10 References

Aas Ø., Einum S., Klemetsen A., Skurdal J. 2011. Atlantic salmon ecology. Wiley-Blackwell, Oxford. DOI: *10.1002/9781444327755*

Aerne L. 2020. Links between substrate structure, aquatic invertebrate communities and brown trout ecology: a case study within and among Swiss streams. Master's thesis, University of Zurich, Zurich.

Armstrong J.D., Kemp P.S., Kennedy G.J.A., Ladle M., Milner M.J. 2003. Habitat requirements of Atlantic salmon and brown trout in rivers and streams. *Fisheries Research*, 62(2): 143–170. DOI: *10.1016/S0165-7836(02)00160-1*

Baptista M., Valcarcel R. 2018. Renaturalizing floodplains. *Journal of Water Resource and Protection*, 10: 533–537. DOI: *10.4236/jwarp.2018.105029*

Battisacco E., Franca M.J., Schleiss A.J. 2016. Sediment replenishment: influence of the geometrical configuration on the morphological evolution of channel-bed. *Water Resources Research*, 52(11): 8879–8894. DOI: *10.1002/2016WR019157*

Baxter C.V., Fausch K.D., Saunders W.C. 2005. Tangled webs: reciprocal flows of invertebrate prey link streams and riparian zones. *Freshwater Biology,* 50(2): 201–220. DOI: *10.1111/j.1365-2427.2004.01328.x*

Baxter R.M. 1977. Environmental effects of dams and impoundments. *Annual Review of Ecology and Systematics*, 8: 255–283. DOI: *10.1146/annurev.es.08.110177.001351*

Bo T., Fenoglio S., Malacarne G., Pessino M., Sgariboldi F. 2007. Effects of clogging on stream macroinvertebrates: an experimental approach. *Limnologica*, 37(2): 186–192. DOI: *10.1016/j.limno.2007.01.002*

Boano F., Harvey J.W., Marion A., Packman A.I., Revelli R., Ridolfi L., Wörman A. 2014. Hyporheic flow and transport processes: mechanisms, models, and biogeochemical implications. *Reviews of Geophysics*, 52(4): 603–679. DOI: *10.1002/2012RG000417*

Bollrich G. 2013. Technische Hydromechanik 1: Grundlagen (7th Edition). Beuth Verlag GmbH, Berlin. ISBN: 9783410291695

Breitenmoser T. 2014. Flechtenvorkommen in Grauerlenauen im Kanton Graubünden. Bachelor's thesis. ETH Zurich, Zurich.

Breitenstein M., Kirchhofer A. 2010. Förderung der litho-rheophilen Fischarten der Schweiz, Factsheets zu Biologie und Förderungsmassnahmen. Commissioned by the Federal Office for the Environment (FOEN), Bern: 52 pp.

Brodersen, J., Hellmann, J., Seehausen, O. 2023. Erhebung der Fischbiodiversität in Schweizer Fliessgewässern. Progetto Fiumi Schlussbericht.

Brown B.L. 2003. Spatial heterogeneity reduces temporal variability in stream insect communities. *Ecology Letters*, 6(4): 316–325. DOI: *10.1046/j.1461-0248.2003.00431.x*

Brunke M., Gonser T. 1997. The ecological significance of exchange processes between rivers and groundwater. *Freshwater Biology*, 37(1): 1–33. DOI: *10.1046/j.1365-2427.1997.00143.x*

Bühlmann M., Boes R.M. 2014. Lateral flood discharge at rivers: concepts and challenges. In: Schleiss A.J., De Cesare G., Franca M.J., Pfister M. (Eds). River Flow 2014: Proceedings of the 7th International Conference on Fluvial Hydraulics. Lausanne, Switzerland, 3–5 September 2014. CRC Press, London: 1799–1806. ISBN: 9781138026742

Burdon F.J., Harding J.S. 2008. The linkage between riparian predators and aquatic insects across a stream-resource spectrum. *Freshwater Biology,* 53(2): 330–346. DOI: *10.1111/j.1365-2427.2007.01897.x*

Buxton T.H. 2018. Flume simulations of salmon bioturbation effects on critical shear stress and bedload transport in rivers. *River Research and Applications*, 34(4): 357–371. DOI: *10.1002/rra.3250*

Caponi F., Siviglia A. 2018. Numerical modeling of plant root controls on gravel bed river morphodynamics. *Geophysical Research Letters*, 45(17): 9013–9023. DOI: *10.1029/2018GL078696*

Carling P.A. 1984. Deposition of fine and coarse sand in an open-work gravel bed. *Canadian Journal of Fisheries and Aquatic Sciences*, 41(2): 263–270. DOI: *10.1139/f84-030*

