References

- Aarhus University. 2018. Greenland Ecosystem Monitoring Database. http://data.g-e-m.dk/.
- Aebischer, N. J. 1990. Assessing pesticide effects on non-target invertebrates using long-term monitoring and time-series modelling. Functional Ecology 4:369–373.
- Aguila, G., D. Pujoni, M. Marques, L. Santos, N. Dornelas, K. Andrade, I. Monteiro, P. Maia-Barbosa, F. Barbosa, G. E. N. Aguila, D. G. F. Pujoni, M. M. Marques, L. G. C. Santos, N. M. de L. Dornelas, K. Andrade, I. M. Monteiro, P. M. Maia-Barbosa, and F. A. R. Barbosa. 2018. Benthic Macroinvertebrate Diversity in the Middle Doce River Basin, Brazil. Data 3:17.
- Aleksevnina, M. S., and E. V. Presnova. 2017. Changes in the benthocenoses structure if the Votinskoe reservoir during its existence (1964–2014). Vestnik Permskogo Universiteta. Ser. Biology.:328–332.
- Ananin, A. A., and T. L. Ananina. 2011. Long-term dynamics of birds and ground beetles population density in catena of Barguzinskiy Ridge (Northern Pribaikalye) [in Russian]. Izvestia Samarskogo Nauchnogo Centra Rossiiskoi Akademii Nauk (Proceedings of Samara Research Branch of the Russian Academy of Sciences) 1:1041–1044.
- Babenko, A. B. 2013. "Collembola of the Western Taimyr:" Forty years later. Entomological Review 93:737–754.
- Baranovskaya, V. 1976. Zooplankton of the Harbei lakes of the Bolshezemelskaya tundra. (in Russian). Pages 90–101 *in* G. Vinberg and T. Vlasova, editors. Efficiency of the lakes of the eastern part of Bolshezemelskaya tundra. Nauka Publ, Leningrad.
- Baturina, M. A., O. N. Kononova, E. B. Fefilova, B. Y. Teteryuk, E. Patova, A. Stenina, and I. Sterlyagova. 2017. Present state of biota of small Komi Republic reservoirs. Journal of Siberian Federal University. Biology. 10:422–445.
- Baturina, M. A., O. A. Loskutova, E. B. Fefilova, and L. G. Khokhlova. 2012. Zoobenthos of lake Bolshoi Kharbei (Bolshezemelskaya Tundra): modern state and analysis of retrospective data (In Russian). Izvestia Komi Scientific Centre of The Ural Branch of Russian Academy of Sciences. 4:21–29.
- Bêche, L. A., and V. H. Resh. 2007. Short-term climatic trends affect the temporal variability of macroinvertebrates in California 'Mediterranean' streams. Freshwater Biology 52:2317–2339.
- Belovsky, G. 2018. Grasshopper density. https://belovskylab.nd.edu/national-bison-range-ltreb-database/survey-data/grasshopper-data/.
- Benton, T. G., D. M. Bryant, L. Cole, and H. Q. P. Crick. 2002. Linking agricultural practice to insect and bird populations: a historical study over three decades. Journal of Applied Ecology 39:673–687.
- Bezmaternykh, D. M., K. V. Chernyshkova, and K. V. Marusin. 2008. Modern condition and long-term dynamics of zoobenthos of lake Chany. Problemy Regionalnoi Ekologii 6:43–48.
- Bisevac, L., and J. D. Majer. 1999. Comparative Study of Ant Communities of Rehabilitated Mineral Sand Mines and Heathland, Western Australia. Restoration Ecology 7:117–126.

- Blanchet, F. G., T. Roslin, M. T. Kimura, T. Huotari, R. Kaartinen, S. Gripenberg, and A. J. M. Tack. 2018a. Related herbivore species show similar temporal dynamics. Journal of Animal Ecology 87:801–812.
- Blanchet, F., T. Roslin, M. Kimura, T. Huotari, R. Kaartinen, S. Gripenberg, and A. Tack. 2018b. Data from: Related herbivore species show similar temporal dynamics. https://doi.org/10.5061/dryad.sh02b.
- Blandenier, G., O. T. Bruggisser, and L.-F. Bersier. 2014. Do spiders respond to global change? A study on the phenology of ballooning spiders in Switzerland. Écoscience 21:79–95.
- Bowler, D. E., C. Hof, P. Haase, I. Kröncke, O. Schweiger, R. Adrian, L. Baert, H.-G. Bauer, T. Blick, R. W. Brooker, W. Dekoninck, S. Domisch, R. Eckmann, F. Hendrickx, T. Hickler, S. Klotz, A. Kraberg, I. Kühn, S. Matesanz, A. Meschede, H. Neumann, B. O'Hara, D. Russell, A. F. Sell, M. Sonnewald, S. Stoll, A. Sundermann, O. Tackenberg, M. Türkay, F. Valladares, K. van Herk, R. van Klink, R. Vermeulen, K. Voigtländer, R. Wagner, E. Welk, M. Wiemers, K. H. Wiltshire, and K. Katrin Böhning-Gaese. 2017. Cross-realm assessment of climate-change impacts on species' abundance trends. Nature Ecology and Evolution 1:1–7.
- Bradt, P., M. Urban, N. Goodman, S. Bissell, and I. Spiegel. 1999. Stability and resilience in benthic macroinvertebrate assemblages. Hydrobiologia 403:123–133.
- Brown, P. M. J., and H. E. Roy. 2018. Native ladybird decline caused by the invasive harlequin ladybird Harmonia axyridis: evidence from a long-term field study. Insect Conservation and Diversity 11:230–239.
