnologica** (accepted)

35 Behrens JW, von Friesen LW, Brodin T, Ericsson P, **Hirsch PE**, Persson A, Sundelin A, van Deurs M, Nilsson PA (2020). Personality- and size-related metabolic performance in invasive round goby (*Neogobius melanostomus*). **Physiology & Behavior** 215:112777

34 Somerville V, Schwaiger M, **Hirsch PE**, Bussmann K, Walser JC, 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): 219

33 Di Giulio A, Ruesch Schweizer C, Defila R, **Hirsch PE**, Burkhardt-Holm P (2019). These grandmas drove me mad. It was brilliant! – promising starting points to effectively support citizen competence for sustainable consumption in adults. **Sustainability** 11(3): 681

32 **Hirsch PE**, N'Guyen A, Adrian-Kalchhauser I, Muller R, Burkhardt-Holm P (2018). Colonizing islands of water on dry land – on the passive dispersal of fish eggs by birds. **Fish and Fisheries** 19:502–510

31 Samson E, **Hirsch PE**, Palmer S, Behrens J, Brodin T, Travis J (2017). Using individual-based models to prioritize research for improving invasive species management. **Frontiers in Ecology and Evolution** 5:149

## Philippe E Hirsch – List of Publications

30 Adrian-Kalchhauser I, N'Guyen A, **Hirsch PE**, Burkhardt-Holm P (2017). The Invasive round goby may attach its eggs to ships or boats - but there is no evidence. **Aquatic Invasions** 12: 263–267

29 Straub S, **Hirsch PE**, Burkhardt-Holm P (2017). Biodegradable and Petroleum-Based Microplastics Do Not Differ in Their Ingestion and Excretion but in Their Biological Effects in a Freshwater Invertebrate *Gammarus fossarum*. **International Journal Environmental and Public Health** 14: 774

28 N'Guyen A, **Hirsch PE**, Bozutto C, Adrian-Kalchhauser I, Hörková K, Burkhardt-Holm P. A dynamical model for invasive round goby populations reveals efficient and effective management options (2017). **Journal of Applied Ecology** 55: 342-352

27 **Hirsch PE**, Eloranta AP\*(shared first authorship), Amundsen P-A, Brabrand Å, Charmasson J, Helland IP, Power M, Sánchez-Hernández J, Sandlund OT, Sauterleute JF, Skoglund S, Ugedal O, Yang H (2017). Effects of anthropogenic water level regulations in reservoirs - an ecosystem approach with a special emphasis on fish. **Hydrobiologia** 794: 287–301

26 **Hirsch PE**, Thorlacius M, Brodin T, Burkhardt-Holm P (2017). An approach to incorporating individual personality in modelling fish dispersal across in-stream barriers. **Ecology and Evolution** 7:720-732

25 **Hirsch PE**, Schillinger M, Weigt H, Apolloni K, Burkhardt-Holm P (2016). Integrating economic and ecological benchmarking for a sustainable development of hydropower. **Sustainability** 8: 875

24 Bartels P, **Hirsch PE**, Svanbäck R, Eklöv P (2016). Dissolved organic carbon reduces habitat coupling by top predators in lake ecosystems. **Ecosystems** 19:955

23 Adrian-Kalchhauser I, **Hirsch PE**, Behrman-Godel J, N'Guyen A, Watzlawczyk S, Gertzen S, Borchering J, Burkhardt-Holm P (2016). The invasive bighead goby *Ponticola kessleri* displays large scale genetic similarities and small scale genetic differentiation in relation with shipping patterns. **Molecular Ecology** 25:1925-43

22 **Hirsch PE**, Adrian-Kalchhauser I, Flämig S, N'Guyen A, Defila R, Di Giulio A, Burkhardt-Holm P (2016). A tough egg to crack: recreational boats as vectors for invasive goby eggs and transdisciplinary management approaches. **Ecology and Evolution** 6: 707-715

21 **Hirsch PE**, N'Guyen A\*(shared first authorship), Adrian-Kalchhauser I, Burkhardt-Holm P (2016). What do we really know about the impacts of one of the 100 worst invaders in Europe? A reality check. **Ambio** 45: 267-279

20 N'Guyen A, **Hirsch PE** \*(shared first authorship), Adrian-Kalchhauser I, Burkhardt-Holm P (2016). Improving invasive species management by integrating priorities and contributions of scientists and decision makers. **Ambio** 45: 280-289

19 **Hirsch PE**, Burkhardt-Holm P, Töpfer I, Fischer P (2016). Movement patterns and shelter choice of spiny-cheek crayfish (*Orconectes limosus*) in a large lake's littoral zone. **Aquatic Invasions** 11: 55–65

18 **Hirsch PE**, Eckmann R (2015). Individual identification of Eurasian perch *Perca fluviatilis* by means of their stripe patterns. **Limnologica** 54: 1-4.