Castro J.M., Thorne C.R. 2019. The stream evolution triangle: integrating geology, hydrology, and biology. *River Research and Applications,* 35(4): 315–326. DOI: *10.1002/rra.3421*

Chari L.D., Richoux N.B., Moyo S., Villet M.H. 2020. Dietary fatty acids of spiders reveal spatial and temporal variations in aquatic-terrestrial linkages. *Food Webs* 24: e00152. DOI: *10.1016/j.fooweb.2020.e00152*

Chen S., Chen B., Fath B.D. 2015. Assessing the cumulative environmental impact of hydropower construction on river systems based on energy network model. *Renewable and Sustainable Energy Reviews*, 42: 78–92. DOI: *10.1016/j.rser.2014.10.017*

Cui Y., Wooster J.K., Baker P.F., Dusterhoff S.R. 2008. Theory of fine sediment infiltration into immobile gravel bed. *Journal of Hydraulic Engineering*, 134(10): 1421. DOI: *10.1061/(ASCE)0733-9429(2008)134:10(1421)*

Cunningham A.B., Anderson C.J., Bouwer H. 1987. Effects of sediment-laden flow on channel bed clogging. *Journal of Irrigation and Drainage Engineering,* 113(1): 106–118. DOI: *10.1061/(ASCE)0733-9437(1987)113:1(106)*

De Marchi G. 1934. Saggio di teoria de funzionamente degli stramazzi laterali. *L'Energia Elettrica*, 11(11): 849–860.

Delarze R., Gonseth Y. 2015. Lebensräume der Schweiz: Ökologie, Gefährdung, Kennarten (3rd Edition). Ott, Thun. 456 pp. ISBN 9783722501499

Dhont B., Ancey C. 2018. Are bedload transport pulses in gravel bed rivers created by bar migration or sediment waves? *Geophysical Research Letters*, 45(11): 5501–5508. DOI: *10.1029/2018GL077792*

Di Bacco M., Scorzini A.R. 2019. Are we correctly using discharge coefficients for side weirs? Insights from a numerical investigation. *Water,* 11(12): 2585. DOI: *10.3390/w11122585*

Dole-Olivier M.J., Marmonier P., Beffy J.L. 1997. Response of invertebrates to lotic disturbance: is the hyporheic zone a patchy refugium? *Freshwater Biology,* 37: 257–276. DOI: *10.1046/j.1365-2427.1997.00140.x*

Dymytrova L., Stofer S., Ginzler C., Breiner F.T., Scheidegger C. 2016. Forest-structure data improve distribution models of threatened habitat specialists: implications for conservation of epiphytic lichens in forest landscapes. *Biological Conservation,* 196: 31–38. DOI: *10.1016/j.biocon.2016.01.030*

Ecohydraulic Engineering GmbH. 2019. Applications of the CASiMiR Model. Retrieved from *http://www.casimir-software.de/ENG/veg_eng.html*

Einum S., Fleming I.A. 1999. Maternal effects of egg size in brown trout (*Salmo trutta*): norms of reaction to environmental quality. *Proceedings of the Royal Society of London Series. B: Biological Sciences,* 266: 2095–2100. DOI: *10.1098/rspb.1999.0893*

Extence C.A., Chadd R.P., England J., Dunbar M.J., Wood P.J., Taylor E.D. 2013. The assessment of fine sediment accumulation in rivers using macro-invertebrate community response. *River Research and Applications,* 29(1): 17–55. DOI: *10.1002/rra.1569*

Facchini M. 2017. Downstream morphological effects of Sediment Bypass Tunnels. In: Boes R.M. (Ed.). *VAW-Mitteilungen 243*. Versuchsanstalt für Wasserbau, Hydrologie und Glaziologie (VAW), ETH Zurich, Zurich.

Fetzer J., Holzner M., Plötze M., Furrer G. 2017. Clogging of an Alpine streambed by silt-sized particles – insights from laboratory and field experiments. *Water Research,* 126: 60–69. DOI: *10.1016/j.watres.2017.09.015*

Fink S., Belser A., Juez C., Scheidegger C., Weber C., Vetsch D. 2018. 'Lebensraum Gewässer – Sedimentdynamik und Vernetzung', ein Projekt im Forschungsprogramm. *Natur + Landschaft, Inside,* 4: 27–32.