- Brunk, K. M., M. R. Vinson, D. H. Ogle, and L. M. Evrard. 2014. Burrowing mayfly populations in Chequamegon Bay, Wisconsin: 2002 and 2012. Journal of Freshwater Ecology 29:337–344.
- Cai, Y., Y. Lu, and Z. Gong. 2015. Changes in macrozoobenthic assemblages in a shallow subtropical lake (Lake Taihu, China): 1987–1988 vs. 2007. Journal of Freshwater Ecology 30:157–168.
- Chen, I.-C., J. K. Hill, H.-J. Shiu, J. D. Holloway, S. Benedick, V. K. Chey, H. S. Barlow, and C. D. Thomas. 2011. Asymmetric boundary shifts of tropical montane Lepidoptera over four decades of climate warming. Global Ecology and Biogeography 20:34–45.
- Chernenkova, T. V., O. V. Butusov, V. V. Sychev, G. G. Konev, R. R. Kabirov, A. M. Stepanov, R. G. Kuperman, and G. D. Kataev. 1995. The impact of metallurgical production on forest ecosystems of the Kola Peninsula. SPb. Publishing house, Rodniki.
- Clements, W. H., N. K. M. Vieira, and S. E. Church. 2010. Quantifying restoration success and recovery in a metal-polluted stream: a 17-year assessment of physicochemical and biological responses. Journal of Applied Ecology 47:899–910.
- Crosa, G., L. Yaméogo, D. Calamari, F. Kondé, and K. Nabé. 2001. Effects of larvicide treatment on invertebrate communities of Guinean rivers, West Africa. Hydrobiologia 458:151–158.
- Crowley, P. H., and D. M. Johnson. 1992. Variability and stability of a dragonfly assemblage. Oecologia 90:260–269.
- Cuesta, E., and J. M. Lobo. 2019. A comparison of dung beetle assemblages (Coleoptera,

- Scarabaeoidea) collected 34 years apart in an Iberian mountain locality. Journal of Insect Conservation 23:101–110.
- Daghighi, E., H. Koehler, R. Kesel, and J. Filser. 2017. Long-term succession of Collembola communities in relation to climate change and vegetation. Pedobiologia 64:25–38.
- van dam, H. 2009. Evaluatie basismeetnet waterkwaliteit Hollands Noorderkwartier: Trendanalyse hydrobiology, temperatuur en waterchemie 1982–2007. Edam, The Netherlands.
- Doran, N. E., J. Balmer, M. Driessen, R. Bashford, S. Grove, A. M. Richardson, J. Griggs, and D. Ziegeler. 2003. Moving with the times: baseline data to gauge future shifts in vegetation and invertebrate altitudinal assemblages due to environmental change. Organisms Diversity & Evolution 3:127–149.
- Dornelas, M., L. H. Antão, F. Moyes, A. E. Bates, A. E. Magurran, D. Adam, A. A. Akhmetzhanova, W. Appeltans, J. M. Arcos, H. Arnold, N. Ayyappan, G. Badihi, A. H. Baird, M. Barbosa, T. E. Barreto, C. Bässler, A. Bellgrove, J. Belmaker, L. Benedetti-Cecchi, B. J. Bett, A. D. Bjorkman, M. Błażewicz, S. A. Blowes, C. P. Bloch, T. C. Bonebrake, S. Boyd, M. Bradford, A. J. Brooks, J. H. Brown, H. Bruelheide, P. Budy, F. Carvalho, E. Castañeda-Moya, C. A. Chen, J. F. Chamblee, T. J. Chase, L. Siegwart Collier, S. K. Collinge, R. Condit, E. J. Cooper, J. H. C. Cornelissen, U. Cotano, S. Kyle Crow, G. Damasceno, C. H. Davies, R. A. Davis, F. P. Day, S. Degraer, T. S. Doherty, T. E. Dunn, G. Durigan, J. E. Duffy, D. Edelist, G. J. Edgar, R. Elahi, S. C. Elmendorf, A. Enemar, S. K. M. Ernest, R. Escribano, M. Estiarte, B. S. Evans, T. Y. Fan, F. Turini Farah, L. Loureiro Fernandes, F. Z. Farneda, A. Fidelis, R. Fitt, A. M. Fosaa, G. A. Daher Correa Franco, G. E. Frank, W. R. Fraser, H. García, R. Cazzolla Gatti, O. Givan, E. Gorgone-Barbosa, W. A. Gould, C. Gries, G. D. Grossman, J. R. Gutierréz, S. Hale, M. E. Harmon, J. Harte, G. Haskins, D. L. Henshaw, L. Hermanutz, P. Hidalgo, P. Higuchi, A. Hoey, G. Van Hoey, A. Hofgaard, K. Holeck, R. D. Hollister, R. Holmes, M. Hoogenboom, C. hao Hsieh, S. P. Hubbell, F. Huettmann, C. L. Huffard, A. H. Hurlbert, N. Macedo Ivanauskas, D. Janík, U. Jandt, A. Jażdżewska, T. Johannessen, J. Johnstone, J. Jones, F. A. M. Jones, J. Kang, T. Kartawijaya, E. C. Keeley, D. A. Kelt, R. Kinnear, K. Klanderud, H. Knutsen, C. C. Koenig, A. R. Kortz, K. Král, L. A. Kuhnz, C. Y. Kuo, D. J. Kushner, C. Laguionie-Marchais, L. T. Lancaster, C. Min