

**Supplement S1.** Citations for all studies reviewed that included stream size-biodiversity relationships.

Abraham, R. K.; Kelkar, N. Do terrestrial protected areas conserve freshwater fish diversity? Results from the Western Ghats of India. *Oryx* 2012, **46**, 544–553.

Afonso, L. G.; Eterovick, P. C. Spatial and temporal distribution of breeding anurans in streams in southeastern Brazil. *Journal of Natural History* 2007, **41**, 949–963.

Al-Shami, S. A.; Heino, J.; Che Salmah, M. R.; Abu Hassan, A.; Suhaila, A. H.; Madrus, M. R. Drivers of beta diversity of macroinvertebrate communities in tropical forest streams. *Freshwater Biology* 2013, **58**, 1126–1137.

Altermatt, F.; Seymour, M.; Martinez, N. River network properties shape  $\alpha$ -diversity and community similarity patterns of aquatic insect communities across major drainage basins. *Journal of Biogeography* 2013, **40**, 2249–2260.

Angermeier, P.L. and Schlosser, I.J., 1989. Species-Area Relationship for Stream Fishes. *Ecology*, **70**(5), pp.1450-1462.

Angermeier, P. L.; Winston, M. R. Characterizing fish community diversity across Virginia landscapes: Prerequisite for conservation. *Ecological Applications* 1999, **9**, 335-339.

Angermeier, P.; Winston, M. Assessing conservation value of stream communities: a comparison of approaches based on centers of density and species richness. *Freshwater Biology* 1997, **37**, 699–710.

Anjos, M. B. dos; Zuanon, J. Sampling effort and fish species richness in small terra firme forest streams of central Amazonia, Brazil. *Neotropical Ichthyology* 2007, **5**, 45–52.

Barila, T. Y.; Williams, R. D.; Stauffer Jr, J. R. The influence of stream order and selected stream bed parameters on fish diversity in Raystown Branch, Susquehanna River drainage, Pennsylvania. *Aquatic Biology* 1981, **18**, 125–131.

Barquín, J.; Death, R. G. Spatial patterns of macroinvertebrate diversity in New Zealand springbrooks and rhithral streams. *Journal of the North American Benthological Society* 2006, **25**, 768–786.

Bazinet, N. L.; Gilbert, B. M.; Wallace, A. M. A comparison of urbanization effects on stream benthic macroinvertebrates and water chemistry in an urban and an urbanized basin in southern Ontario, Canada. *Water Quality Resources Journal of Canada* 2010, **45**, 327–341.

Beesley, L. S.; Prince, J. Fish community structure in an intermittent river: the importance of environmental stability, landscape factors and within-pool habitat descriptors. *Mar. Freshwater Res.* 2010, **61**, 605–614.

Bernez, I.; Daniel, H.; Haury, J.; Ferreira, M. T. Combined effects of environmental factors and regulation on macrophyte vegetation along three rivers in western France. *River Res. Applic.* 2004, **20**, 43–59.

Besemer, K.; Singer, G.; Quince, C.; Bertuzzo, E.; Sloan, W.; Battin, T. J. Headwaters are critical reservoirs of microbial diversity for fluvial networks. *Proc. R. Soc. B* 2013, **280**, 20131760.