Fink S., Gross A., Senn-Irlet B., Scheidegger C. 2021. Citizen science data predict high potential for macrofungal refugia outside protected riparian areas. *Fungal Ecology,* 49: 100981. DOI: *10.1016/j.funeco.2020.100981*

Fink S., Lanz T., Stecher R., Scheidegger C. 2017. Colonization potential of an endangered riparian shrub species. *Biodiversity and Conservation,* 26(9): 2099–2114. DOI: *10.1007/s10531-017-1347-3*

FOEN (Federal Office for the Environment) (Ed.) 2005. Recommendation. Spatial Planning and Natural Hazards. *The Environment in Practice,* VU-7516-E, FOEN, Bern: 50 pp.

FOEN (Federal Office for the Environment) (Ed.) 2012. Erkenntnisse aus dem Projekt Integrales Flussgebietsmanagement. Merkblatt-Sammlung Wasserbau und Ökologie. *Umwelt-Wissen,* UW-1211-D, FOEN, Bern: 58 pp.

FOEN (Federal Office for the Environment) (Ed.) 2017a. Geschiebe- und Habitatsdynamik. Merkblatt-Sammlung Wasserbau und Ökologie. *Umwelt-Wissen,* UW-1708-D, FOEN, Bern: 85 pp.

FOEN (Federal Office for the Environment) (Ed.) 2017b. Aktionsplan des Bundesrates. Aktionsplan Strategie Biodiversität Schweiz. FOEN, Bern: 53 pp.

FOEN (Federal Office for the Environment) 2018. Watercourse structure and morphology. FOEN. 20.8.2018. https://www.bafu.admin.ch/bafu/en/home/topics/water/info-specialists/state-of-waterbodies/state-of-watercourses/watercourse-structure-and-morphology.html

FOEN (Federal Office for the Environment) 2021a. Sites d'intérêt pour la conservation des espèces et de leurs habitats: qualité observée, qualité potentielle et besoin en surfaces supplémentaires. Rapport méthodologique de l'analyse menée par InfoSpecies à l'échelle nationale.

FOEN (Federal Office for the Environment) (Ed.) 2021b. Auswirkungen des Klimawandels auf die Schweizer Gewässer. Hydrologie, Gewässerökologie und Wasserwirtschaft. *Umwelt-Wissen,* UW-2101-D. FOEN, Bern: 134 pp.

Fox A., Packman A.I., Boano F., Phillips C.B., Arnon S. 2018. Interactions between suspended kaolinite deposition and hyporheic exchange flux under losing and gaining flow conditions. *Geophysical Research* Letters, 45(9): 4077–4085. DOI: *10.1029/2018GL077951*

Friedl F., Battisacco E., Vonwiller L., Fink S., Vetsch D., Weitbrecht V., Franca M.J., Scheidegger C., Boes R., Schleiss A. 2017. Geschiebeschüttungen und Ufererosion, in Geschiebe- und Habitatsdynamik. Merkblatt-Sammlung Wasserbau und Ökologie. *Umwelt-Wissen,* UW-1708-D, FOEN, Bern: 77–84.

Fries J.S., Taghon G.L. 2010. Particle fluxes into permeable sediments: comparison of mechanisms mediating deposition. *Journal of Hydraulic Engineering,* 136(4): 214–221. DOI: *10.1061/(ASCE)HY.1943-7900.0000169*

Fritz K.A., Kirschman L.J., McCay S.D., Trushenski J.T., Warne R.W., Whiles M.R. 2017. Subsidies of essential nutrients from aquatic environments correlate with immune function in terrestrial consumers. *Freshwater Science,* 36(4): 893–900. DOI: *10.1086/694451*

Gibson S., Abraham D., Heath R., Schoellhamer D. 2009. Vertical gradational variability of fines deposited in a gravel framework. *Sedimentology,* 56(3): 661–676. *DOI: 10.1111/j.1365-3091.2008.00991.x*

Giesecke J., Heimerl S., Mosonyi E. 2014. Wasserkraftanlagen. Planung, Bau und Betrieb (6th Edition). Springer-Verlag, Berlin: 940 pp. DOI: *10.1007/978-3-662-10859-8*

Gladyshev M., Arts M., Sushchik N. 2009. Preliminary estimates of the export of omega-3 highly unsaturated fatty acids (EPA+DHA) from aquatic to terrestrial ecosystems. In: Kainz M., Brett M., Arts M. (Eds). Lipids in Aquatic Ecosystems. Springer, New York, NY. *https://doi.org/10.1007/978-0-387-89366-2_8*

Gladyshev M.I., Sushchik N.N., Makhutova O.N. 2013. Production of EPA and DHA in aquatic ecosystems and their transfer to the land. *Prostaglandins and Other Lipid Mediators*, 107: 117–126. DOI: *10.1016/j.prostaglandins.2013.03.002*

Guisan A., Thuiller W., Zimmermann N.E. 2017. Habitat suitability and distribution models: with applications in R. Cambridge University Press, Cambridge: 462 pp. DOI: *10.1017/9781139028271*

Guthruf J. (2014) Arbeitshilfe zur Messung der inneren Kolmation. Commissioned by the Renaturalization Fund of Canton Bern, Bern: 14 pp.