Lee, J. S. Lefcheck, E. Lévesque, D. Lightfoot, F. Lloret, J. D. Lloyd, A. López-Baucells, M. Louzao, J. S. Madin, B. Magnússon, S. Malamud, I. Matthews, K. P. McFarland, B. McGill, D. McKnight, W. O. McLarney, J. Meador, P. L. Meserve, D. J. Metcalfe, C. F. J. Meyer, A. Michelsen, N. Milchakova, T. Moens, E. Moland, J. Moore, C. Mathias Moreira, J. Müller, G. Murphy, I. H. Myers-Smith, R. W. Myster, A. Naumov, F. Neat, J. A. Nelson, M. Paul Nelson, S. F. Newton, N. Norden, J. C. Oliver, E. M. Olsen, V. G. Onipchenko, K. Pabis, R. J. Pabst, A. Paquette, S. Pardede, D. M. Paterson, R. Pélissier, J. Peñuelas, A. Pérez-Matus, O. Pizarro, F. Pomati, E. Post, H. H. T. Prins, J. C. Priscu, P. Provoost, K. L. Prudic, E. Pulliainen, B. R. Ramesh, O. Mendivil Ramos, A. Rassweiler, J. E. Rebelo, D. C. Reed, P. B. Reich, S. M. Remillard, A. J. Richardson, J. P. Richardson, I. van Rijn, R. Rocha, V. H. Rivera-Monroy, C. Rixen, K. P. Robinson, R. Ribeiro Rodrigues, D. de Cerqueira Rossa-Feres, L. Rudstam, H. Ruhl, C. S. Ruz, E. M. Sampaio, N. Rybicki, A. Rypel, S. Sal, B. Salgado, F. A. M. Santos, A. P. Savassi-Coutinho, S. Scanga, J. Schmidt, R. Schooley, F. Setiawan, K. T. Shao, G. R. Shaver, S. Sherman, T. W. Sherry, J. Siciński, C. Sievers, A. C. da Silva, F. Rodrigues da Silva, F. L. Silveira, J. Slingsby, T. Smart, S. J. Snell, N. A. Soudzilovskaia, G. B. G. Souza, F. Maluf Souza, V. Castro Souza, C. D. Stallings, R. Stanforth, E. H. Stanley, J. Mauro

- Sterza, M. Stevens, R. Stuart-Smith, Y. Rondon Suarez, S. Supp, J. Yoshio Tamashiro, S. Tarigan, G. P. Thiede, S. Thorn, A. Tolvanen, M. Teresa Zugliani Toniato, Ø. Totland, R. R. Twilley, G. Vaitkus, N. Valdivia, M. I. Vallejo, T. J. Valone, C. Van Colen, J. Vanaverbeke, F. Venturoli, H. M. Verheye, M. Vianna, R. P. Vieira, T. Vrška, C. Quang Vu, L. Van Vu, R. B. Waide, C. Waldock, D. Watts, S. Webb, T. Wesołowski, E. P. White, C. E. Widdicombe, D. Wilgers, R. Williams, S. B. Williams, M. Williamson, M. R. Willig, T. J. Willis, S. Wipf, K. D. Woods, E. J. Woehler, K. Zawada, and M. L. Zettler. 2018. BioTIME: A database of biodiversity time series for the Anthropocene. Global Ecology and Biogeography 27:760–786.
- Driessen, M. M. 2016. Are Moorland Invertebrates Resilient to Fire? University of Tasmania.
- Durance, I., and S. J. Ormerod. 2007. Climate change effects on upland stream macroinvertebrates over a 25-year period. Global Change Biology 13:942–957.
- Ellison, A. M. 2017. Ant Assemblages in Hemlock Removal Experiment at Harvard Forest since 2003. HF118. http://pasta.lternet.edu/package/doi/eml/knb-lter-hfr/118/30.
- Ernest, S. K. M. 2018. Portal Ant Data. https://github.com/weecology/PortalData/tree/master/Ants.
- Fedyunin, V. A. 2008. On population dynamics of Ichneumon flies in the Visim Reserve. Russian Journal of Ecology 39:225–228.
- Fefilova, E. B., M. A. Baturina, O. N. Kononova, O. A. Loskutova, L. G. Khokhlova, and O. P. Dubovskaya. 2014. Long-Term Changes of Aquatic Communities in the Kharbeyskie Lakes. Journal of Siberian Federal University. Biology. 3:240–266.
- Field, E. N., R. E. Tokarz, and R. C. Smith. 2019. Satellite Imaging and Long-Term Mosquito Surveillance Implicate the Influence of Rapid Urbanization on Culex Vector Populations. Insects 10:269.
- Gallé, L. 2017. Climate change impoverishes and homogenizes ants' community structure: a long term study. Community Ecology 18:128–136.
- Gandhi, K. J. K., M. E. Epstein, J. J. Koehle, and F. F. Purrington. 2011. A quarter of a century succession of epigaeic beetle assemblages in remnant habitats in an urbanized matrix (Coleoptera, Carabidae). ZooKeys 147:667–689.
- Gardarsson, A., Á. Einarsson, G. M. Gíslason, T. Hrafnsdóttir, H. R. Ingvason, E. Jónsson, and J. S. Ólafsson. 2004. Population fluctuations of chironomid and simuliid Diptera at Myvatn in 1977–1996. Aquatic Ecology 38:209–217.
