

## Curriculum Vitae of Dr. Simone D. Langhans

### PERSONAL INFORMATION

Family name, First names: **Langhans, Simone Daniela**

Date of birth: **18 September 1976**

Nationality: **Swiss**

My work profile: [https://www.bc3research.org/index.php?option=com\\_researcher&task=view&rese=133&Itemid=345](https://www.bc3research.org/index.php?option=com_researcher&task=view&rese=133&Itemid=345)

My current project:

[https://www.bc3research.org/projects/sabercultural\\_eu.html](https://www.bc3research.org/projects/sabercultural_eu.html)

Find me on Twitter @sdlanghans: <https://twitter.com/sdlanghans>



### RESEARCH STATEMENT

I am a freshwater ecologist with interests, experience, and great enthusiasm in aquatic ecology, river restoration, decision support theory and conservation planning. In my research I combine these topics to, often in multi-disciplinary teams, investigate alternative ways of solving complex environmental decision problems with a focus on freshwater management.

### LANGUAGES

Swiss German (native), German (fluent), English (fluent), French (good), Italian (good), Spanish (basic)

### EDUCATION

24/05/2007 **Doctor of Sciences** ETH Zurich (Dr. Sc. ETH Zurich)  
01/11/2002 – 31/12/2006 **PhD student**, Department of Aquatic Ecology, Eawag; Swiss Federal Institute of Aquatic Science and Technology and ETH: Swiss Federal Institute of Technology Zurich, Switzerland  
18/12/2002 **Didactic certificate**  
01/10/2000 – 30/09/2002 **Master of Advanced Studies** in Secondary and Higher Education, ETH, Switzerland  
15/11/2000 **Diploma of Natural Sciences** ETH Zurich (Dipl. Natw. ETH Zurich), with distinction  
01/10/1996 – 30/09/2000 **Studies in Biology**, ETH Zurich, Switzerland including diploma thesis at the Department of Aquatic Ecology, Eawag, Switzerland

### CURRENT POSITION

01/01/2018 – 31/12/2020 **Marie Skłodowska-Curie fellow**, University of Otago, Dunedin, New Zealand (2018-2019) and BC3-Basque Centre for Climate Change, Bilbao, Spain (2020)

### PREVIOUS POSITIONS

01/11/2015 – 31/10/2017 **Postdoctoral fellow**, Department of Ecosystem Research, IGB, Berlin, Germany  
*Cultural values for European freshwater management: learning from local societies; prioritizing future ecosystem service delivery and biodiversity protection across different aquatic realms*  
01/10/2013 – 31/10/2015 **Research fellow** supported by the Alexander von Humboldt Foundation, IGB, Department of Biology and Ecology of Fishes; Hosts: Drs. C. Wolter, J. Gessner  
*Cost-effective river restoration planning for the recovery of priority fish species; validity of simplifications in multi-criteria decision analysis (MCDA) for river restoration (with Dr. J. Lienert, Eawag, Switzerland); biases in conservation research (with Dr. K. Wilson, University of Queensland, Australia); threat and global distribution patterns of freshwater megafauna (with Dr. S. Jähnig, IGB)*  
01/10/2012 – 30/09/2013 **Visiting postdoctoral fellow** supported and hosted by IGB, Department of Biology and Ecology of Fishes; Host: Dr. C. Wolter  
*Writing grant proposals: initiating a project on cost-effective restoration planning for sturgeon spawning habitat along the Havel-Spree Rivers (Germany); collaboration with Prof. P. Reichert, Drs. N. Schuwirth and J. Lienert on using MCDA for river assessment and management*  
01/08/2011 – 31/07/2012 **Visiting postdoctoral fellow** supported by the Swiss National Science Foundation, Australian Rivers Institute, Griffith University and University of Queensland, Australia; Hosts: Profs. S.E. Bunn, H.P. Possingham, Drs. S. Linke, V.

Hermoso

*Systematic and cost-effective river restoration planning in Switzerland using the conservation planning software Marxan*

01/10/2009 – 30/04/2011 **Postdoctoral fellow**, Department of System Analysis, Integrated Assessment and Modelling, Eawag, Switzerland; Supervisor: Prof. P. Reichert  
*Developing a framework for ecological stream assessment applying MCDA*

**CAREER BREAKS IN RESEARCH:** *After my PhD, I was interested in using my knowledge in the applied sector and joined the Swiss Federal Office for the Environment (FOEN). However, after being challenged finding compromise solutions for indicator aggregation with representatives from the different cantonal water authorities, I resumed research (supported by a grant from Eawag) in the field of MCDA to find solutions to these and various other issues in environmental decision making. Breaks in research were the following:*

01/10/2007 – 30/09/2009 **Project manager**, FOEN and Eawag, Switzerland  
*Coordination of the development and implementation of ecological river assessment protocols in Swiss streams across all Swiss cantons; co-development of the macroinvertebrate, nutrient and synthesis assessment protocols*  
01/01/2007 – 30/09/2007 **Scientific manager**, Eawag, Switzerland  
*Organisation of the International Water Management Forum, Ittingen, Switzerland*

### SHORT-TERM STAGES AT FOREIGN RESEARCH INSTITUTES

01/01/2016 – 01/03/2016 **Visiting researcher**, University of Otago, New Zealand; Hosts: Dr. M. Schallenberg and Dr. A. Hicks (Hawkes Bay Regional Council) (2 months)  
*Preparing interviews/workshops to be held with local Māori and stakeholder groups in Hawkes' Bay to identify different parameters needed for a decision support framework for managing Whakaki Lake based on the principles of MCDA; preparing manuscript on how to use MCDA for freshwater management in New Zealand*  
01/01/2015 – 31/03/2015 **Visiting researcher**, University of Otago, New Zealand; Host: Dr. M. Schallenberg (3 months)  
*Developing a functional link model of ecological players in Whakaki Lake as a basis for future Bayesian Network analysis; identifying ecological values from local Māori for the lake based on principles of MCDA*  
01/02/2014 – 30/04/2014 **Visiting researcher**, Australian Rivers Institute, Griffith University, Australia; Host: Dr. V. Hermoso (3 months)  
*Cost-effective restoration planning for eleven priority species along the Havel-Spree Rivers (Germany); collaboration with Drs. R. Rolls (Australian Rivers Institute) and C. Leigh (Irstea, France) on how to better acknowledge reviewers*