- Blanar, C. A.; Hewitt, M.; McMaster, M.; Kirk, J.; Wang, Z.; Norwood, W.; Marcogliese, D. J. Parasite community similarity in Athabasca River trout-perch (*Percopsis omiscomaycus*) varies with local-scale land use and sediment hydrocarbons, but not distance or linear gradients. *Parasitol. Res.* 2016, **115**, 3853–3866.
- Bogatov, V. V.; Nikulina, T. V.; Vshivkova, T. S. Relationship between the Biodiversity of phyto- and zoobenthos in the continuum of the model mountain river Komarovka (Primorye, Russia). *Russian Journal of Ecology* 2010, **41**, 167–172.
- Bogatov, V.; Fedorovskiy, A.; Nikulina, T. Role of hydrological factors in species diversity of algal communities: A case study of the Komarovka River, Primorye, Russia. *Russian Journal of Ecology* 2013, **44**, 468–474.
- Boyero, L.; Bailey, R. C. Organization of macroinvertebrate communities at a hierarchy of spatial scales in a tropical stream. *Hydrobiologia* 2001, **464**, 219–225.
- Brown, L. R.; May, J. T.; Wulff, M. Associations of benthic macroinvertebrate assemblages with environmental variables in the upper Clear Creek watershed, California. *Western North American Naturalist* 2012, **72**, 473–494.
- Brussock, P. P.; Brown, A. V. Riffle-pool geomorphology disrupts longitudinal patterns of stream benthos. *Hydrobiologia* 1991, **220**, 109–117.
- Callisto, M.; Goulart, M. Invertebrate drift along a longitudinal gradient in a Neotropical stream in Serra do Cipó National Park, Brazil. *Hydrobiologia* 2005, **539**, 47–56.
- Campbell, R. E.; McINTOSH, A. R. Do isolation and local habitat jointly limit the structure of stream invertebrate assemblages? *Freshwater Biology* 2013, **58**, 128–141.
- Cao, Y.; Stodola, A.; Douglass, S.; Shasteen, D.; Cummings, K.; Holtrop, A. Modelling and mapping the distribution, diversity and abundance of freshwater mussels (Family Unionidae) in wadeable streams of Illinois, U.S.A. *Freshwater Biology* 2015, **60**, 1379–1397.
- Carmassi, A. L.; Rondineli, G.; Ferreira, F. C.; Braga, F. M. S. Composition and structure of fish assemblage from Passa Cinco stream, Corumbataí river sub-basin, SP, Brazil. *Brazilian Journal of Biology* 2012, **72**, 87–96.
- Chakona, A.; Swartz, E. R. Contrasting habitat associations of imperilled endemic stream fishes from a global biodiversity hot spot. *BMC Ecology* 2012, **12**, 19.
- Che Salmah, M. R.; Al-Shami, S. A.; Abu Hassan, A.; Madrus, M. R.; Nurul Huda, A. Distribution of detritivores in tropical forest streams of peninsular Malaysia: role of temperature, canopy cover and altitude variability. *International Journal of Biometeorology* 2014, **58**, 679–690.
- Chertoprud, M. V. Longitude variability of macrobenthos in the streams of Central European Russia. *Zh. Obshch. Biol.* 2005, **66**, 491–502.
- Chertoprud, M. V.; Palatov, D. M. Rheophilic communities of macrobenthos of the southwestern Kola Peninsula. *Inland Water Biol* 2013, **6**, 305–313.

- Clenaghan, G.; Giller, P. S.; O'halloran, J. M.; Hernan Stream macroinvertebrate communities in a conifer-afforested catchment in Ireland: relationships to physico-chemical and biotic factors. *Freshwater Biology* 1998, **40**, 175–193.
- Corbacho, C.; Sánchez, J. M.; Costillo, E. Patterns of structural complexity and human disturbance of riparian vegetation in agricultural landscapes of a Mediterranean area. *Agriculture, Ecosystems & Environment* 2003, **95**, 495–507.
- Costa, P. F.; Schulz, U. H. The fish community as an indicator of biotic integrity of the streams in the Sinos River basin, Brazil. *Braz J Biol* 2010, **70**, 1195–1205.
- Coulter, A. A.; Galarowicz, T. L. Fish assemblage and environmental differences upstream and downstream of a cave: a potential reset mechanism. *Environ Biol Fish* 2015, **98**, 1223–1231.
- Couto, T. B. d'Araújo; Aquino, P. D. P. U. de Structure and integrity of fish assemblages in streams associated to conservation units in Central Brazil. *Neotropical Ichthyology* 2011, **9**, 445–454.
- Crunkilton, R. L.; Duchrow, R. M. Use of stream order and biological indices to assess water quality in the Osage and Black river basins of Missouri. *Hydrobiologia* 1991, **224**, 155–166.
- Daniel, W. M.; Brown, K. M. Multifactorial model of habitat, host fish, and landscape effects on Louisiana freshwater mussels. *Freshwater Science* 2013, **32**, 193–203.
- de Nadaï-Monoury, E.; Gilbert, F.; Lecerf, A. Forest canopy cover determines invertebrate diversity and ecosystem process rates in depositional zones of headwater streams. *Freshw Biol* 2014, **59**, 1532–1545.
- de Oliveira, F. F. R.; Eterovick, P. C. The role of river longitudinal gradients, local and regional attributes in shaping frog assemblages. *Acta Oecologica* 2009, **34**, 727–738.
- Death, R. G. Spatial patterns in lotic invertebrate community composition: is substrate disturbance actually important? *Canadian Journal of Fisheries and Aquatic Sciences* 2003, **60**, 603–611.
- DeRolph, C. R.; Nelson, S. A. C.; Kwak, T. J.; Hain, E. F. Predicting fine-scale distributions of peripheral aquatic species in headwater streams. *Ecol Evol* 2015, **5**, 152–163.
- Desmond, J. S.; Zedler, J. B.; Williams, G. D. Fish use of tidal creek habitats in two southern California salt marshes. *Ecological Engineering* 2000, **14**, 233–252.
- Dinakaran, S.; Anbalagan, S. Spatio-temporal dynamics of caddisflies in streams of southern Western Ghats. *J Insect Sci* 2010, **10**, 46.
- Doisy, K. E.; Rabeni, C. F. Flow conditions, benthic food resources, and invertebrate community composition in a low-gradient stream in Missouri. *Journal of the North American Benthological Society* 2001, **20**, 17–32.
- Dunn, W. C.; Milne, B. T.; Mantilla, R.; Gupta, V. K. Scaling relations between riparian vegetation and stream order in the Whitewater River network, Kansas, USA. *Landscape Ecol* 2011, **26**, 983–997.