- Giraldo-Calderón, G. I., S. J. Emrich, R. M. MacCallum, G. Maslen, S. Emrich, F. Collins, E. Dialynas, P. Topalis, N. Ho, S. Gesing, G. Madey, F. H. Collins, D. Lawson, P. Kersey, J. Allen, M. Christensen, D. Hughes, G. Koscielny, N. Langridge, E. L. Gallego, K. Megy, D. Wilson, B. Gelbart, D. Emmert, S. Russo, P. Zhou, G. Christophides, A. Brockman, I. Kirmitzoglou, B. MacCallum, T. Tiirikka, K. Louis, V. Dritsou, E. Mitraka, M. Werner-Washburn, P. Baker, H. Platero, A. Aguilar, S. Bogol, D. Campbell, R. Carmichael, D. Cieslak, G. Davis, N. Konopinski, J. Nabrzyski, C. Reinking, A. Sheehan, S. Szakonyi, and R. Wieck. 2015. VectorBase: An updated Bioinformatics Resource for invertebrate vectors and other organisms related with human diseases. Nucleic Acids Research 43:D707–D713.
- Golovatyuk, L. V., and E. V. Abrosimova. 2015. Composition, distribution and structural

- indicators of the donal communities of the fractal river basin of the lower Volga (on the example of the Sok river). Vestnik Tambovskogo universiteta. Seriya: Estestvennye i tekhnicheskie nauki 20:1579–1585.
- Gran, O., and F. Götmark. 2019. Long-term experimental management in Swedish mixed oak-rich forests has a positive effect on saproxylic beetles after 10 years. Biodiversity and Conservation 28:1451–1472.
- Grechanichenko, T. 2014. Linear and cyclic long-term trends in the dynamics of ground beetles activity (Carabidae, Coleoptera). Aktualnye problemy gumanitarnyh i estestvennyh nauk 4–1:44–49.
- Grimm, N., and D. Childers. 2018. Long-term monitoring of ground-dwelling arthropods in central Arizona–Phoenix, ongoing since 1998. https://doi.org/10.6073/pasta/74d30fdbb17e0f76b54548ce74bf27e4.
- Grimm, N., S. Fisher, J. Bessler, R. Bills, T. Blaine, A. Boulton, J. Cetin, S. Clinton, T. Colella, A. Corbett, L. Dent, K. Donovan, L. Downs, N. Drake, T. Dudley, J. Edmonds, S. Ford, C. Fredrickson, J. Freeman, J. Gavin, A. Goettl, R. Gómez, D. Greene, K. Grove, B. Harper, J. Henry, S. Holland, B. Holmes, J. Hunter, A. Jackson, J. Jones, C. Kochert, T. Main, M. Mallett, E. Martí, A. Millan, M. Murphy, M. Myers, M. Naegeli, R. Peralta, B. Peterson, C. Peterson, K. Petrone, S. Rector, J. Roach, J. Schade, A. Schrot, J. Seddon, R. Sponseller, E. Stanley, K. Stinchfield, M. Tseng, M. Valett, J. Velasco, J. Welter, D. Wood, J. Zachary, and W. Zhu. 2007. Sycamore Creek macroinvertebrate collections after flooding event. https://sustainability.asu.edu/caplter/data/view/knb-lter-cap.375.8/.
- Groker, G. 2018. National River Water Quality Network Database (Macro-invertebrates). https://www.gbif.org/dataset/356d85af-c952-4b16-b036-b2ec3181f317#citation.
- Grøtan, V., R. Lande, I. A. Chacon, and P. J. Devries. 2014. Seasonal cycles of diversity and similarity in a Central American rainforest butterfly community. Ecography 37:509–516.
- Grøtan, V., R. Lande, S. Engen, B. E. Sæther, and P. J. Devries. 2012. Seasonal cycles of species diversity and similarity in a tropical butterfly community. Journal of Animal Ecology 81:714–723.
- Grubaugh, J. W., and J. B. Wallace. 1995. Functional structure and production of the benthic community in a Piedmont river: 1956-1957 and 1991-1992. Limnology and Oceanography 40:490–501.
- Gryuntal, S. Y. 2008. Organization of communities of ground beetles (Coleoptera; Carabidae) in forest biocoenoses of East-European (Russian) Plain. Gallea-Print, Moscow.
- Guo, Y., S. Lai, J. Zhang, Q. Liu, H. Zhang, Z. Ren, D. Mao, C. Luo, Y. He, H. Wu, G. Li, D. Ren, X. Liu, and Z. Chang. 2018. Mosquito population dynamics during the construction of Three Gorges Dam in Yangtze River, China. Acta Tropica 182:251–256.
- Guseva, O. G. 2017. Rove beetles (Coleoptera, Staphylindae) in agricultural landscape of Leningrad region. Plant Protection News 94:39–42.
- Gutiérrez-Fonseca, P. E., A. Ramírez, and C. M. Pringle. 2018. Large-scale climatic phenomena drive fluctuations in macroinvertebrate assemblages in lowland tropical

- streams, Costa Rica: The importance of ENSO events in determining long-term (15y) patterns. PLoS ONE 13:e0191781.
- Hallmann, C. A., M. Sorg, E. Jongejans, H. Siepel, N. Hofland, H. Schwan, W. Stenmans, A. Müller, H. Sumser, T. Hörren, D. Goulson, and H. De Kroon. 2017. More than 75 percent decline over 27 years in total flying insect biomass in protected areas. PLoS ONE.
- Hallmann, C. A., T. Zeegers, R. Van Klink, R. Vermeulen, P. Wielink, H. Spijkers, J. Van Deijk, W. Van Steenis, and E. Jongejans. 2020. Declining abundance of beetles, moths and caddisflies in the Netherlands. Insect Conservation and Diversity 13:127–139.