### APPOINTMENTS, FELLOWSHIPS, GRANTS, AWARDS

2019 - ERC Consolidator grant. **1.8 Mio Euro (5 years)**. Outcome pending.  
2018 - Junior research group grant (Leibniz best minds). "Global Freshwater Biodiversity and Conservation (GLOWABIO)". Collaboration with Dr. Sami Domisch (PI). **1.5 Mio Euro (5 years)**.  
- Selected as a **member of Catchments Otago**. <http://www.catchmentsotago.org/researchers-1/>.  
- Selected as a member of **SMIRES** (Science and Management of Intermittent Rivers & Ephemeral Streams). <http://www.smires.eu/network/>.  
2017 - Selected as a **member of the Freshwater Biodiversity Observation Network**. <http://geobon.org/freshwater-biodiversity-observation-network-fwbon-endorsed-by-geobon-as-a-thematic-bon/>.  
- **Observer** at the 9<sup>th</sup> Meeting of the **Water Governance Initiative, OECD, Paris** <http://www.oecd.org/cfe/regional-policy/9thmeetingoftheoecdwatergovernanceinitiative.htm>.  
- German Federal Ministry of Education and Research-project grant: "Mining geotagged data to reveal the links between ecological status and recreational use of freshwater ecosystems". Co-PI. **30 000 Euro (9 months)**.  
- Marie Skłodowska-Curie individual, global fellowship: "Safeguarding Biodiversity and Ecosystem Services by integrating CULTURAL values in freshwater management: learning from Māori". Grant number 748625; **233 000 Euro (36 months)**.  
2016 - Selected for participating in the **Leibniz-Mentoring programme for highly-qualified women post-docs** to support them on the path to leadership positions and professorships. <https://www.leibniz-gemeinschaft.de/karriere/wissenschaftlicher-nachwuchs/leibniz-mentoring/mentees-20162017/>.  
- Interviewed for the open position as the **Head of Section for Freshwater Ecology** at the NIWA, Oslo,

Norway.

- Selected for participating in an **international collaboration workshop for prospective young researchers** on the topic: “*Perspectives on Water Management in Urban Regions*”. Academy of Sciences Leopoldina in Essen, Germany.
- Travel support for participating at the SCBO conference, Brisbane, Australia. **660 AUD**.
- Research support from the Hawke’s Bay Region Council, New Zealand: „*Facilitating a collaborative management of Lake Whakaki with a focus on cultural Maori-values using Multi-Criteria Decision Analysis techniques*”. **6 000 NZD**.
- 2015 - European Commission-grant (Horizon 2020): “*Knowledge, Assessment, and Management for AQUatic Biodiversity and Ecosystem Services aCROSS EU policies (AQUACROSS)*.” Deputy lead of WP7. Grant number 642317. **6 343 614 Euro (48 months)**.
- Envirolink Medium advice grant: “*A transparent decision support framework to optimise opening regimes of intermittently closed and open lakes and lagoons (ICOLLS)*”. With Dr. M. Schallenberg. **19 200 NZD**.
- 2013 - Alexander von Humboldt-fellowship for experienced researchers: “*Money for rivers: a new framework to optimize rehabilitation funds*”. **71 100 Euro (18 months)**.
- Extension of the IGB postdoc-fellowship: “*Improving systematic river rehabilitation planning for Europe under multi-pressure conditions*”. **11 000 Euro (6 months)**.
- 2012 - IGB postdoc-fellowship: “*Improving systematic river rehabilitation planning for Europe under multi-pressure conditions*”. **11 000 Euro (6 months)**.
- 2011 - Swiss National Science Foundation-fellowship for advanced researchers: “*From ecological river assessment to prioritization in river management: a decision-analytic river network-based approach*”. **52 000 CHF (12 months)**.
- Travel grant for young researchers from the Swiss Academy of Hydrology and Limnology. **800 CHF**
- 2010 - Eawag Discretionary Fund: “*New concepts in ecological river assessment*”. With Prof. P. Reichert. **140 000 CHF (24 months)**.
- 2006 - Commission for Oceanography and Limnology, Swiss Academy of Sciences, grant for young scientists. **1 000 CHF**.
- 2005 - Student endowment award from the North American Benthological Society. **2 000 USD**.
- **Best poster** at the Symposium for European Freshwater Sciences, Krakow, Poland.
- Student travel grant for participating in conferences received from ETHZ. **1 500 CHF**.
- 2003/4 - Two ETH student travel grants for participating in two conferences (à 2000 CHF). **4 000 CHF**.