Hager W.H. 1987. Lateral outflow over side weirs. *Journal of Hydraulic Engineering*, 113(4): 491–504. DOI: *10.1061/(ASCE)0733-9429(1987)113:4(491)*

Hager W.H. 2010. Wastewater Hydraulics, Theory and Practice (2nd Edition). Springer, Heidelberg: 660 pp. DOI: *10.1007/978-3-642-11383-3*

Harwood J.L. 1996. Recent advances in the biosynthesis of plant fatty acids. *Biochimica et Biophysica* Acta, 1301(1–2): 7–56. DOI: *10.1016/0005-2760(95)00242-1*

Hauer C., Holzapfel P., Tonolla D., Habersack H., Zolezzi G. 2019. In situ measurements of fine sediment infiltration (FSI) in gravel-bed rivers with a hydropeaking flow regime. *Earth Surface Processes and Landforms*, 44(2): 433–448. DOI: *10.1002/esp.4505*

Hixson S.M., Sharma B., Kainz M.J., Wacker A., Arts M.T. 2015. Production, distribution, and abundance of long-chain omega-3 polyunsaturated fatty acids: a fundamental dichotomy between freshwater and terrestrial ecosystems. *Environmental Reviews*, 23(4): 414–424. DOI: */10.1139/er-2015-0029*

Hostmann M., Buchecker M., Ejderyan O., Geiser U., Junker B., Schweizer S., Truffer B., Zaugg Stern M. 2005. Wasserbauprojekte gemeinsam planen. Handbuch für die Partizipation und Entscheidungsfindung bei Wasserbauprojekten. Eawag, WSL, LCH-EPFL, VAW-ETHZ: 48 pp.

Iwata T., Nakano S., Murakami M. 2003. Stream meanders increase insectivorous bird abundance in riparian deciduous forests. *Ecography,* 26(3): 325–337. DOI: *10.1034/j.1600-0587.2003.03355.x*

Izadinia E., Heidarpour M. 2016. Discharge coefficient of a circular-crested side weir in rectangular channels. J*ournal of Irrigation and Drainage Engineering*, 142(6): 06016005. DOI: *10.1061/(ASCE)IR.1943-4774.0001025*

Jäggi M., Boes R., Bühlmann M., Dähler M., Huber A., Kaspar H., Schluh M., Weiss H., Stocker S., Weitbrecht V., Schmocker L. 2015. Positionspapier zu seitlichen Hochwasserentlastungen an Flüssen. Kommission für Hochwasserschutz des Schweizerischen Wasserwirtschaftsverbandes (KOHS). *Wasser Energie Luft*, 107(4): 293–295. ISSN: 0377-905X

Jöhl R., Martin M., Bonnard L., Huber C. 2020. Lösungswege bei überlagernden Interessen im Bereich Biodiversität. Info Habitat. Commissioned by the Federal Office for the Environment (FOEN), Bern: 60 pp.

Jonsson B., Jonsson N. 2011. Ecology of Atlantic Salmon and Brown Trout: habitat as a template for life histories. Springer, Dordrecht: 708 pp. DOI: *10.1007/978-94-007-1189-1*

Juez C., Schärer C., Jenny H., Schleiss A.J., Franca M.J. 2019. Floodplain land cover and flow hydrodynamic control of overbank sedimentation in compound channel flows. *Water Resources Research,* 55(11): 9072–9091. DOI: *10.1029/2019WR024989*

Kato C., Iwata T., Nakano S., Kishi D. 2003. Dynamics of aquatic insect flux affects distribution of riparian web-building spiders. *Oikos*, 103(1): 113–120. DOI: *10.1034/j.1600-0706.2003.12477.x*

Keller I., Schuler J., Bezault E., Seehausen O. 2012. Parallel divergent adaptation along replicated altitudinal gradients in Alpine trout. BMC Evolutionary Biology, 12: 210. DOI: *10.1186/1471-2148-12-210*

Keller I., Taverna A., Seehausen O. 2011. Evidence of neutral and adaptive genetic divergence between European trout populations sampled along altitudinal gradients. *Molecular Ecology,* 20(9): 1888–1904. DOI: *10.1111/j.1365-294X.2011.05067.x*

Kondolf G.M. 1997. Hungry water: effects of dams and gravel mining on river channels. *Environmental Management*, 21: 533–551. DOI: *10.1007/s002679900048*