17 **Hirsch PE**, Schillinger S, Weigt H, Burkhardt-Holm P (2014). A hydro-economic model for water level fluctuations: combining limnology with economics for sustainable development of hydro-power. **PLOS ONE** 9: e114889

16 Kalchhauser I, Mutzner P, **Hirsch PE**, and Burkhardt-Holm P (2013). Arrival of round goby *Neogobius melanostomus* (Pallas, 1814) and bighead goby *Ponticola kessleri* (Günther, 1861) in the High Rhine (Switzerland). **Aquatic Invasions / Bio Invasion Records** 2:79–83

15 **Hirsch PE**, Cayon D, Svanbäck R (2014). Plastic responses of a sessile prey to multiple predators: A field and experimental study. **PLOS ONE** 9: e115192

14 Bolnick D, Snowberg L, **Hirsch PE**, Lauber CL, Knight R, Org E, Parks B, Lusis AJ, Caporaso JG, Svanbäck R (2014). Individual diet has sex-dependent effects on vertebrate gut microbiota. **Nature Communications** 5:4500

13 Bolnick D, Snowberg L, **Hirsch PE**, Lauber CL, Knight R, Caporaso JG, Svanbäck R (2014). Individuals' diet diversity influences gut microbial diversity in two freshwater

## Philipp E Hirsch – List of Publications

12 fish (threespine stickleback and Eurasian perch). **Ecology Letters** 17:979–987

12 **Hirsch PE**, Behrmann-Godel J, Oppelt C, Eckmann R (2013). Phenotypic and genetic divergence within a single whitefish form – detecting the potential for future divergence. **Evolutionary Applications** 6:1119-1132

11 **Hirsch PE**, Eklöv P, Svanbäck R (2013). Indirect trophic interactions with an invasive species affect phenotypic divergence in a top consumer. **Oecologia** 172:245-252

10 Bartels P, **Hirsch PE**, Svanbäck R, Eklöv P (2012). Water transparency drives intra-population divergence in Eurasian perch (*Perca fluviatilis*). **PLoS ONE** 7: e43641

9 **Hirsch PE** (2010). Freshwater crayfish invasions: former crayfish invader Galician crayfish hands title invasive over to new invader spiny-cheek crayfish. **Biological Invasions** 11:515–521

8 **Hirsch PE**, Fischer P (2008). Interactions between native juvenile burbot (*Lota lota* L.) and the invasive spiny- cheek crayfish (*Orconectes limosus* Rafinesque) in a large European lake. **Canadian Journal of Fisheries and Aquatic Sciences** 65:2636-2643

7 **Hirsch PE**, Nechwatal J, Fischer P (2008). A previously undescribed set of *Saprolegnia* spp. in the invasive spiny-cheek crayfish (*Orconectes limosus*, Rafinesque). **Fundamental and Applied Limnology** 172:1-5

## Books

6 Pietsch C and **Hirsch PE** (editors) (2015). Biology and Ecology of Carp, 394 pages; Publisher: Taylor and Francis, CRC Press; 1 edition

## Monographs

5 **Hirsch PE** (2011). Phenotypic processes triggered by biological invasions, 156 pp, Acta Universitae Upsaliensis, PhD thesis, **Uppsala University**

4 **Hirsch PE** (2006). Interactions between the neozoan spiny-cheek crayfish and the native burbot in Lake Constance's littoral zone [in German], 120 pp, Master's thesis, **University of Freiburg**