- Dybkjær, J. B.; Baattrup-Pedersen, A.; Kronvang, B.; Thodsen, H. Diversity and distribution of riparian plant communities in relation to stream size and eutrophication. *J. Environ. Qual.* 2012, **41**, 348–354.
- Eisenring, M.; Altermatt, F.; Westram, A. M.; Jokela, J. Habitat requirements and ecological niche of two cryptic amphipod species at landscape and local scales. *Ecosphere* 2016, **7**.
- Eterovick, P. C. Distribution of Anuran Species among Montane Streams in South-Eastern Brazil. *Journal of Tropical Ecology* 2003, **19**, 219–228.
- Eterovick, P. C.; Barata, I. M. Distribution of tadpoles within and among Brazilian streams: the influence of predators, habitat size and heterogeneity. *Herpetologica* 2006, **62**, 365–377.
- Falke, J. A.; Gido, K. B. Spatial effects of reservoirs on fish assemblages in Great Plains streams in Kansas, USA. *River Res. Applic.* 2006, **22**, 55–68.
- Feio, M. J.; Vieira-Lanero, R.; Ferreira, V.; Graça, M. A. S. The role of the environment in the distribution and composition of Trichoptera assemblages in streams. *Archiv für Hydrobiologie* 2005, **164**, 493–512.
- Fernandes, I. M.; Lourenço, L. S.; Ota, R. P.; Moreira, M. M. M.; Zawadzki, C. H. Effects of local and regional factors on the fish assemblage structure in Meridional Amazonian streams. *Environ Biol Fish* 2013, **96**, 837–848.
- Figueiró, R.; Maia-Herzog, M.; Gil-Azevedo, L. H.; Monteiro, R. F. Seasonal variation in black fly (Diptera: Simuliidae) taxocenoses from the Brazilian Savannah (Tocantins, Brazil). *J. Vector Ecol.* 2014, **39**, 321–327.
- Filipe, A. F.; Marques, T. A.; Seabra, S.; Tiago, P.; Ribeiro, F.; Moreira da Costa, L.; Cowx, I. G.; Collares-Pereira, M. J. Selection of priority areas for fish conservation in Guadiana River Basin, Iberian Peninsula. *Conservation Biology* 2004, **18**, 189–200.
- Finn, D. S.; Bonada, N.; Múrria, C.; Hughes, J. M. Small but mighty: headwaters are vital to stream network biodiversity at two levels of organization. *Journal of the North American Benthological Society* 2011, **30**, 963–980.
- Finn, D. S.; Poff, N. L. Examining spatial concordance of genetic and species diversity patterns to evaluate the role of dispersal limitation in structuring headwater metacommunities. *Journal of the North American Benthological Society* 2011, **30**, 273–283.
- Fitzpatrick, F. A.; Scudder, B. C.; Lenz, B. N.; Sullivan, D. J. Effects of multi-scale environmental characteristics on agricultural stream biota in eastern Wisconsin. *Journal of the American Water Resources Association* 2001, **37**, 1489–1507.
- Ford, D. F.; Walters, A. D.; Williams, L. R.; Williams, M. G.; Ford, N. B. Mussel assemblages in streams of different sizes in the Neches River Basin of Texas. *Southeastern Naturalist* 2016, **15**, 26–40.