**PEER-REVIEWED PUBLICATIONS:** *all of my publications are listed here*

<http://scholar.google.com/citations?user=yKkZo6YAAAAJ>

[https://www.researchgate.net/profile/Simone\\_Langhans/publications](https://www.researchgate.net/profile/Simone_Langhans/publications)

1. **Langhans SD**, Jähnig SC, Lago M, Schmidt-Kloiber A, Hein T (2019) Editorial: The potential of ecosystem-based management to integrate biodiversity conservation and ecosystem service provision in aquatic ecosystems. *Science of the Total Environment* 672:1017-1020. doi:10.1016/j.scitotenv.2019.04.025.
2. **Langhans SD**, Domisch S, Balbi S, Delacámara G, Gomez CM, Hermoso V, Martínez-López J, Schuwirth N, Vermeiren P, Villa F, Jähnig SC (2019) Combining eight research areas to foster the uptake of ecosystem-based management in fresh waters. *Aquatic Conservation: Marine and Freshwater Ecosystems* 1-19. doi: 10.1002/aqc.3012.
3. Shumilova O, Tockner K, Righetti M, **Langhans SD**, Lucía A, Zarfl C (2019) Floating organic matter: A key component controlling the ecological and geomorphic integrity of rivers. *Aquatic Sciences* 81:25. doi: 10.1007/s00027-019-0619-2.
4. Domisch S, Friedrichs M, Hein T, Pletterbauer F, Wetzig A, Jähnig SC, **Langhans SD** (2019) Spatially-explicit species distribution models: a missed opportunity in conservation planning? *Diversity and Distributions*. doi:10.1111/ddi.12981.
5. Shumilova, O, Zak D, Detry T, von Schiller D, Corti R, Foulquier A, Obrador B, Tockner K, Altermatt F, Arce MI, Arnon S, Banas D, Banegas-Medina A, Beller E, Blanchette M, Blanco-Libreros JF, Blessing J, Boëchat I, Boersma K, Bogan MT, Bonada N, Bond N, Brintrup K, Bruder A, Burrows R, Cancellario T, Carlson SM, Cauvy-Fraunié S, Cid N, Danger M, de Freitas B, Terra B, De Girolamo AM, del Campo R, Dyer F, Elosegí A, Emile F, Febria C, Figueroa R, Four B, Gessner MO, Gnohossou P, Cerezo RG, Gómez-Gener L, Graça MAS, Guareschi S, Gücker B, Hwan JL, Kubheka S, **Langhans SD**, Leigh C, Little C, Lorenz S, Marshall J, McIntosh A, Mendoza-Lera C, Meyer EI, Miliša M, Mlambo MC, MMoleón M, Negus P, Niyogi D, Papatheodoulou A, Pardo I, Paril P, Pešić V, Rodríguez-Lozano P, Rolls RR, Maria Sánchez-Montoya M, Savić A, Steward A,

Stubbington R, Taleb A, Vander Vorste R, Waltham N, Zoppini A, Zarfl C (2019) Simulating rewetting events in intermittent rivers and ephemeral streams: a global analysis of leached nutrients and organic matter. *Global Change Biology*. doi:10.1111/gcb.14537

6. Domisch, S. Jähnig SC, Kakouei K, **Langhans SD**, Martínez-Lopez J, Bagstad KJ, Magrach A, Balbi S, Villa F, Funk A, Hein T, Borgwardt F, Hermoso V (2019) Social equity shapes zone selection: Balancing aquatic biodiversity conservation and ecosystem services delivery in the transboundary Danube River Basin. *Science of the Total Environment* 656: 797-807.
7. Barbosa A, Martín B, Hermoso V, Arévalo-Torres J, Barbière J, Martínez-López J, Domisch S, **Langhans SD**, Balbi S, Villa F, Delacámara G, Teixeira H, Nogueira AJA, Lillebø AI, Gil-Jiménez Y, Iglesias-Campos A (2019) Cost-effective restoration and conservation planning in Green and Blue Infrastructure designs. A case study on the Intercontinental Biosphere Reserve of the Mediterranean: Andalusia (Spain) – Morocco. *Science of the Total Environment* 652:1463-1473.
8. Friedrichs M, Hermoso V, Bremerich V, **Langhans SD** (2018) Evaluation of habitat protection under the European Natura 2000 conservation network – The example of Germany. *PlosOne*. 13(12):e0208264. doi:10.1371/journal.pone.0208264.
9. **Langhans SD**, Jähnig SC, Schallenberg M (2018) On the use of multicriteria decision analysis to formally integrate community values into ecosystem-based freshwater management. *River Research and Applications*. doi:10.1002/rra.3388
10. He F, Bremerich V, Zarfl C, Geldmann J, **Langhans SD**, David JNW, Darwall W, Tockner K, Jähnig SC (2018) Freshwater megafauna diversity: Patterns, status and threats. *Diversity and Distributions*. doi: 10.1111/ddi.12780.
11. Detry T, Foulquier A, Corti R, von Schiller D, Tockner K, Mendoza-Lera C, Clément JC, Gessner MO, Moleón M, Stubbington R, Gücker B, Albariño R, Allen DC, Altermatt F, Arce MI, Arnon S, Banas D, Banegas-Medina A, Beller E, Blanchette ML, Blanco-Libreros JF, Blessing JJ, Boëchat IG, Boersma KS, Bogan MT, Bonada N, Bond NR, Brintrup Barria KC, Bruder A, Burrows RM, Cancellario T, Canhoto C, Carlson SM, Cauvy-Fraunié S, Cid N, Danger M, de Freitas Terra B, De Girolamo AM, de La Barra E, del Campo R, Diaz-Villanueva VD, Dyer F, Elosegí A, Faye E, Febria C, Four B, Gafny S, Ghate SD, Gómez R, Gómez-Gener L, Graça MAS, Guareschi S, Hoppeler F, Hwan JL, Jones JI, Kubheka S, Laini A, **Langhans SD**, Leigh C, Little CJ, Lorenz S, Marshall JC, Martín E, McIntosh AR, Meyer EI, Milisa M, Mlambo MC, Morais M, Moya N, Negus PM, Niyogi DK, Papatheodoulou A, Pardo I, Paril P, Pauls SU, Pesic V, Polásek M, Robinson ST, Rodríguez-Lozano P, Rolls RJ, Sánchez-Montoya MM, Savić A, Shumilova O, Sridhar KR, Steward AL, Storey R, Taleb A, Uzan A, Vander Vorste R, Waltham NJ, Woelfle-Erskine C, Zak D, Zarfl C, Zoppini A (2018) A global analysis of terrestrial plant litter dynamics in non-perennial waterways. *Nature Geoscience*. doi:10.1038/s41561-018-0134-4.
12. Venohr M, **Langhans SD**, Hölker F, Arlinghaus R, Mitchell L, Wolter C (2018) The underestimated dynamics and impacts of water-based recreational activities on freshwater ecosystems. *Environmental Reviews* 26:199-213. doi: 10.1139/er-2017-0024.
13. Carrizo SF, Jähnig S, Bremerich V, Freyhof J, Harrison I, He F, **Langhans SD**, Tockner K, Zarfl C, Darwall W (2017) Freshwater megafauna: flagships for freshwater biodiversity under threat. *BioScience* 67:919-927. doi: 10.1093/biosci/bix099.
14. Bruder A, Tonolla D, Schweizer S, Vollenweider S, **Langhans SD**, Wüest A (2016). A conceptual framework for hydropeaking mitigation. *Science of the Total Environment* 568:1204-12. doi: 10.1016/j.scitotenv.2016.05.032.
15. **Langhans SD**, Hermoso V, Gessner J, Wolter C (2016) Coupling systematic planning and expert judgement enhances the efficiency of river restoration. *Science of the Total Environment* 560-561: 266-273.
16. **Langhans SD**, Lienert J (2016) Four common simplifications of Multi-Criteria-Decision Analysis do not hold for river rehabilitation. *PlosOne* 11(3):e0150695.
17. Wilson KA, Auerbach NA, Sam K, Magini AG, Moss AstL, **Langhans SD**, Budiharta S, Terzano D, Meijaard E (2016) Conservation research is not happening where it is most needed. *Plos Biology* 14(3): e1002413.
18. Reichert P, **Langhans SD**, Lienert J, Schuwirth N (2015) The conceptual foundation of environmental decision support. *Journal of Environmental Management* 154: 316-332.
19. **Langhans SD**, Tockner K (2014) Edge effects are important in supporting beetle biodiversity in a gravel-bed river floodplain. *PlosOne* 9(12): e114415. DOI:10.1371/journal.pone.0114415.
20. Rolls R, Leigh C, **Langhans SD** (2014) Improving science through improved acknowledgement of reviewers. *Conservation Biology (Editorial)*. DOI: 10.1111/cobi.12418.
21. **Langhans SD**, Tockner K (2014) Is the unsaturated sediment a neglected habitat for riparian arthropods? Evidence from a large gravel-bed river. *Global Ecology & Conservation* 2: 129-137.