Kondolf G.M. 2000. Assessing salmonid spawning gravel quality. *Transactions of the American Fisheries Society,* 129(1): 262–281. DOI: *10.1577/1548-8659(2000)129<0262:ASSGQ>2.0.CO;2*

Kondolf G.M., Wolman M.G. 1993. The sizes of salmonid spawning gravels. *Water Resources Research*, 29 (7): 2275–2285. DOI: *10.1029/93WR00402*

Kraus J. M. 2019. Contaminants in linked aquatic–terrestrial ecosystems: predicting effects of aquatic pollution on adult aquatic insects and terrestrial insectivores. *Freshwater Science*, 38(4): 919–927. DOI: *10.1086/705997*

Laeser S.R.C., Baxter V., Fausch K.D. 2005. Riparian vegetation loss, stream channelization, and web-weaving spiders in northern Japan. *Ecological Research*, 20(6): 646–651. DOI: *10.1007/s11284-005-0084-3*

Lepori F., Hjerdt N. 2006. Disturbance and aquatic biodiversity: reconciling contrasting views. *BioScience*, 56(10): 809–818. DOI: *10.1641/0006-3568(2006)56[809:DAABRC]2.0.CO;2*

Maggini R. 2011. Species distribution models for conservation-oriented studies in Switzerland: filling data and tools gaps. Doctoral dissertation, University of Lausanne, Lausanne.

Maggini R., Lehmann A., Zbinden N., Zimmermann N.E., Bolliger J., Schröder B., Foppen R., Schmid H., Beniston M., Jenni L. 2014. Assessing species vulnerability to climate and land use change: the case of the Swiss breeding birds. *Diversity and Distributions*, 20(6): 708–719. DOI: *10.1111/ddi.12207*

Mathers K.L., Kowarik C., Rachelly C., Robinson C.T., Weber C. 2021a. The effects of sediment traps on instream habitat and macroinvertebrates of mountain streams. *Journal of Environmental Management*, 295: 113066. DOI: *10.1016/j.jenvman.2021.113066*

Mathers K.L., Robinson C.T., Weber C. 2021b. Artificial flood reduces fine sediment clogging enhancing hyporheic zone physiochemistry and accessibility for macroinvertebrates. *Ecological Solutions and Evidence*, 2(4): e12103. DOI: *10.1002/2688-8319.12103*

Mathers, K.L., Robinson, C.T., Weber, C. (2022). Patchiness in flow refugia use by macroinvertebrates following an artificial flood pulse. *River Research and Applications* 38: 696–707.

Meurer S., Pfarr U. 2018. 30 Jahre gesteuerte Hochwasserrückhaltung am südlichen Oberrhein. *Natur und Landschaft*, 93(2): 64–70. DOI: *10.17433/2.2018.50153547.64-70*

Meile T., Fette M., Baumann P. 2005. Synthesebericht Schwall/Sunk. Eine Publikation des Rhone-Thur Projektes. Eawag, WSL, LCH-EPFL, VAW-ETHZ: 48 pp.

Mooneyham C., Strom K. 2018. Deposition of suspended clay to open and sand-filled framework gravel beds in a laboratory flume. *Water Resources Research*, 54(1): 323–344. DOI: *10.1002/2017WR020748*

Mörtl C., Vorlet S.L., Manso P.A., De Cesare G. 2020. The sediment challenge of Swiss river corridors interrupted by man-made reservoirs. In: Uijttewaal W., Franca M.J., Valero D., Chavarrias V., Arbós C.Y., Schielen R., Crosato A. (Eds). Riverflow 2020: Proceedings of the 10th International Conference on Fluvial Hydraulics. Delft, The Netherlands, 7–10 July 2020. CRC Press, London: 1764–1773. DOI: *10.1201/b22619*

Mörz S. 2017. Einfluss des Keimsubstrats auf die Etablierung und das Konkurrenzverhalten von auentypischen Pflanzenarten sowie invasiven Pflanzenarten. Bachelor's thesis, Weihenstephan-Triesdorf University of Applied Science, WSL Birmensdorf.

Muehlbauer J.D., Lupoli C.A., Kraus J.M. 2019. Aquatic–terrestrial linkages provide novel opportunities for freshwater ecologists to engage stakeholders and inform riparian management. *Freshwater Science,* 38(4): 946–952. DOI: *10.1086/706104*

Murray-Bligh J. 1999. Procedures for collecting and analysing macroinvertebrate samples. BT0001. The Environment Agency, Bristol: 176 pp.