- Gagnon, P. M.; Golladay, S. W.; Michener, W. K.; Freeman, M. C. Drought responses of freshwater mussels (Unionidae) in coastal plain tributaries of the Flint River basin, Georgia. *Journal of Freshwater Ecology* 2004, **19**, 667–679.
- Garcia De Jalón, D.; Mayo, M.; Molles, M. C. Characterization of Spanish Pyrenean stream habitat: relationships between fish communities and their habitat. *Regul. Rivers: Res. Mgmt.* 1996, **12**, 305–316.
- Gehrke, P. C.; Harris, J. H. Large-scale patterns in species richness and composition of temperate riverine fish communities, south-eastern Australia. *Mar. Freshwater Res.* 2000, **51**, 165–182.
- Giberson, D. J.; Mackay, R. J. Life history and distribution of mayflies (Ephemeroptera) in some acid streams in south central Ontario, Canada. *Can. J. Zool.* 1991, **69**, 899–910.
- Giller, P. S.; Twomey, H. Benthic macroinvertebrate community organization in two contrasting rivers: between-site differences and seasonal patterns. *Biology and Environment: Proceedings of the Royal Irish Academy* 1993, **93B**, 115–126.
- Godoy, B. S.; Simião-Ferreira, J.; Lodi, S.; Oliveira, L. G. Functional process zones characterizing aquatic insect communities in streams of the Brazilian Cerrado. *Neotrop. Entomol.* 2016, **45**, 159–169.
- Gustafson, M. P. Effects of thermal regime on mayfly assemblages in mountain streams. *Hydrobiologia* 2008, **605**, 235–246.
- Harding, J. S. Discontinuities in the distribution of invertebrates in impounded south island rivers, New Zealand. *Regul. Rivers: Res. Mgmt.* 1992, **7**, 327–335.
- Heino, J.. Functional diversity of macroinvertebrate assemblages along major ecological gradients of boreal headwater streams. *Freshwater Biology* 2005, **50**, 1578–1587.
- Heino, J.; Muotka, T.; Paavola, R. Determinants of macroinvertebrate diversity in headwater streams: regional and local influences. *Journal of Animal Ecology* 2003, **72**, 425–434.
- Heino, J.; Mykrä, H. Assessing physical surrogates for biodiversity: do tributary and stream type classifications reflect macroinvertebrate assemblage diversity in running waters? *Biological Conservation* 2006, **129**, 418–426.
- Heino, J.; Mykrä, H.; Muotka, T. Temporal variability of nestedness and idiosyncratic species in stream insect assemblages. *Diversity and Distributions* 2009, **15**, 198–206.
- Heino, J.; Mykrä, H.; Rintala, J. Assessing patterns of nestedness in stream insect assemblages along environmental gradients. *Ecoscience* 2010, **17**, 345–355.
- Heino, J.; Paasivirta, L. Unravelling the determinants of stream midge biodiversity in a boreal drainage basin. *Freshwater Biology* 2008, **53**, 884–896.
- Heino, J.; Paavola, R.; Virtanen, R.; Muotka, T. Searching for biodiversity indicators in running waters: do bryophytes, macroinvertebrates, and fish show congruent diversity patterns? *Biodivers Conserv* 2005, **14**, 415–428.

- Heino, J.; Tolkkinen, M.; Pirttilä, A. M.; Aisala, H.; Mykrä, H. Microbial diversity and community–environment relationships in boreal streams. *J. Biogeogr.* 2014, **41**, 2234–2244.
- Henriques-Oliveira, A. L.; Nessimian, J. L. Aquatic macroinvertebrate diversity and composition in streams along an altitudinal gradient in Southeastern Brazil. *Biota Neotropica* 2010, *10*, 115–128.
- Hoagstrom, C. W.; Berry, C. R. Morphological diversity among fishes in a Great Plains river drainage. *Hydrobiologia* 2008, **596**, 367–386.
- Houghton, D. C. The effects of landscape-level disturbance on the composition of Minnesota caddisfly (Insecta: Trichoptera) trophic functional groups: evidence for ecosystem homogenization. *Environ Monit Assess* 2007, **135**, 253–264.
- Hrovat, M.; Urbanič, G.; Sivec, I. Aquatic insects along environmental gradients in a karst river system: a comparative analysis of EPT larvae assemblage components. *International Review of Hydrobiology* 2014, **99**, 222–235.
- Hutchison, M. J. Spatial variation in composition and richness of fish communities in a southwestern Australian river system. *Ecol. Res.* 1993, **8**, 297–311.
- Jacquemin, S. J.; Pyron, M. Impacts of past glaciation events on contemporary fish assemblages of the Ohio River basin. *Journal of Biogeography* 2011, **38**, 982–991.
- Jonsson, B. G. Riparian bryophyte vegetation in the Cascade mountain range, Northwest U.S.A.: patterns at different spatial scales. *Can. J. Bot.* 1997, **75**, 744–761.
- Jonsson, M.; Malmqvist, B.; Hoffsten, P.-O. Leaf litter breakdown rates in boreal streams: does shredder species richness matter? *Freshwater Biology* 2001, **46**, 161–171.
- Jung, S. W.; Nguyen, V. V.; Nguyen, Q. H.; Bae, Y. J. Aquatic insect faunas and communities of a mountain stream in Sapa Highland, northern Vietnam. *Limnology* 2008, **9**, 219–229.
- Kadye, W. T.; Magadza, C. H. D.; Moyo, N. A. G.; Kativu, S. Stream fish assemblages in relation to environmental factors on a montane plateau (Nyika Plateau, Malawi). *Environ Biol Fish* 2008, **83**, 417–428.
- Kalaninová, D.; Bulánková, E.; Šporka, F. Caddisflies (Trichoptera) as good indicators of environmental stress in mountain lotic ecosystems. *Biologia* 2014, **69**, 1030–1045.
- Kanno, Y.; Russ, W. T.; Sutherland, C. J.; Cook, S. B. Prioritizing aquatic conservation areas using spatial patterns and partitioning of fish community diversity in a near-natural temperate basin. *Aquatic Conserv: Mar. Freshw. Ecosyst.* 2012, **22**, 799–812.
- Keller, A.; Rödel, M.-O.; Linsenmair, K. E.; Grafe, T. U. The importance of environmental heterogeneity for species diversity and assemblage structure in Bornean stream frogs. *J Anim Ecol* 2009, **78**, 305–314.
- Kemenes, A.; Forsberg, B. R. Factors influencing the structure and spatial distribution of fishes in the headwater streams of the Jaú River in the Brazilian Amazon. *Braz J Biol* 2014, **74**, 23–32.