22. **Langhans SD**, Schuwirth N, Reichert P (2014) The method matters: a guide for indicator aggregation in ecological assessments. *Ecological Indicators* 45: 494-507.
23. **Langhans SD**, Hermoso V, Linke S, Bunn SE, Possingham HP (2014) Cost-effective river rehabilitation planning: optimizing for morphological benefits at large spatial scales. *Journal of Environmental Management* 132:296-303.
24. **Langhans SD**, Lienert J, Reichert P (2013) How to make river assessments comparable: a demonstration for hydromorphology. *Ecological Indicators* 32:264-275.
25. Reichert P, Schuwirth N, **Langhans SD** (2013) Constructing, evaluating and visualizing value and utility functions for decision support. *Environmental Modelling & Software* 46:283-291.
26. **Langhans SD**, Richard U, Rueegg J, Uehlinger U, Edwards P, Doering M, Tockner K (2013) Environmental heterogeneity affects input, storage, and transformation of coarse particulate organic matter in a floodplain mosaic. *Aquatic Sciences* 75:335-348.
27. **Langhans SD**, Tiegs SD, Gessner MO, Tockner K (2008) Leaf decomposition heterogeneity across a riverine floodplain mosaic. *Aquatic Sciences* 70:337-346.
28. Tiegs SD, **Langhans SD**, Tockner K, Gessner MO (2007) Cotton strips as a leaf surrogate to measure decomposition in river floodplain habitats. *Journal of the North American Benthological Society* 26:70-77.
29. **Langhans SD**, Tiegs SD, Uehlinger U, Tockner K (2006) Environmental heterogeneity controls organic-matter dynamics in river-floodplain ecosystems. *Polish Journal of Ecology* 54:675-680.
30. **Langhans SD**, Tockner K (2006) The role of timing, duration, and frequency of inundation in controlling leaf litter decomposition in a river-floodplain ecosystem (Tagliamento, northeastern Italy). *Oecologia* 147:501-509.

#### BOOK CHAPTERS & THESES

- Steward AL, **Langhans SD**, Corti R, Detry T (2017) The biota of intermittent rivers and ephemeral streams - Terrestrial and semi-aquatic invertebrates. In: Detry T, Bonada N, Boulton A (eds), Intermittent River Ecology and Management, Elsevier. pp. 245-271.
- Langhans SD** (2006) Riverine floodplain heterogeneity as a controller of organic matter dynamics and terrestrial invertebrate distribution. PhD thesis, ETHZ, Switzerland.
- Langhans SD**, Tockner K (2005) Limnological characteristics of the Fiume Tagliamento. In: Tagliamento due sponde sul fiume - Guida storica e tecnica die un tratto del medio corso. Spilimbergo, Italy
- Langhans SD** (2002) Floating organic debris: Indicator of ecological integrity in an Italian floodplain (Tagliamento) (in German). Diploma thesis, ETHZ, Switzerland.