- Hann, B. J., M. J. Wishart, and S. B. Watson. 2017. Long-term trends in benthic invertebrate populations (1929–2013) in Lake Winnipeg. Journal of Great Lakes Research 43:938–952.
- Hassall, C., J. Owen, and F. Gilbert. 2017. Phenological shifts in hoverflies (Diptera: Syrphidae): linking measurement and mechanism. Ecography 40:853–863.
- Haynes, J. M., T. W. Stewart, and G. E. Cook. 1999. Benthic Macroinvertebrate Communities in Southwestern Lake Ontario Following Invasion of Dreissena: Continuing Change. Journal of Great Lakes Research 25:828–838.
- Herbst, D. B., R. B. Medhurst, and N. J. P. Black. 2018. Long-term effects and recovery of streams from acid mine drainage and evaluation of toxic metal threshold ranges for macroinvertebrate community reassembly. Environmental Toxicology and Chemistry 37:2575–2592.
- Hodecek, J., T. Kuras, J. Sipos, and A. Dolny. 2015. Post-industrial areas as successional habitats: Long-term changes of functional diversity in beetle communities. Basic and Applied Ecology 16:629–640.
- Holmes, R. 2018. Long-term trends in abundance of Lepidoptera larvae at Hubbard Brook Experimental Forest and three additional northern hardwood forest sites, 1986 1997. http://data.hubbardbrook.org/data/dataset.php?id=82.
- Homburg, K., C. Drees, E. Boutaud, D. Nolte, W. Schuett, P. Zumstein, E. Ruschkowski, and T. Assmann. 2019. Where have all the beetles gone? Long-term study reveals carabid species decline in a nature reserve in Northern Germany. Insect Conservation and Diversity 12:268–277.
- Honek, A., Z. Martinkova, P. Kindlmann, O. M. C. C. Ameixa, and A. F. G. Dixon. 2014. Long-term trends in the composition of aphidophagous coccinellid communities in Central Europe. Insect Conservation and Diversity 7:55–63.
- Hu, G., K. S. Lim, N. Horvitz, S. J. Clark, D. R. Reynolds, N. Sapir, and J. W. Chapman. 2016. Mass seasonal bioflows of high-flying insect migrants. Science 354:1584–1587.
- Huttunen, K.-L., H. Mykrä, J. Oksanen, A. Astorga, R. Paavola, and T. Muotka. 2017. Habitat connectivity and in-stream vegetation control temporal variability of benthic invertebrate communities. Scientific Reports 7:1448.
- Iowa Mosquito Surveillance. 2019. Iowa Mosquito Surveillance. https://mosquito.ent.iastate.edu/.
- Irish National Biodiversity Data Centre. 2018. Irish Butterfly Monitoring Scheme.

- Occurrence dataset. https://doi.org/10.15468/4wwpyc.
- Istomina, A. M. 2017. Current state of macrobenthos of Kama and Votinsk reservoirs. Vestnik Permskogo Universiteta. Ser. Biology.:279–287.
- Joern, A. 2016. CGR02 Sweep Sampling of Grasshoppers on Konza Prairie LTER watersheds (1982-present). https://portal.lternet.edu/nis/mapbrowse?packageid=knb-lter-knz.29.9.
- Johnson, P. D., K. M. Brown, and C. V. Covell, 1994. A Comparison of the Macroinvertebrate Assemblage in Doe Run Creek, Kentucky: 1960 and 1990. Journal of the North American Benthological Society 13:496–510.
- Johnson, R. L., and G. L. Harp. 2005. Spatio-temporal changes of benthic macroinvertebrates in a cold Arkansas tailwater. Hydrobiologia 537:15–24.
- Karg, J., K. Kujawa, C. Manhart, H. Marschalek, K. R. Neugebauer, and J. Sachteleben. 2015. Restoration of Subalpine Species-Rich Grasslands: Short-Term vs Long-Term Changes in the Density and Diversity of above-Ground Insects. Polish Journal of Ecology 63:142–158.
- Kashulin, N. A., D. B. Denisov, S. A. Valkova, O. I. Vandysh, and P. M. Terentjev. 2012. The modern tendencies of modification of frehs water ecosystems of the Euro-arctic region. Proceedings of the Kola Scientific Center of the Russian Academy of Sciences. 1:7–54.
- Van Klink, R., J. Lepš, R. Vermeulen, and F. de Bello. 2019. Functional differences stabilize beetle communities by weakening interspecific temporal synchrony. Ecology 100:1–11.
- Knops, J. M. H., and D. G. Tilman. 2006. Core Old Field Grasshopper Sampling. https://www.cedarcreek.umn.edu/research/data/dataset?ghe014.
- Kočíková, L., A. Čanády, and L. Panigaj. 2014. Change in a butterfly community on a gradually overgrowing site. Russian Journal of Ecology 45:391.
- Korobov, E. D. 2015. The influence of windfall disturbances on the structure and dynamics of ground beetle populations (Coleoptera, Carabidae) in the spruce forests of the Central Forest Nature Reserve. Russian Journal of Ecology 46:595–599.
- Krupa, E. G., V. N. Tsoy, T. Y. Lopareva, L. P. Ponomareva, A. N. Anureva, N. N. Sadyrbaeva, S. Z. Assylbekova, and K. B. Isbekov. 2013. Long-term dynamics of hydrobionts in lake Balkhash and its connection with the environmental factors. Vestnik of Astrakhan State Technical University. Series: Fishing Industry.:85–96.