Packman A.I., MacKay J.S. 2003. Interplay of stream-subsurface exchange, clay particle deposition, and streambed evolution. *Water Resources Research,* 39(4): 1097. DOI: *10.1029/2002WR001432*

Paetzold A., Schubert C.J., Tockner K. 2005. Aquatic terrestrial linkages along a braided-river: riparian arthropods feeding on aquatic insects. *Ecosystems,* 8(7): 748–759. DOI: *10.1007/s10021-005-0004-y*

Paetzold A., Smith M., Warren P.H., Maltby, L. 2011. Environmental impact propagated by cross-system subsidy: chronic stream pollution controls riparian spider populations. *Ecology,* 92(9): 1711–1716. DOI: *10.1890/10-2184.1*

Parasiewicz P. 2011. MesoHABSIM – a concept for application of instream flow models in river restoration planning. *Fisheries,* 26(9): 6–13. DOI: *10.1577/1548-8446(2001)026<0006:M>2.0.CO;2*

Park J., Batalla R.J., Birgand F., Esteves M., Gentile F., Harrington J.R., Navratil O., López-Tarazón J.A., Vericat D. 2019. Influences of catchment and river channel characteristics on the magnitude and dynamics of storage and re-suspension of fine sediments in river beds. *Water,* 11(5): 878. DOI: *10.3390/w11050878*

Pfarr U. 2014. Erfahrung mit ökologischen Flutungen der Polder Altenheim – Umweltverträglicher Hochwasserschutz im Integrierten Rheinprogramm. *Auenmagazin, Magazin des Auenzentrums Neuburg an der Donau,* June 2014: 9–13.

Pistocchi A., Castellarin A. 2012. An analysis of change in alpine annual maximum discharges: implications for the selection of design discharges. *Hydrological Processes,* 26: 1517–1526. DOI: *10.1002/hyp.8249*

Pulg U., Barlaup B.T., Sternecker K., Trepl L., Unfer G. 2013. Restoration of spawning habitats of brown trout (*Salmo trutta*) in a regulated chalk stream. *River Research and Applications,* 29(2): 172–182. DOI: *10.1002/rra.1594*

Rachelly C., Friedl F., Boes R.M., Weitbrecht V. 2021a. Morphological response of channelized, sinuous gravel-bed rivers to sediment replenishment. *Water Resources Research,* 57(6): e2020WR029178. DOI: *10.1029/2020WR029178*

Rachelly C., Mathers K.L., Weber C., Weitbrecht V., Boes R.M., Vetsch D.F. 2021b. How does sediment supply influence refugia availability in river widenings? *Journal of Ecohydraulics*, 6(2): 121–138. DOI: *10.1080/24705357.2020.1831415*

Rachelly C., Weitbrecht V., Vetsch D.F., Boes R.M. 2018. Morphological development of river widenings with variable sediment supply. In: Paquier A., Rivière N. (Eds). River Flow 2018: 9th International Conference on Fluvial Hydraulics. Lyon-Villeurbanne, France, 5–8 September 2018. *E3 Web of Conferences, 40: 02007.* DOI: *10.1051/e3sconf/20184002007*

Ramberg E., Burdon F.J., Sargac J., Kupilas B., Rîşnoveanu G., Lau D.C., Johnson R.K., McKie B.G. 2020. The structure of riparian vegetation in agricultural landscapes influences spider communities and aquatic–terrestrial linkages. *Water,* 12(10): 2855. DOI: *10.3390/w12102855*

Ranga Raju K.G., Gupta S.K., Prasad B. 1979. Side weir in rectangular channel. *Journal of the Hydraulics Division,* 105(5): 547–554. DOI: *10.1061/JYCEAJ.0005207*

Riebe C.S., Sklar L.S., Overstreet B.T., Wooster J.K. 2014. Optimal reproduction in salmon spawning substrates linked to grain size and fish length. *Water Resources Research,* 50(2): 898–918. DOI: *10.1002/2013WR014231*

Robinson C. 2018. Long-term ecological responses of the River Spöl to experimental floods. *Freshwater Science,* 37(3): 433–447. DOI: *10.1086/699481*

Rohde S. 2005. Integrales Gewässermanagement – Erkenntnisse aus dem Rhône-Thur Projekt. Synthesebericht Gerinneaufweitungen. Swiss Federal Institute for Forest, Snow and Landscape Research WSL, Birmensdorf: 69 pp.

Rosier B. 2007. Interaction of side weir overflow with bed-load transport and bed morphology in a channel. PhD dissertation, EPFL, Lausanne.

Rosier B., Boillat J.L., Schleiss A. 2008. Berücksichtigung von morphologischen Prozessen bei der Bemessung einer seitlichen Notentlastung an Flüssen. Rhone-Thur-Projekt. *Wasser Energie Luft,* 100(1): 1–6.