#### REPORTS, POLICY BRIEFS, PUBLICATIONS IN PRACTITIONERS' JOURNALS

- Domisch S, **Langhans SD**, Hermoso V, Jähnig SC, Martínez-López J, Balbi S, Villa F, Schuwirth N, Reichert P, Kuemmerlen M, Vermeiren P, Robinson L, Culhane F, Nogueira A, Teixeira H, Lillebo A, Funk A, Pletterbauer F, Trauner D, Hein T, Schlüter M, Martin R, Fryers Hellquist K, Delacámara G, Gómez CM, Piet G, van Hal R (2017) Guidance on methods and tools for the assessment of projected impacts of drivers of change on biodiversity, ecosystems functions and aquatic ecosystems service delivery; teaching modules for the individual modelling approaches: AQUACROSS Deliverable 7.1, European Union's Horizon 2020 Framework Programme for Research and Innovation Grant Agreement No. 642317.
- Berger V, Fan F, Gabel F, Galvão P, Gies M, Grabner D, **Langhans SD**, Machado A, Manzione R, Matta E, Andreu A, de Moraes M, Morihama A, Macedo-Moura P, de Paiva A, Periotto N, Porst G, Rigotto C, Roters B, Schulz S, Silva T, de Sousa M, Suhogusoff A, Wahnfried I, Wolf C (2017) How Do We Want to Live Tomorrow? Perspectives on Water Management in Urban Regions; German National Academy of Sciences Leopoldina, Brazilian Academy of Sciences, Centre for Water and Environmental Research at the University of Duisburg-Essen (Publishers); Halle/Saale, Rio de Janeiro, Essen.
- Langhans SD**, Gessner J, Wolter C (2017) Fließgewässer effizienter renaturieren: Neue Planungshilfe optimiert Kosten und Nutzen für Biodiversität. *Wasserwirtschaft (10)3: 151-156*.
- Nogueira A, Lillebo A, Teixeira H, Daam M, Robinson L, Culhane F, Delacámara G, Gómez CM, Arenas M, **Langhans SD**, Martínez-López J, Funk A, Reichert P, Schuwirth N, Vermeiren P, Mattheiß V (2016) Guidance on methods and tools for the assessment of causal flow indicators between biodiversity, ecosystem functions and ecosystem services in the aquatic environment. Deliverable 5.1. European Union's Horizon 2020 Framework Programme for Research and Innovation Grant Agreement No. 642317.
- Gómez CM, Gonzalo Delacámara, Jähnig SC, **Langhans SD**, Domisch S, Hermoso V, Piet GJ, Martínez-López J, Lago M, Boteler B, Rouillard J, Abhold K, Reichert P, Schuwirth N, Hein T, Pletterbauer F, Funk A, Nogueira A, Lillebo AI, Daam M, Teixeira H, Robinson L, Culhane F, Schlüter M, Martin R, Iglesias-Campos A, Barbosa AL, Arévalo-Torres J, O'Higgins T (2016) Developing the AQUACROSS Assessment

Framework. Deliverable 3.2. European Union's Horizon 2020 Framework Programme for Research and Innovation grant agreement No. 642317.

- Gómez CM, Delacámara G, Arévalo-Torres J, Barbière J, Barbosa AL, Boteler B, Culhane F, Daam M, Gosselin MP, Hein T, Iglesias-Campos A, Jähnig S, Lago M, **Langhans SD**, Martínez-López J, Nogueira A, Lillebo A, O'Higgins T, Piet G, Pletterbauer F, Pusch M, Reichert P, Robinson L, Rouillard J, Schlüter M (2016) The AQUACROSS Innovative Concept. Deliverable 3.1, European Union's Horizon 2020 Framework Programme for Research and Innovation grant agreement No. 642317.
- Schallenberg M, **Langhans SD** (2015). Collaborative Decision Support Framework for Managing Whakaki Lake. Phase 1: Ecological Information. Prepared for the Hawkes Bay Regional Council with funding from Envirolink grant 1577-HBRC213
- Langhans SD**, Reichert P (2011) Einbettung von Verfahren zur Fließgewässerbewertung in ein übergeordnetes Gewässermanagementkonzept. Vorschläge am Beispiel des Modulstufenkonzepts. *Wasser Energie Luft* 103(2): 139-148.
- Reichert P, Schuwirth N, **Langhans SD** (2011) MCWM – Ein Konzept für multikriterielle Entscheidungsunterstützung im Wassermanagement. *Wasser Energie Luft* 103(1): 139-148.
- Liechti et al (2010) Methoden zur Untersuchung und Beurteilung der Fließgewässer. Chemisch-physikalische Erhebungen, Nährstoffe. Umwelt-Vollzug Nr. 1005. Bundesamt für Umwelt, Bern.
- Stucki et al (2010) Methoden zur Untersuchung und Beurteilung der Fließgewässer. Makrozoobenthos Stufe F. Umwelt-Vollzug Nr. 1026. Bundesamt für Umwelt, Bern.
- Baumann P, **Langhans SD** (2010) Methoden zur Untersuchung und Beurteilung der Fließgewässer. Synthese der Beurteilungen auf Stufe F. Entwurf. Umwelt-Vollzug. Bundesamt für Umwelt, Bern.
- Weber C, Göggel W, **Langhans SD** (2008) Aufwertungen in Fließgewässern planen: Die Methode „Ökomorphologie Stufe S“. *Ingenieurbiologie* 3: 4-8.
- Langhans SD**, Weber C, Göggel W (2008) D'une méthode à l'autre vers une évaluation intégrale des cours d'eau. *Bulletin de l'ARPEA* 238: 5-11.
- Kunz Y, Pohl J, Langhans SD (2007) Uferbezogene Indikatoren - Neue Ansätze zur Fließgewässerbewertung. *Wasser Energie Luft* 99(1).
- Trottmann N, **Langhans SD**, Tockner K (2006) Schwemmgut als Ausbreitungsmedium. Das Innenleben eines unterschätzten Naturstoffs. *Wasser Energie Luft* 98(3): 207-213.
- Trottmann N, **Langhans SD**, Tockner K (2005) Schwemmgut, ein wichtiger Weg der Ausbreitung. *Natur und Mensch* 5: 8-11.
- Trottmann N, **Langhans SD**, Tockner K (2004) Schwemmgut als Ausbreitungsmedium – das Innenleben eines unterschätzten Naturstoffs. Eawag Jahresbericht.
- Tockner K, **Langhans SD** (2003) Die ökologische Bedeutung des Schwemmgutes. *Wasser Energie Luft* 95(11/12): 353- 354.
- Langhans SD** (2002) Floating organic debris: Indicator of ecological integrity in an Italian floodplain (Tagliamento) (in German). Diploma thesis, ETHZ, Switzerland.