- Kemp, S. J.; Spotila, J. R. Effects of urbanization on Brown Trout *Salmo trutta*, other fishes and macroinvertebrates in Valley Creek, Valley Forge, Pennsylvania. *The American Midland Naturalist* 1997, **138**, 55–68.
- Kennedy, M. P.; Lang, P.; Grimaldo, J. T.; Martins, S. V.; Bruce, A.; Hastie, A.; Lowe, S.; Ali, M. M.; Sickingabula, H.; Dallas, H.; Briggs, J.; Murphy, K. J. Environmental drivers of aquatic macrophyte communities in southern tropical African rivers: Zambia as a case study. *Aquatic Botany* 2015, **124**, 19–28.
- Kolmakova, O. V.; Gladyshev, M. I.; Rozanov, A. S.; Peltek, S. E.; Trusova, M. Y. Spatial biodiversity of bacteria along the largest Arctic river determined by next-generation sequencing. *FEMS Microbiol. Ecol.* 2014, **89**, 442–450.
- Kornis, M. S.; Sharma, S.; Jake Vander Zanden, M. Invasion success and impact of an invasive fish, round goby, in Great Lakes tributaries. *Diversity Distrib.* 2013, **19**, 184–198.
- Kuglerová, L.; Jansson, R.; Ågren, A.; Laudon, H.; Malm-Renöfält, B. Groundwater discharge creates hotspots of riparian plant species richness in a boreal forest stream network. *Ecology* 2014, **95**, 715–725.
- Lyautey, E.; Lu, Z.; Lapen, D. R.; Wilkes, G.; Scott, A.; Berkers, T.; Edge, T. A.; Topp, E. Distribution and diversity of *Escherichia coli* populations in the South Nation River drainage basin, eastern Ontario, Canada. *Appl. Environ. Microbiol.* 2010, **76**, 1486–1496.
- Lyons, J. Patterns in the species composition of fish assemblages among Wisconsin streams. *Environ Biol Fish* 1996, **45**, 329–341.
- Macedo, D. R.; Hughes, R. M.; Ligeiro, R.; Ferreira, W. R.; Castro, M. A.; Junqueira, N. T.; Oliveira, D. R.; Firmiano, K. R.; Kaufmann, P. R.; Pompeu, P. S.; Callisto, M. The relative influence of catchment and site variables on fish and macroinvertebrate richness in cerrado biome streams. *Landscape Ecol* 2014, **29**, 1001–1016.
- Magee, T. K.; Ringold, P. L.; Bollman, M. A. Alien species importance in native vegetation along wadeable streams, John Day River basin, Oregon, USA. *Plant Ecol* 2008, **195**, 287–307.
- Malard, F.; Lafont, M.; Burgherr, P.; Ward, J. V. A comparison of longitudinal patterns in hyporheic and benthic Oligochaete assemblages in a glacial river. *Arctic, Antarctic, and Alpine research* 2001, **33**, 457–466.
- Malmqvist, B.; Mäki, M. Benthic macroinvertebrate assemblages in north Swedish streams: environmental relationships. *Ecography* 1994, **17**, 9–16.
- Maltby, L.; Forrow, D. M.; Boxall, A. B. A.; Calow, P.; Betton, C. I. The effects of motorway runoff on freshwater ecosystems: 1. field study. *Environmental Toxicology and Chemistry* 1995, **14**, 1079–1092.
- Martin-Smith, K. M. Effects of disturbance caused by selective timber extraction on fish communities in Sabah, Malaysia. *Environmental Biology of Fishes* 1998, **53**, 155–167.