Sayanova O.V., Napier J.A. 2004. Eicosapentaenoic acid: biosynthetic routes and the potential for synthesis in transgenic plants. *Phytochemistry,* 65(2): 147–158. DOI: *10.1016/j.phytochem.2003.10.017*

Schälchli U. 1992. The clogging of coarse gravel river beds by fine sediment. *Hydrobiologia,* 235: 189–197. DOI: *10.1007/BF00026211*

Schälchli U. 1993. Die Kolmation von Fliessgewässersohlen: Prozesse und Berechnungsgrundlagen. PhD dissertation, ETH Zurich, Zurich. DOI: *10.3929/ethz-a-001322977*

Schälchli, Abegg + Hunzinger. 2001. Trübung und Schwall Alpenrhein – Einfluss auf Substrat, Benthos und Fische, Fachbericht Trübung, Strömung, Geschiebetrieb und Kolmation. Internationale Regierungskommission Alpenrhein – Projektgruppe Gewässer und Fischökologie: 101 pp.

Schälchli, Abegg + Hunzinger. 2002. Kolmation: Methoden zur Erkennung und Bewertung. Commissioned by the Swiss Federal Institute of Aquatic Science and Technology (Eawag), Dübendorf: 24 pp.

Schälchli U., Kirchhofer A. 2012. Sanierung Geschiebehaushalt – Strategische Planung. Ein Modul der Vollzugshilfe Renaturierung der Gewässer. *Umwelt-Vollzug,* UV-1226-D, Federal Office for the Environment (FOEN), Bern: 74 pp.

Schleiss A.J., De Cesare G., Althaus J.J. 2010. Verlandung der Stauseen gefährdet die nachhaltige Nutzung der Wasserkraft. *Wasser Energie Luft,* 102(1): 31–40.

Schlotz N., Roulin A., Ebert D., Martin-Creuzburg D. 2016. Combined effects of dietary polyunsaturated fatty acids and parasite exposure on eicosanoid-related gene expression in an invertebrate model. *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology,* 201: 115–123. DOI: *10.1016/j.cbpa.2016.07.008*

Schroff R., Mörtl C., De Cesare G. 2021. Wirkungskontrolle einer Sedimentzugabe: Habitatvielfalt und Kolmation. *WasserWirtschaft,* 111(9), 68–76. DOI: *10.1007/s35147-021-0896-2*

Stähly S., Franca M.J., Robinson C.T., Schleiss A.J. 2020. Erosion, transport and deposition of a sediment replenishment under flood conditions. *Earth Surface Processes and Landforms,* 45(13): 3354–3367. DOI: *10.1002/esp.4970*

Stanley D.W. 2014. Eicosanoids in invertebrate signal transduction systems. Princeton University Press, Princeton. ISBN: 9780691630038

Sternecker K., Wild R., Geist J. 2013. Effects of substratum restoration on salmonid habitat quality in a subalpine stream *Environmental Biology of Fishes*, 96(12): 1341–1351. DOI: *10.1007/s10641-013-0111-0*

Stillwell W., Wassall S.R. 2003. Docosahexaenoic acid: membrane properties of a unique fatty acid. *Chemistry and Physics of Lipids,* 126(1): 1–27. DOI: *10.1016/s0009-3084(03)00101-4*

Streit A. 2018. Vorkommen von *Arthonia cinnabarina* auf *Fraxinus excelsior* in den Hartholzauenwälder des Einzugsgebiets der oberen Töss (ZH, Schweiz). University of Bern.

Tonina D., Buffington J.M. 2009. Hyporheic exchange in mountain rivers I: mechanics and environmental effects. *Geography Compass,* 3(3): 1063–1086. DOI: *10.1111/j.1749-8198.2009.00226.x*

Tonolla D. 2017. Éclusées – Mesures d'assainissement. Un module de l'aide à l'exécution Renaturation des eaux. *L'environnement pratique,* UV-1701-F, Federal Office for the Environment (FOEN), Bern: 133 pp.

Twining C.W., Brenna J.T., Lawrence P., Shipley J.R., Tollefson T.N., Winkler D.W. 2016. Omega-3 long-chain polyunsaturated fatty acids support aerial insectivore performance more than food quantity. *Proceedings of the National Academy of Sciences of the United States of America,* 113(39): 10920–10925. DOI: *10.1073/pnas.1603998113*

Twining C.W., Shipley J.R., Winkler D.W. 2018. Aquatic insects rich in omega-3 fatty acids drive breeding success in a widespread bird. *Ecology Letters,* 21(12): 1812–1820. DOI: *10.1111/ele.13156*