- Kurina, E., T. Zinchenko, and T. Popchenko. 2016. Multi-year dynamics of benthos of the Saratov water reservoir with the accent on the role of alien species (in Russian). Pages 81–87 Tatishchev Readings: Actual Problems of Science and Practice. Materials of the XIII International Scientific and Practical Conference: in 5 volumes.
- Kuznetsova, N. 2005. Organization of communities of soil-dwelling Collembola. Prometei, Moscow.
- Kwon, T.-S., Y. S. Kim, S. W. Lee, and Y.-S. Park. 2016. Changes of soil arthropod communities in temperate forests over 10 years (1998–2007). Journal of Asia-Pacific Entomology 19:181–189.

- Landis, D. A. 2018. Insect Population Dynamics on the Main Cropping System Experiment at the Kellogg Biological Station, Hickory Corners, MI (1989 to 2017). https://doi.org/10.6073/pasta/6b6cc0ad7897d9008e8cf918bbf552d2.
- Langlands, P. R., K. E. C. Brennan, and D. J. Pearson. 2006. Spiders, spinifex, rainfall and fire: Long-term changes in an arid spider assemblage. Journal of Arid Environments 67:36–59.
- Latli, A., J. P. Descy, C. P. Mondy, M. Floury, L. Viroux, W. Otjacques, J. Marescaux, E. Depiereux, M. Ovidio, P. Usseglio-Polatera, and P. Kestemont. 2017. Long-term trends in trait structure of riverine communities facing predation risk increase and trophic resource decline. Ecological Applications 27:2458–2474.
- Lencioni, V. 2018. Glacial influence and stream macroinvertebrate biodiversity under climate change: Lessons from the Southern Alps. Science of The Total Environment 622–623:563–575.
- Lightfoot, D. 2010a. Long-Term Core Site Grasshopper Dynamics for the Sevilleta National Wildlife Refuge, New Mexico (1992-2013). https://doi.org/10.6073/pasta/c1d40e9d0ec610bb74d02741e9d22576.
- Lightfoot, D. 2010b. Ground Arthropod Community Survey in Grassland, Shrubland, and Woodland at the Sevilleta National Wildlife Refuge, New Mexico (1992-2004). https://doi.org/10.6073/pasta/9e7e6dc9c9d8f72e9e0bca07a1e76ccd.
- Lightfoot, D. 2010c. Small Mammal Exclosure Study (SMES) Ant Data from Chihuahuan Desert Grassland and Shrubland at the Sevilleta National Wildlife Refuge, New Mexico (1995-2005). https://doi.org/10.6073/pasta/c4963aa3363d18ac99bd40307db2249d.
- Lister, B. C., and A. Garcia. 2018. Climate-driven declines in arthropod abundance restructure a rainforest food web. Proceedings of the National Academy of Sciences 115:E10397–E10406.
- Magnuson, J., C. S, and E. Stanley. 2010. North Temperate Lakes LTER: Benthic Macroinvertebrates 1981 current. https://doi.org/10.6073/pasta/96451b76ce30c4658a556d44af66a8b0.
- Martikainen, P., and L. Kaila. 2004. Sampling saproxylic beetles: lessons from a 10-year monitoring study. Biological Conservation 120:171–181.
- McCreadie, J. W., P. H. Adler, and E. C. Masteller. 1994. Long-term emergence patterns of black flies (Diptera: Simuliidae) in northwestern Pennsylvania. Hydrobiologia 288:39–46.
- Mebane, C. A., R. J. Eakins, B. G. Fraser, and W. J. Adams. 2015a. Recovery of a mining-damaged stream ecosystem. Elementa: Science of the Anthropocene 3:000042.
- Mebane, C., R. Eakins, B. Fraser, and W. Adams. 2015b. Data from: Recovery of a mining-damaged stream ecosystem. https://doi.org/10.5061/dryad.67n20.
- Meijer, J., and A. Barendregt. 2018. Forty years of undisturbed change in the ground dwelling fauna in the Lauwersmeer, a reclaimed tidal estuary of the Dutch Waddensea. Entomologische berichten 78:122–151.
- Meserve, P. L., H. Vásquez, D. A. Kelt, J. R. Gutiérrez, and W. B. Milstead. 2016. Patterns in arthropod abundance and biomass in the semiarid thorn scrub of Bosque Fray Jorge

- National Park, north-central Chile: A preliminary assessment. Journal of Arid Environments 126:68–75.
- Minshall, G. W., C. T. Robinson, D. E. Lawrence, D. A. Andrews, and J. T. Brock. 2001. Benthic macroinvertebrate assemblages in five central Idaho (USA) streams over a 10-year period following disturbance by wildfire. International Journal of Wildland Fire 10:201.
- Monitoring Site 1000 Project, Biodiversity Center, M. o. E. o. J. 2015. Monitoring site 1000 Alpine research—Surface wandering beetles. http://www.biodic.go.jp/moni1000/findings/data/index.html.
- Moore, N. W. 1991. The development of dragonfly communities and the consequences of territorial behaviour: A 27-year study on small ponds at Woodwalton Fen, Cambridgeshire, United Kingdom. Odontologica 20:203–231.
- Mutin, V. A. 2015. The results of 30-year research of hover flies (Diptera, Syrphidae) anthophilous complex of xerophytic willow (Salix Bebberiana) in Silinskiy Park, Komsomolsk-Na-Amure. Pages 325–337 A.I. Kurentsov's Annual Memorial Meetings. Vladivostok.