- Martin-Smith, K. M. Relationships between fishes and habitat in rainforest streams in Sabah, Malaysia. *Journal of Fish Biology* 1998, **52**, 458–482.
- Mehler, K.; Acharya, K.; Sada, D.; Yu, Z. Factors affecting spatiotemporal benthic macroinvertebrate diversity and secondary production in a semi-arid watershed. *Journal of Freshwater Ecology* 2015, **30**, 197–214.
- Melo, A. S.; Froehlich, C. G. Macroinvertebrates in neotropical streams: richness patterns along a catchment and assemblage structure between 2 seasons. *Journal of the North American Benthological Society* 2001, **20**, 1–16.
- Minshall, G. W.; Robinson, C. T. Macroinvertebrate community structure in relation to measures of lotic habitat heterogeneity. *Archiv für Hydrobiologie - Hauptbände* 1998, **141**, 129–151.
- Minton, R. L., White, J. D., Hayes, D. M., Chenoweth, M. S., & Hill, A. M. (2008). Diversity and distribution of freshwater gastropods in the Bayou Bartholomew drainage, Arkansas, USA. *American Malacological Bulletin*, **26**, 171–177.
- Miserendino, M. L. Effects of landscape and desertification on the macroinvertebrate assemblages of rivers in Andean Patagonia. *Archiv für Hydrobiologie - Hauptbände* 2004, **159**, 185–209.
- Molloy, J. M. Diatom communities along stream longitudinal gradients. *Freshwater Biology* 1992, **28**, 59–69.
- Muhlfeld, C. C.; Bennett, D. H.; Marotz, B. Summer habitat use by Columbia River Redband Trout in the Kootenai River Drainage, Montana. *North American Journal of Fisheries Management* 2001, **21**, 223–235.
- Mykrä, H.; Heino, J.; Oksanen, J.; Muotka, T. The stability–diversity relationship in stream macroinvertebrates: influences of sampling effects and habitat complexity. *Freshwater Biology* 2011, **56**, 1122–1132.
- Ndiritu, G. G.; Gichuki, N. N.; Triest, L. Distribution of epilithic diatoms in response to environmental conditions in an urban tropical stream, central Kenya. *Biodivers Conserv* 2006, **15**, 3267–3293.
- Neville, H.; Dunham, J.; Rosenberger, A.; Umek, J.; Nelson, B. Influences of wildfire, habitat size, and connectivity on trout in headwater streams revealed by patterns of genetic diversity. *Transactions of the American Fisheries Society* 2009, **138**, 1314–1327.
- Nolen, M. S.; Magoulick, D. D.; DiStefano, R. J.; Imhoff, E. M.; Wagner, B. K. Predicting probability of occurrence and factors affecting distribution and abundance of three Ozark endemic crayfish species at multiple spatial scales. *Freshw Biol* 2014, **59**, 2374–2389.
- Oberdorff, T.; Guilbert, E.; Lucchetta, J.-C. Patterns of fish species richness in the Seine River basin, France. *Hydrobiologia* 1993, **259**, 157–167.
- Oberdorff, T.; Porcher, J.-P. Fish assemblage structure in Brittany streams (France). *Aquatic Living Resources* 1992, **5**, 215–223.



- Ofenböck, T.; Moog, O.; Car, M. Do the Austrian blackfly fauna (Diptera: Simuliidae) support the typological approach of the EU water framework directive? *Limnologica* 2002, **32**, 255–272.
- Osborne, L. L.; Wiley, M. J. Influence of tributary spatial position on the structure of warmwater fish communities. *Can. J. Fish. Aquat. Sci.* 1992, **49**, 671–681.
- Patrick, C. J. Macroinvertebrate communities of ecotones between the boundaries of streams, wetlands, and lakes. *Fundamental and Applied Limnology* 2014, **185**, 223–233.
- Pease, A. A.; González-Díaz, A. A.; Rodiles-Hernández, R.; Winemiller, K. O. Functional diversity and trait–environment relationships of stream fish assemblages in a large tropical catchment. *Freshwater Biology* 2012, **57**, 1060–1075.
- Pease, A. A.; Taylor, J. M.; Winemiller, K. O.; King, R. S. Ecoregional, catchment, and reach-scale environmental factors shape functional-trait structure of stream fish assemblages. *Hydrobiologia* 2015, **753**, 265–283.
- Pérez-Reyes, O.; Crowl, T. A.; Covich, A. P. Comparison of decapod communities across an urban-forest land use gradient in Puerto Rican streams. *Urban Ecosyst* 2016, **19**, 181–203.
- Piirsoo, K. Species diversity of phytoplankton in Estonian streams. *Cryptogamie. Algologie* 2003, **24**, 145–165.
- Pivnicka, K.; Poupe, J.; Svatora, M. Fish species-diversity in small Czech and Moravian streams. *Zivocisna Vyroba* 1995, **40**, 177–180.
- Pramual, P.; Kuvangkadilok, C. Agricultural land use and black fly (Diptera, Simuliidae) species richness and species assemblages in tropical streams, Northeastern Thailand. *Hydrobiologia* 2009, **625**, 173–184.
- Przybylski, M. Longitudinal pattern in fish assemblages in the Upper Warta River, Poland. *Archiv für.* 1993, **126**, 499–512.
- Raghavan, R.; Prasad, G.; Anvar Ali, P. H.; Pereira, B. Fish fauna of Chalakudy River, part of Western Ghats biodiversity hotspot, Kerala, India: patterns of distribution, threats and conservation needs. *Biodiversity and Conservation* 2008, **17**, 3119–3131.
- Rahel, F. J.; Hubert, W. A. Fish assemblages and habitat gradients in a Rocky Mountain–Great Plains stream: biotic zonation and additive patterns of community change. *Transactions of the American Fisheries Society* 1991, **120**, 319–332.
- Ramchunder, S. J.; Brown, L. E.; Holden, J.; Langton, R. Spatial and seasonal variability of peatland stream ecosystems. *Ecohydrol.* 2011, **4**, 577–588.
- Reece, P. F.; Richardson, J. S. Benthic macroinvertebrate assemblages of coastal and continental streams and large rivers of southwestern British Columbia, Canada. *Hydrobiologia* 2000, **439**, 77–89.
- Reid, S. M.; Yunker, G.; Jones, N. E. Evaluation of single-pass backpack electric fishing for stream fish community monitoring. *Fisheries Management and Ecology* 2009, **16**, 1–9.