Uttaro A.D. 2006. Biosynthesis of polyunsaturated fatty acids in lower eukaryotes. *IUBMB Life,* 58(10): 563–571. DOI: *10.1080/15216540600920899*

Van Looy K., Tonkin J.D., Floury M., Leigh C., Soininen J., Larsen S., Heino J., Poff N.L.R., Delong M., Jähnig S.C., Datry T. 2019. The three Rs of river ecosystem resilience: resources, recruitment, and refugia. *River Research and Applications*, 35(2): 107–120. DOI: *10.1002/rra.3396*

Van Rijn L.C. 1984. Sediment transport, part II: suspended load transport. *Journal of Hydraulic Engineering*, 110(11). DOI: *10.1061/(ASCE)07339429(1984)110:11(1613)*

Van Rijn L.C. 2005. Principles of Sedimentation and Erosion Engineering in Rivers, Estuaries and Coastal Seas. Aqua Publications, Blokzijl: 623 pp. ISBN: 9789080035669

Vanzo D., Peter S., Vonwiller L., Bürgler M., Weberndorfer M., Siviglia A., Conde D., Vetsch D.F. 2021. Basement v3: a modular freeware for river process modelling over multiple computational backends. Environmental Modelling and Software, 143: 105102. DOI: *10.1016/j.envsoft.2021.105102*

Vetsch D., Allen J., Belser A., Boes R., Brodersen J., Fink S., Franca M., Juez C., Nadyeina O., Christopher R.T., Scheidegger C., Schleiss A., Siviglia A., Weber C., Weitbrecht V. 2018. Lebensraum Gewässer – Sedimentdynamik und Vernetzung: Forschungsprogramm 'Wasserbau und Ökologie'. *Wasser, Energie und Luft,* 110(1): 19–24.

Vetsch D.F., Bürgler M., Gerke E., Kammerer S., Vanzo D., Boes R. 2020. BASEMENT – Softwareumgebung zur numerischen Modellierung der Hydro- und Morphodynamik in Fließgewässern. *Österreichische Wasser- und Abfallwirtschaft*, 72(7): 281–290. DOI: *10.1007/s00506-020-00677-6*

Vetsch D.F., Siviglia A., Bacigaluppi P., Bürgler M., Caponi F., Conde D., Gerke E., Kammerer S., Koch A., Peter S., Vanzo D., Vonwiller L., Weberndorfer M. 2021. System manuals of BASEMENT, version 3.1.1. Laboratory of Hydraulics, Glaciology and Hydrology (VAW). ETH Zurich, Zurich. *https://www.basement.ethz.ch*

Weber C., Nilsson C., Lind L., Alfredsen K.T., Polvi L. 2013. Winter disturbances and riverine fish in temperate and cold regions. *BioScience*, 63(3): 199–210. DOI: *10.1525/bio.2013.63.3.8*

Weber C., Sprecher L., Åberg U., Thomas G., Baumgartner S., Haertel-Borer S. 2019. Zusammenfassung und Inhalt. In: Federal Office for the Environment (FOEN) (Ed.). Wirkungskontrolle Revitalisierung – gemeinsam lernen für die Zukunft. FOEN, Bern: 1–3.

Wharton G., Mohajeri S.H., Righetti M. 2017. The pernicious problem of streambed colmation: a multi-disciplinary reflection on the mechanisms, causes, impacts, and management challenges. *Wiley Interdisciplinary Reviews: Water, 4(5): e1231.* DOI: *10.1002/wat2.1231*

Wöllner R., Scheidegger C., Fink S. 2021. Gene flow in a highly dynamic habitat and a single founder event: proof from a plant population on a relocated river site. *Global Ecology and Conservation*, 28: e01686. DOI: *10.1016/j.gecco.2021.e01686*

Wohl E., Bledsoe B.P., Jacobson R.B., Poff N.L.R., Rathburn S.L., Walters D.M., Wilcox A.C. 2015. The natural sediment regime in rivers: broadening the foundation for ecosystem management. *BioScience*, 65(4): 358–371. DOI: *10.1093/biosci/biv002*

Woolsey S., Weber C., Gonser T., Hoehn E., Hostmann M, Junker B., Roulier C., Schweizer S., Tiegs S., Tockner K., Peter A. 2005. Handbook for evaluating rehabilitation projects in rivers and streams. A publication by the Rhone-Thur project. Eawag, WSL, LCH-EPFL, VAW-ETHZ: 112 pp.

Wooster J.K., Dusterhoff S.R., Cui Y., Sklar L.S., Dietrich W.E., Malko M. 2008. Sediment supply and relative size distribution effects on fine sediment infiltration into immobile gravels. *Water Resources Research*, 44(3): W03424. DOI: *10.1029/2006WR005815*