- Nechvalenko, S. P. 1973. Bottom fauna in the first four years after the filling of the reservoir. (in Russian). Pages 94–103 *in* A. N. Yakovleva, V. P. Vyushkova, and T. K. Nebolsina., editors. Saratov Reservoir. Proceedings of the Saratov Department of Gosniorh. Privolzhskoe Publishing House, Saratov.
- Nemkov, V. A., and E. V. Sapiga. 2010. Impact of fires on the fauna of terrestrial arthropods in protected steppe ecosystems. Russian Journal of Ecology 41:173–179.
- Nitochko, M. I. 2012. Structure and dynamic of population of ground beetles and tenebrionid beetles (Coleoptera: Carabidae, Tenebrionidae) of sand steppe of Black Sea Biosphere Reserve NAS of Ukraine. Optimization and Protection of Ecosystems.:62–73.
- Novak, I. 1983. An efficient light-trap for catching insects. Acta Entomologica Bohemoslovaca 80:29–34.
- Novoselov, A. P., I. I. Studenov, A. K. Koz'min, G. A. Dvoryankin, A. G. Zavisha, M. A. Studenova, and A. L. Levitskiy. 2017. Species diversity and dynamics of the fish fodder base indicators of the Lacha lake. Part 2. Zoobenthos. Arctic Environmental Research 17:233–244.
- Paul, W. L., R. A. Cook, P. J. Suter, K. R. Clarke, M. E. Shackleton, P. J. McInerney, and J. H. Hawking. 2018. Long-Term Monitoring of Macroinvertebrate Communities Over 2,300 km of the Murray River Reveals Ecological Signs of Salinity Mitigation Against a Backdrop of Climate Variability. Water Resources Research 54:7004–7028.
- Pavlovsky, S. A. 2014. Comparative characteristics and long term changes of the macrozoobenthos in major biotopes of lake Syamozero (Southern Karelia). Trudy Karelskogo Nauchnogo Tsentra RA:140–146.
- Pe'er, G., and O. Comay. 2019. Data from the Israeli Butterfly Monitoring Scheme (BMS-IL) from 2009-2018.
- Pennings, S. C. 2016. Long-term mid-marsh grasshopper abundance and species diversity at eight GCE-LTER sampling sites. http://dx.doi.org/10.6073/pasta/ec9d524b8f13c000e8e8a225d5a23c7b.

- Petersen, H., E. Jucevica, and P. Gjelstrup. 2004. Long-term changes in collembolan communities in grazed and non-grazed abandoned arable fields in Denmark. Pedobiologia 48:559–573.
- Petukhov, V. A., N. V. Aladin, I. S. Plotnikov, and A. O. Smurov. 2017. Study, rational use and protection of the natural resources of the White Sea. Pages 154–157 *in* O. N. Pugachev and A. A. Sukhotin, editors. Multi-year dynamics of abundance, density and biomass of meyobentos of lake Krivoe. Zoological Institute of Russian Academy of Sciences, St.Petersburg.
- Pizzolotto, R., M. Gobbi, and P. Brandmayr. 2014. Changes in ground beetle assemblages above and below the treeline of the Dolomites after almost 30 years (1980 / 2009). Ecology and evolution 4:1284–1294.
- Ploquin, E. F., J. M. Herrera, and J. R. Obeso. 2013. Bumblebee community homogenization after uphill shifts in montane areas of northern Spain. Oecologia 173:1649–1660.
- Pollard, E. 1991. Monitoring butterfly numbers. Pages 87–111 *in* F. B. Goldsmith, editor. Monitoring for Conservation and Ecology. first edit. Chapman and Hall, London.
- Pollard, E., M. L. Hall, and T. J. Bibby. 1986. Monitoring the abundance of butterflies 1976-1985. Page Research and survey in nature conservation.
- Prendergast, J., E. Bazeley-White, O. Smith, J. Lawton, P. Inchausti, and E. Al. 2010. The Global Population Dynamics Database. https://knb.ecoinformatics.org/view/doi%3A10.5063%2FF1BZ63Z8.
- Quintero, I., and T. Roslin. 2005. Rapid recovery of dung beetle communities following habitat fragmentation in central Amazonia. Ecology 86:3303–3311.
- Rennie, S., J. Adamson, R. Anderson, C. Andrews, J. Bater, N. Bayfield, K. Beaton, D. Beaumont, S. Benham, V. Bowmaker, C. Britt, R. Brooker, D. Brooks, J. Brunt, G. Common, R. Cooper, S. Corbett, N. Critchley, P. Dennis, J. Dick, B. Dodd, N. Dodd, N. Donovan, J. Easter, M. Flexen, A. Gardiner, D. Hamilton, P. Hargreaves, M. Hatton-Ellis, M. Howe, J. Kahl, M. Lane, S. Langan, D. Lloyd, B. McCarney, Y. McElarney, C. McKenna, S. McMillan, F. Milne, L. Milne, M. Morecroft, M. Murphy, A. Nelson, H. Nicholson, D. Pallett, D. Parry, I. Pearce, G. Pozsgai, A. Riley, R. Rose, S. Schafer, T. Scott, L. Sherrin, C. Shortall, R. Smith, P. Smith, R. Tait, C. Taylor, M. Taylor, M. Thurlow, A. Turner, K. Tyson, H. Watson, M. Whittaker, I. Woiwod, and C. Wood. 2018a. UK Environmental Change Network (ECN) moth data: 1992-2015.