#### R-PACKAGES

'ecoval' (September 2018). <https://cran.r-project.org/web/packages/ecoval/ecoval.pdf>

#### INVITED PRESENTATIONS & WORKSHOPS

- 2018 - *Multi-criteria decision analysis for freshwater management in NZ*. Workshop organization and chair. NZFSS conference, Nelson, NZ.
- 2017 - *Potential uses of optimization techniques for the German-wide river restoration programme "Blaues Band"*. Research-input given during a stakeholder workshop at the Federal Institute of Hydrology, Koblenz, Germany.
- *Ecological consequences of recreational use in freshwater ecosystems: the knowns and unknowns*. Presentation given at the first AQUATAG-Stakeholder Workshop, Berlin, Germany.
  - *Optimising river restoration planning*. Lunch presentation and discussion with Polish partners at Deutsche Umwelthilfe e.V., Berlin, Germany.
  - *Restoring rivers more efficiently – a new planning tool*. Research input given at a political lunch debate on the German-wide river restoration programme "Blaues Band". Open to the public, Berlin, Germany.
  - *Optimising biodiversity conservation and ecosystem service delivery using Marxan with Zones*. Presentation given at the AQUACROSS Assessment Framework and Case Studies-meeting, Brussels, Belgium.

- 2016 - *Community driven decision making: Multi-Criteria Decision Making for freshwater management*. Public presentation given at the Basque Centre for Climate Change, Bilbao, Spain, during the AQUACROSS WP7 development meeting.
- *Systematic, cost-effective restoration planning – or – How I tweaked Marxan for restoration planning*. Public presentation given at the Basque Centre for Climate Change, Bilbao, Spain, during the AQUACROSS WP7 development meeting.
- Participation in the AQUACROSS joint WP4/5 joint coordination workshop, Aveiro, Portugal.
- Leading and facilitating the freshwater break-out group with international freshwater experts, 1<sup>st</sup> AQUACROSS-Forum, Alcalá, Spain.
- Presentation of WP7-progress and outcomes at the AQUACROSS-consortium meeting, Alcalá, Spain.
- Participation in the AQUACROSS WP3 Coordination workshop, Berlin, Germany
- 2015 - Participation in the AQUACROSS kick-off workshop, Brussels, Belgium
- *Community-driven decision making: A way forward for the management of Lake Wanaka?* Presentation given for the University of the 3rd Age, Wanaka, New Zealand.
- *Community-driven decision making: A way forward for Lake Whakaki?* Presentation and workshop facilitation at a Hui in Hawkes Bay, New Zealand.
- *Multi-Criteria Decision Analysis (MCDA) in River Management*. Presentation given at the Freshwater group seminar series, University of Otago, Dunedin, New Zealand (talk).
- 2014 - *What is right for me? Pros and cons of an academic vs. a non-academic career*. Input at the IGB PhD-workshop, Frauensee, Germany.
- *Money for rivers: the interplay of actions, costs and ecological benefits in optimising river rehabilitation plans*. Presentation given at the University of Otago, Dunedin, New Zealand.
- 2013 - *Let's make a plan: Linking costs and ecological benefits to optimize river management*. Presentation of my research at the Researchers Forum Smart Cities and Urban Technologies, InnoZ, Berlin, Germany.
- *Optimizing river rehabilitation planning: Heidi meets Crocodile Dundee*. Presentation given at the IGB Seminar Series, Berlin, Germany.
- 2012 - *Local to national: the capacity for increasing the spatial scale of monitoring*. Presentation given during the ACEAS workshop on Challenges and future directions, Brisbane, Australia.
- 2011 - *Decision analysis meets river management. A new approach to ecological river assessment*. Aquatic biodiversity international conference, Sibiu, Romania (invited plenary, declined due to moving to Australia).
- *From riverine floodplain ecology to integrative river management - or - How I made it to Australia*. Presentation given at the Australian Rivers Institute Seminar Series, Brisbane, Australia.
- *Systematic planning for river rehabilitation: Heidi meets Crocodile Dundee*. Presentation given at the Annual Forum of the Australian Rivers Institute, Brisbane, Australia.
- *Systematic planning for river rehabilitation: Heidi meets Crocodile Dundee*. Presentation given at the Institute of Biogeography, Basel, Switzerland.
- 2010 - *A decision-theoretic approach to ecological stream assessment*. Presentation given at the IGB Seminar Series, Berlin, Germany.