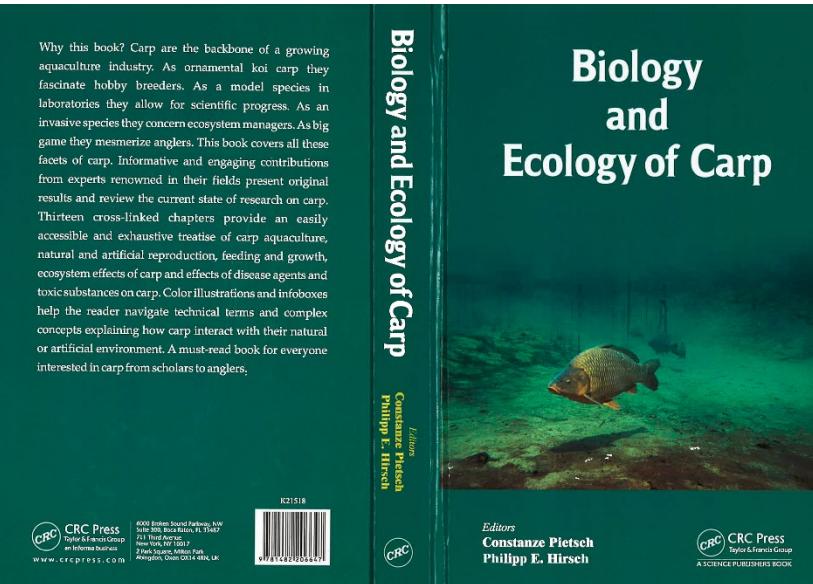
## Non-peer reviewed articles (selection)

3 **Hirsch PE**, Wasserstandsschwankungen verhindern das Wachstum bodenlebender Algen in Stauseen – eine Herausforderung für den nachhaltigen Ausbau der Wasserkraft (2019). **Regio Basiliensis** 60:2

2 Burkhardt-Holm P, Kalchhauser I, **Hirsch PE** (2014). Schwarzmeergrundel und Co. - Fremde Fische in Flüssen und Seen. **Biologie Unserer Zeit** 44(6): 392-399

1 **Hirsch PE** (2014). Die Wiederentdeckung der Fischvielfalt. **UniNova** 123:40-4

## Cover publications



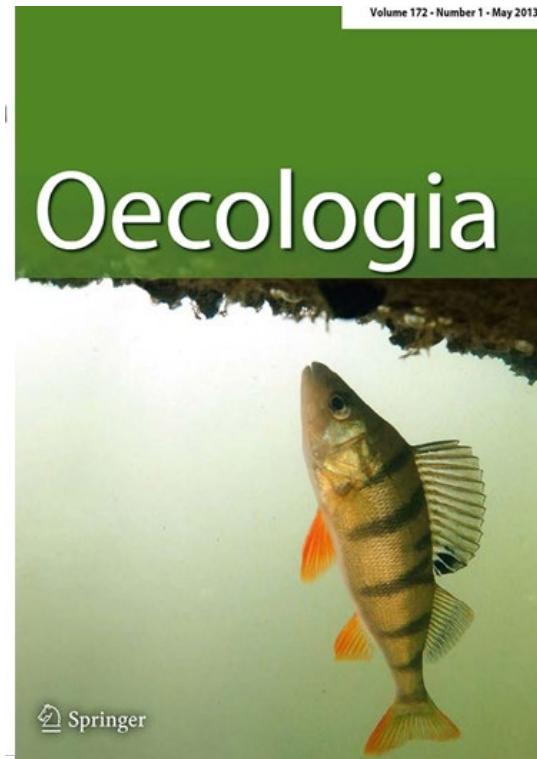
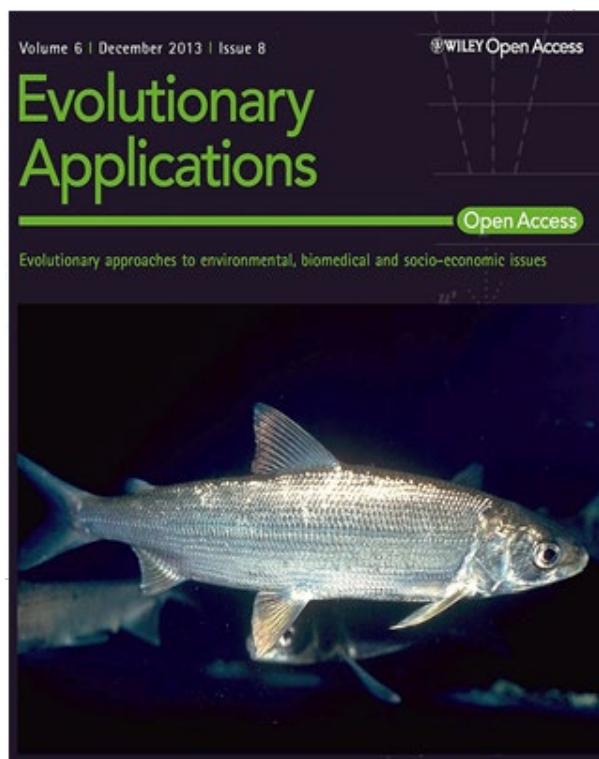
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## Conference contributions (selection)