- Reyes-Gavilán, F. G.; Garrido, R.; Nicieza, A. G.; Toledo, M. M.; Braña, F. Fish community variation along physical gradients in short streams of northern Spain and the disruptive effect of dams. *Hydrobiologia* 1996, **321**, 155–163.
- Reyjol, Y.; Compin, A. A.-I.; Lim, P. Longitudinal diversity patterns in streams: comparing invertebrates and fish communities. *Archiv für Hydrobiologie - Hauptbände* 2003, **157**, 525–533.
- Robinson, J. L.; Rand, P. S. Discontinuity in fish assemblages across an elevation gradient in a southern Appalachian watershed, USA. *Ecology of Freshwater Fish* 2005, **14**, 14–23.
- Salvarrey, A. V. B.; Kotzian, C. B.; Spies, M. R.; Braun, B. The influence of natural and anthropic environmental variables on the structure and spatial distribution along longitudinal gradient of macroinvertebrate communities in southern Brazilian streams. *J Insect Sci* 2014, **14**.
- Sandin, L.; Johnson, R. K. Ecoregions and benthic macroinvertebrate assemblages of Swedish streams. *Journal of the North American Benthological Society* 2000, **19**, 462–474.
- Santos, A. N.; Stevenson, R. D. Comparison of macroinvertebrate diversity and community structure among perennial and non-perennial headwater streams. *Northeastern Naturalist* 2011, **18**, 7–26.
- Savić, A.; Randelović, V.; Dordević, M.; Pešić, V. Assemblages of freshwater snails (Mollusca: Gastropoda) from the Nišava River, Serbia: ecological factors defining their structure and spatial distributions. *Acta Zoologica Bulgarica* 2016, **68**, 235–242.
- Savio, D.; Sinclair, L.; Ijaz, U. Z.; Parajka, J.; Reischer, G. H.; Stadler, P.; Blaschke, A. P.; Blöschl, G.; Mach, R. L.; Kirschner, A. K.; Farnleitner, A. H.; Eiler, A. Bacterial diversity along a 2600 km river continuum. *Environmental Microbiology* 2015, **17**, 4994–5007.
- Schaefer, J. F.; Clark, S. R.; Warren, M. L. J. Diversity and stability in Mississippi stream fish assemblages. *Freshwater Science* 2012, **31**, 882–894.
- Scott, R. W.; Barton, D. R.; Evans, M. S.; Keating, J. J. Latitudinal gradients and local control of aquatic insect richness in a large river system in northern Canada. *Journal of the North American Benthological Society* 2011, **30**, 621–634.
- Shearer, C. A.; Webster, J. Aquatic hyphomycete communities in the river Teign. IV: twig colonization. *Mycological research* 1991, **95**, 413–420.
- Sheldon, A. L. 1968. Species diversity and longitudinal succession in stream fishes. *Ecology* 49:193–198.
- Sheldon, A. L.; Grubbs, S. A. Distributional ecology of a rare, endemic stonefly. *Freshwater Science* 2014, **33**, 1119–1126.
- Sheldon, A. L.; Warren, L. M. Filters and templates: stonefly (Plecoptera) richness in Ouachita Mountains streams, U.S.A. *Freshwater Biology* 2009, **54**, 943–956.
- Simanonok, M. P.; Anderson, C. B.; Martínez Pastur, G.; Lencinas, M. V.; Kennedy, J. H. A comparison of impacts from silviculture practices and North American beaver invasion on stream benthic

macroinvertebrate community structure and function in Nothofagus forests of Tierra del Fuego. *Forest Ecology and Management* 2011, **262**, 263–269.