#### COMMUNICATIONS AT CONFERENCES AND SEMINARS: during the last five years

- 2018 - *Eight research areas that could foster ecosystem-based management in fresh waters, if combined*. NZFSS, Nelson, New Zealand (talk).
- *Eight current research developments may benefit freshwater biodiversity through championing ecosystem-based management, if combined*. ESP Europe, San Sebastian, Spain (talk).
- *Eight current research developments may benefit freshwater biodiversity through championing ecosystem-based management, if combined*. Society for Conservation Biology 5<sup>th</sup> Oceania Congress, Wellington, New Zealand (talk).
- *Managing ecosystems for people and the environment: a watershed moment for New Zealand's freshwaters?* Lunch seminar, University of Otago (talk).
- 2017 - *Jointly accounting for biodiversity and ecosystem services for optimizing freshwater management: a projection & optimization framework*. Symposium for European Freshwater Science, Olomouc, Czech Republic (talk).
- 2016 - *Where have Europe's free flowing rivers gone? Restoring towards better connectivity*. Society for Conservation Biology 4<sup>th</sup> Oceania Congress, Brisbane, Australia (talk).
- 2015 - *The method matters: A guide for indicator aggregation in ecological assessments*. Symposium for European Freshwater Science, Geneva, Switzerland (talk).

- 2014 - *Money for rivers: the interplay of actions, costs and ecological benefits in optimising river rehabilitation plans*. Australian Rivers Institute seminar-series, Brisbane, Australia (talk).
- 2013 - *Identifying optimal rehabilitation areas in river systems: a framework adapted from conservation planning reveals collaboration benefits*. Symposium for European Freshwater Sciences, Münster, Germany (talk).
- *Identifying optimal rehabilitation areas in river systems: a framework adapted from conservation planning reveals collaboration benefits*. Society for Freshwater Science, Jacksonville FL, USA (talk).

#### SUPERVISION OF GRADUATE STUDENTS/ INTERNS AND HOSTING VISITING SCIENTISTS

##### Visiting scientists

- 2018 Dr. Stéfani Novoa (San Sebastián, Spain). Visiting scientist: "Use of remote sensing data for reconstructing the history of macroalgal blooms in the Blueskin Bay estuary". Nov – Dec 2018.

##### PhD students

- 2017-19 Martin Friedrichs (IGB and Free University, Berlin, Germany). PhD thesis: "Uncertainties in species distribution models: effects of spatial and temporal scales on future predictions".
- 2016-18 Fengzhi He (IGB and Free University, Berlin Germany). PhD thesis: "Biodiversity patterns and conservation of freshwater megafauna".

##### MSc students

- 2019 Marina Spindel (University of Poitiers, France). Erasmus Mundus exchange student: "Incorporating cultural values into the MCDA decision making process: integration or parallel processes?" Feb – Aug 2019 (forthcoming)
- 2017 Roland Wanke (IGB and Free University, Berlin, Germany). Master thesis: "Biological and ecological traits of freshwater megafauna. Data synthesis and analysis".
- 2016 Martin Friedrichs (IGB and Free University, Berlin, Germany). Master thesis: "Effectiveness of the conservation network Natura 2000 to protect Europe's habitat diversity".
- 2006 Janina Pohl (University of Karlsruhe). Master thesis: "Ecology of gravel bars".
- 2006 Yvonne Kunz (Eawag/ETHZ, Switzerland). Master thesis. Title: "Ecology of gravel bars".

##### BSc students

- 2010 Andrin Fink (Eawag/ETHZ, Switzerland). Bachelor thesis: "A decision-theoretic approach to chemical stream assessment".
- 2005 Erika Van Daalen (Eawag/ETHZ, Switzerland). Master thesis: "Geomorphology of braided rivers".

##### Interns and summer students

- 2018 Dominique Harrison (University of Otago, New Zealand). Summer student: "Blueskin Bay data search". Nov 2018 – Feb 2019.
- 2018-19 Marion Caduff (ETHZ, Switzerland). Internship: "Blueskin Bay community collaboration to develop a catchment management plan". Sep 2018 – Feb 2019.
- 2018 Ingrid Thyr (Williams College, Massachusetts, USA). Internship. *Trilogy of podcasts: A lake at a crossroads*. June – July 2018.
- 2015 Roland Wanke, (Free University, Berlin, Germany). Internship: "Freshwater cultural values".

#### TEACHING ACTIVITIES

- 2017 - "Biodiversity & Conservation Planning" within the MSc course "Evolution and Biodiversity I", Free University, Berlin
- Introduction to the MSc course "Biodiversity in selected ecosystems: Rivers in the secondary mountains", Free University, Berlin
- 2016 - "Water resources and water bodies in the Anthropocene" and "Conservation planning and prioritization" within the MSc course "Current topics in Freshwater Ecology", Free University, Berlin, Germany
- "River restoration: Basics and systematic planning" within the MSc course "Biodiversity in selected ecosystems: Rivers in the secondary mountains", Free University, Berlin
- "Conservation planning and prioritization" within the MSc course "Current topics in Freshwater Ecology", Free University, Berlin
- 2015 - "Conservation planning and prioritization" within the MSc course "Current topics in Freshwater Ecology", Free University, Berlin
- "River restoration/planning" within the course „Biologisches Vertiefungsmodul Zoologie“, Free University, Berlin

- 2014 - "Biodiversity & Conservation Planning" within the MSc course "Evolution and Biodiversity I", Free University, Berlin
- 2003-6 - Bachelor and master courses in applied-statistics, systematics and ecology of benthic invertebrates and field methods in stream ecology. Eawag and ETHZ, Switzerland
- 2000-2 - German teacher at H.B.S. Handels- und Bürofach-Schule Rapperswil, Switzerland