12 “Species-specific migration barriers - shifting priorities?” Fish Passage 2020 – International Conference on River Connectivity. Lissabon, Portugal, 03/07/2020 (abstract accepted for talk but conference cancelled due to Covid-19)

11 Trophic niches change with invasion stage in the round goby, The Goby Meeting, Chioggia, Italy, 03/08/2018

10 Combining ecological and economic benchmarks towards a sustainable development of hydropower (poster presentation), Societas Internationalis Limnologia, DGL, SIL Austria meeting Vienna, Austria, 09/28/2016

9 A tough egg to crack – invasive goby eggs on recreational boats as vectors and possible management strategies (oral presentation), Nordic Goby Meeting, Umeå, Sweden, 02/12/2015

8 Water-level fluctuations and habitat mismatch affect phenotypes of *perc* (*Perca fluviatilis*) (oral presentation) Ecology of Fish in Lakes and Reservoirs, Budweis, Czech Republic, 09/10/2014

7 Phenotypic divergence within a single whitefish species – a potential for re-divergence? (oral presentation). Applied Evolutionary Biology Symposium, EWAG Zürich, Switzerland, 11/05/2012

6 Morphological responses against fish and crayfish explain phenotypic divergence in invasive zebra mussels (oral presentation) Annual Oikos meeting, Tjärnö, Sweden, 02/08/2011

4 The history of invasive freshwater crayfish in Lake Constance and their impact on the ecosystem (oral presentation). International Symposium on the Role of Littoral Processes in Lake Ecology, Konstanz, Germany, 01/29/2010

3 Indirect trophic interactions with an invasive species affect phenotypic divergence in a top consumer (oral presentation) Conference on Evolutionary Ecology of Fishes: Diversification, Adaptation and Speciation, Berlin, Germany, 11/05/2009

2 Indirect trophic interactions with an invasive species affect phenotypic divergence in a top consumer (poster presentation) Summit of the European Evolutionary Biology Society Turin, Italy, 08/15/2009

1 Interactions between the neozoan spiny-cheek crayfish and the native burbot in a large lake's littoral zone. Annual summit of the German Limnological Society, Karlsruhe, Germany, 09/21/2006

## Invited presentations and workshop moderations

10 Unauthorized entry prohibited! Research towards species-specific migration barriers to stop the upstream dispersal of invasive gobies. in FishBase Symposium, Stockholm, Sweden, 10/03/2019

9 Invasive fish species in the River Rhine – ecological and socio-economic effects and solutions. Guest-lecture, Knowledge and technology transfer event SERIOR Graduate Academy, University Koblenz-Landau, Germany, 03/22/2018

8 Movin' on up! The upstream-invasion of a small fish in the River Rhine brings insights into personality-dependent and human-assisted dispersal. Guest-lecture, Limnological institute, University of Constance, Germany, 02/07/2015

7 Inter-disciplinary management options for round goby invasions – integrating stakeholders and scientists' priorities into a transdisciplinary management, Invited lecture and transdisciplinary workshop contribution, Linné University, Kalmar, Sweden 06/12/2016

6 Incorporating personality in modelling fish dispersal of in-stream barriers. Invitation for guest lecture from Christer Brönmark, Aquatic Ecology, University of Lund, Sweden, 06/01/2016

5 Invasive round goby in Switzerland – current threats and management approaches. Guest-lecture Swedish Board of Fisheries, Drottningholm, Sweden, 10/19/2015

*Philippe E Hirsch – List of Publications*

- 4 Water level fluctuations in reservoirs – assessing patterns with models and effects with experiments. Invited speaker SIAM Seminar Series, EAWAG. Dübendorf, Switzerland, 01/13/2015
- 3 Ecological effects of hydropower induced water level fluctuations. Invited speaker for NINA HydroBalance-Symposium NINA, Norwegian Institute for Nature Research, Trondheim, Norway, 05/11/2014
- 2 Communicating science with and for society. Invited moderation of half-day workshop. Fresh Blood for Freshwaters - SIL/Symposium of the Austrian Limnological Society, Lunz, Austria, 02/22/2014
- 1 Two predators and one invasive prey – interactions between zebra mussels, crayfish, and roach. Guest-lecture, Swedish Board of Fisheries, Drottningholm, Sweden, 01/18/2011