- Simonović, P.; Povž, M.; Piria, M.; Treer, T.; Adrović, A.; Škrijelj, R.; Nikolić, V.; Simić, V. Ichthyofauna of the River Sava System. In *The Sava River: The Handbook of Environmental Chemistry*; Springer Berlin Heidelberg, 2015; pp. 361–400.
- Stenger-Kovács, C.; Tóth, L.; Tóth, F.; Hajnal, É.; Padisák, J. Stream order-dependent diversity metrics of epilithic diatom assemblages. *Hydrobiologia* 2014, **721**, 67–75.
- Stevenson, R. J.; White, K. D. A comparison of natural and human determinants of phytoplankton communities in the Kentucky River basin, USA. *Hydrobiologia* 1995, **297**, 201–216.
- Súarez, Y. R.; Valério, S. B.; Tondado, K. K.; Florentino, A. C.; Felipe, T. R. A.; Ximenes, L. Q. L.; Lourenço, L. da S. Fish species diversity in headwaters streams of Paraguay and Paraná Basins. *Brazilian Archives of Biology and Technology* 2007, **50**, 1033–1042.
- Sylvestre, S.; Bailey, R. C. Ecology of leaf pack macroinvertebrate communities in streams of the Fraser River Basin, British Columbia. *Freshwater Biology* 2005, **50**, 1094–1104.
- Szoszkiewicz, K.; Ciecierska, H.; Kolada, A.; Schneider, S. C.; Szwabińska, M.; Ruszczyńska, J. Parameters structuring macrophyte communities in rivers and lakes – results from a case study in North-Central Poland. *Knowl. Managt. Aquatic Ecosyst.* 2014, **8**.
- Taylor, C. M.; Holder, T. L.; Fiorillo, R. A.; Williams, L. R.; Thomas, R. B.; Warren, M. L. Jr. Distribution, abundance, and diversity of stream fishes under variable environmental conditions. *Can. J. Fish. Aquat. Sci.* 2006, **63**, 43–54.
- Teresa, F. B.; Romero, R. de M. Influence of the riparian zone phytophysionomies on the longitudinal distribution of fishes: evidence from a Brazilian savanna stream. *Neotropical Ichthyology* 2010, **8**, 163–170.
- Terrado, M.; Sabater, S.; Chaplin-Kramer, B.; Mandle, L.; Ziv, G.; Acuña, V. Model development for the assessment of terrestrial and aquatic habitat quality in conservation planning. *Science of the Total Environment* 2016, **540**, 63–70.
- Terui, A.; Miyazaki, Y. Three ecological factors influencing riverine fish diversity in the Shubuto River system, Japan: habitat capacity, habitat heterogeneity and immigration. *Limnology* 2016, **17**, 143–149.
- Usseglio-Polatera, P.; Beisel, J.-N. Longitudinal changes in macroinvertebrate assemblages in the Meuse River: anthropogenic effects versus natural change. *River Res. Applic.* 2002, **18**, 197–211.
- Vieira, T. B.; Tejerina-Garro, F. L. Assessment of fish assemblages in streams of different orders in the Upper Paraná River basin, Central Brazil. *Iheringia Série Zoologia* 2014, **104**, 175–183.
- Vitorino, O.; Fernandes, R.; Agostinho, C. S.; Pelicice, F. Riverine networks constrain beta-diversity patterns among fish assemblages in a large neotropical river. *Freshwater Biology* 2016, **61**, 1733–1745.

- Walrath, J. D.; Dauwalter, D. C.; Reinke, D. Influence of stream condition on habitat diversity and fish assemblages in an impaired Upper Snake River Basin watershed. *Transactions of the American Fisheries Society* 2016, **145**, 821–834.
- Whiteside, B. G.; McNatt, R. M. Fish species diversity in relation to stream Ooder and physicochemical conditions in the Plum Creek Drainage Basin. *The American Midland Naturalist* 1972, **88**, 90–101.
- Xenopoulos, M. A.; Lodge, D. M. Going with the flow: using species-discharge relationships to forecast losses in fish biodiversity. *Ecology* 2006, **87**, 1907–1914.
- Ya’cob, Z.; Takaoka, H.; Pramual, P.; Low, V. L.; Sofian-Azirun, M. Distribution pattern of black fly (Diptera: Simuliidae) assemblages along an altitudinal gradient in Peninsular Malaysia. *Parasite Vectors* 2016, **9**, 219.
- Yan, Y.; He, S.; Chu, L.; Xiang, X.; Jia, Y.; Tao, J.; Chen, Y. Spatial and temporal variation of fish assemblages in a subtropical small stream of the Huangshan Mountain. *Current Zoology* 2010, **56**, 670–677.
- Zampella, R. A.; Bunnell, J. F. Use of Reference-Site Fish Assemblages to Assess Aquatic Degradation in Pinelands Streams. *Ecological Applications* 1998, **8**, 645–658.
- Zhang, Y.; Liu, L.; Cheng, L.; Cai, Y.; Yin, H.; Gao, J.; Gao, Y. Macroinvertebrate assemblages in streams and rivers of a highly developed region (Lake Taihu Basin, China). *Aquatic Biology* 2014, **23**, 15–28.