#### COMMUNITY ACTIVITY

- *Workshop organization and chair.* MCDA in freshwater management. NZFSS conference 2018, Nelson, NZ.
- *Guest editor.* Special Issue in Science of the Total Environment, 2018.
- *Scientific external reviewer.* 2017 joint Belmont Forum / BiodivERsA call for proposals on "Biodiversity Scenarios".
- *Reviewer for the following peer-reviewed journals:* Journal of Environmental Management, PeerJ, Ecological Applications, PlosOne, Oecologia, Ecosystems, Marine & Freshwater Research, Hydrobiologia, Archiv für Hydrobiologie, River Systems, Aquatic Sciences, Canadian Journal of Fisheries and Aquatic Sciences, European Journal of Entomology, Riparian Ecology and Conservation, International Review of Hydrobiology, Ecological Indicators, Landscape and Ecological Engineering, Journal of Insect Conservation, American Water Resource Association, Aquatic Conservation: Marine and Freshwater Ecosystems, Inland Waters, Water and Environment Journal
- *Conference organisation:* Alter-Net conference 2017; Nature and society: synergies, conflicts, trade-offs; 2-5 May, Ghent, Belgium

#### MEDIA OUTREACH

- News report about the Friedrichs et al. PlosOne (2018) paper by the German Federal Ministry of Education and Research: [http://www.research-in-germany.org/news/2019/3/2019-03-15\\_Protected\\_habitats](http://www.research-in-germany.org/news/2019/3/2019-03-15_Protected_habitats)
- *Collaborative effort for freshwater management plan.* Article on the Wanaka App by Maddy Harker (Feb 15, 2019)
- *Freshwater's cultural value to be assessed.* Article in The News by Simon Henderson (Feb 7, 2019)
- A Lake at a Crossroads: podcast series on lake Wanaka: <https://soundcloud.com/ingrid-thyr>
- My research featured in the annual IGB Report (in German; p. 46): [http://www.igb-berlin.de/sites/default/files/media-files/download-files/IGB\\_Jahresbericht2015\\_DE\\_WEB\\_0.pdf](http://www.igb-berlin.de/sites/default/files/media-files/download-files/IGB_Jahresbericht2015_DE_WEB_0.pdf)
- Podcast production from the National Swiss Radio and TV station discussing our article published in PLOS Biology (2016): <http://www.srf.ch/sendungen/wissenschaftsmagazin/neues-von-umstrittenen-human-brain-project>
- Coverage of the same article in various blog posts:  
PLOS Blog: <http://blogs.plos.org/blog/2016/04/11/is-biodiversity-research-biased/>  
PLOS Ecology Community: <http://blogs.plos.org/ecology/2016/04/11/is-biodiversity-research-biased/>  
ScienceDaily : <https://www.sciencedaily.com/releases/2016/03/160329153354.htm>  
Pacific Standard: <https://psmag.com/is-conservation-research-happening-in-the-right-places-4da5f9af9d18#.m96v4e8tp>  
Science Newline Biology: <http://www.sciencenewline.com/news/2016032919390036.html>
- Release of a song and music video about my research published in Science of the Total Environment (2016) produced in collaboration with the Swiss Band Knuts Koffer: [https://www.youtube.com/watch?v=6MJkQOao\\_dw](https://www.youtube.com/watch?v=6MJkQOao_dw)
- Premiere of the video during the Flussfilmfest in the movie theater Moviemiento in Berlin: <https://www.grueneliga-berlin.de/flussfilmfest-berlin-im-moviemiento-kreuzberg/>
- Interview with the lead singer and composer of Knuts Koffer and myself in the "The Freshwater Blog": <http://freshwaterblog.net/2016/02/10/flussfisch-creative-freshwater-science-communication-through-song/>
- Article about the our collaboration in the online magazine "Kommunalmagazin": <http://www.kommunalmagazin.ch/renaturierung-rockt>

#### FURTHER EDUCATION: since 2010

- 2018 - Spring University on Ecosystem Services Modeling (5 days) BC3-Basque Centre for Climate Change, Bilbao, Spain
- Maori Culture, HEDC workshop, University of Otago, New Zealand
- Introduction to the Treaty of Waitangi, HEDC workshop, University of Otago, New Zealand
- 2017 - Strategic networking (2 days), Leibniz Association, Berlin, Germany
- Professional communication for academics (2 days), Leibniz Association, Berlin, Germany

- Self-presentation (2 days), Leibniz Association, Berlin, Germany
- Career profiling (2 days), Leibniz Association, Berlin, Germany
- 2016 - Competence definition, SMART objective setting (2 days), Leibniz Association, Berlin, Germany.
- Chances and Challenges of Interdisciplinarity; Leibniz-Kolleg for Young Researchers (3 days), Leibniz Association, Berlin, Germany.
- Uncharted waters: business crash course (1 day), IGB, Berlin, Germany.
- QGIS advanced training course (3 days), IGB, Berlin, Germany.
- 2015 - Media- and Camera training (1 day), IGB, Berlin, Germany.
- Advanced statistics: general(ized) linear mixed models (5 days), IGB, Berlin, Germany.
- 2014 - Spatial multicriteria analysis for environmental decision-making (3 days), University of Trento, Italy.
- Meeting/workshop tools and moderation (1 day), IGB, Berlin, Germany.
- 2013 - Programming with R (2 days), IGB, Berlin, Germany.
- Adobe Illustrator (1 day), IGB, Berlin, Germany.
- 2012 - Grant writing, Griffith University (3 days), Brisbane, Australia.
- 2011 - Marxan software application (3 days), University of Queensland, Brisbane, Australia.
- 2010 - Eawag Summer School in Environmental Systems Analysis (5 days), Switzerland.

#### NON-PROFIT COMMITMENT

- since 2008 Scientific guide for whale monitoring sailing cruises involving citizen scientists organized through OceanCare (<https://www.oceancare.org/en/our-work/research/sicily/>), Golfe Juan (France) and Siracusa (Sicily)
- since 2017 Research associate with OceanCare

#### INTERESTS

- surfing, yoga, sailing (lake licence), swimming, mountain biking, reading, playing the piano, scuba diving (SSI dive con licence), naturalism, back-country skiing, hiking

Dunedin, March 2019