- Rennie, S., J. Adamson, R. Anderson, C. Andrews, J. Bater, N. Bayfield, K. Beaton, D. Beaumont, S. Benham, V. Bowmaker, C. Britt, R. Brooker, D. Brooks, J. Brunt, G. Common, R. Cooper, S. Corbett, N. Critchley, P. Dennis, J. Dick, B. Dodd, N. Dodd, N. Donovan, J. Easter, M. Flexen, A. Gardiner, D. Hamilton, P. Hargreaves, M. Hatton-Ellis, M. Howe, J. Kahl, M. Lane, S. Langan, D. Lloyd, B. McCarney, Y. McElarney, C. McKenna, S. McMillan, F. Milne, L. Milne, M. Morecroft, M. Murphy, A. Nelson, H. Nicholson, D. Pallett, D. Parry, I. Pearce, G. Pozsgai, R. Rose, S. Schafer, T. Scott, L. Sherrin, C. Shortall, R. Smith, P. Smith, R. Tait, C. Taylor, M. Taylor, M. Thurlow, A. Turner, K. Tyson, H. Watson, M. Whittaker, C. Wood, and C. Tilbury. 2018b. Environmental Change Network (ECN) butterfly data: 1993-2015.
- Rennie, S., J. Adamson, R. Anderson, C. Andrews, J. Bater, N. Bayfield, K. Beaton, D. Beaumont, S. Benham, V. Bowmaker, C. Britt, R. Brooker, D. Brooks, J. Brunt, G.

- Common, R. Cooper, S. Corbett, N. Critchley, P. Dennis, J. Dick, B. Dodd, N. Dodd, N. Donovan, J. Easter, M. Flexen, A. Gardiner, D. Hamilton, P. Hargreaves, M. Hatton-Ellis, M. Howe, J. Kahl, M. Lane, S. Langan, D. Lloyd, Y. McElarney, C. McKenna, S. McMillan, F. Milne, L. Milne, M. Morecroft, M. Murphy, A. Nelson, H. Nicholson, D. Pallett, D. Parry, I. Pearce, G. Pozsgai, R. Rose, S. Schafer, T. Scott, L. Sherrin, C. Shortall, R. Smith, P. Smith, R. Tait, C. Taylor, M. Taylor, M. Thurlow, A. Turner, K. Tyson, H. Watson, M. Whittaker, and C. Wood. 2018c. UK Environmental Change Network (ECN) spittle bug data: 1993-2015.
- Rennie, S., J. Adamson, R. Anderson, C. Andrews, J. Bater, N. Bayfield, K. Beaton, D. Beaumont, S. Benham, V. Bowmaker, C. Britt, R. Brooker, D. Brooks, J. Brunt, G. Common, R. Cooper, S. Corbett, N. Critchley, P. Dennis, J. Dick, B. Dodd, N. Dodd, N. Donovan, J. Easter, M. Flexen, A. Gardiner, D. Hamilton, P. Hargreaves, M. Hatton-Ellis, M. Howe, J. Kahl, M. Lane, S. Langan, D. Lloyd, Y. McElarney, C. McKenna, S. McMillan, F. Milne, L. Milne, M. Morecroft, M. Murphy, A. Nelson, H. Nicholson, D. Pallett, D. Parry, I. Pearce, G. Pozsgai, R. Rose, S. Schafer, T. Scott, L. Sherrin, C. Shortall, R. Smith, P. Smith, R. Tait, C. Taylor, M. Taylor, M. Thurlow, A. Turner, K. Tyson, H. Watson, M. Whittaker, and C. Wood. 2018d. UK Environmental Change Network (ECN) carabid beetle data: 1992-2015.
- Resh, V. H. 2018. The Resh lab long term data. https://nature.berkeley.edu/reshlab/longtermdata.htm.
- Rochlin, I., A. Faraji, D. V. Ninivaggi, C. M. Barker, and A. M. Kilpatrick. 2016. Anthropogenic impacts on mosquito populations in North America over the past century. Nature Communications 7:1–14.
- Roubik, D. W. 2001. Ups and downs in pollinator populations: When is there a decline? Ecology and Society 5:art2.
- Rudstam, L. 2018. Benthic invertebrates in Oneida Lake, New York, 1956 to present. kgordon.4.59. https://knb.ecoinformatics.org/view/kgordon.4.59.
- Rugenski, A. T., and G. W. Minshall. 2014. Climate-moderated responses to wildfire by macroinvertebrates and basal food resources in montane wilderness streams. Ecosphere 5:art25.
- Rybalov, L., and I. Kamayev. 2012. Comparative analysis and long-term dynamics of soil macrofauna in forest-tundra ecotone of the Khibiny mountains. Russian Entomological Journal 21:179–183.
- Sasova, L. E. 2008. Population of day lepidoptera (Lepidoptera, Diurna) of State nature reserve «Ussuriysky» named after V.L. Komarov. Far-Eastern State University, Vladivostok.
- Schowalter, T. 2011. Canopy Trimming Experiment (CTE) Canopy invertebrate responses to disturbance. https://doi.org/10.6073/pasta/6112c58462ffe49100d5b34378368f7f.
- Schowalter, T. 2017. Canopy invertebrate responses to Hurricane Hugo. https://doi.org/10.6073/pasta/82d334e74866175c791e557d8c303a62.
- Schuch, S. 2011. Long-term development of different grassland insect communities in Central Europe since the 1950s. Georg-August-Universität Göttingen.
- Schuch, S., J. Bock, B. Krause, K. Wesche, and M. Schaefer. 2012a. Long-term population

- trends in three grassland insect groups: A comparative analysis of 1951 and 2009. Journal of Applied Entomology 136:321–331.
- Schuch, S., K. Wesche, and M. Schaefer. 2012b. Long-term decline in the abundance of leafhoppers and planthoppers (Auchenorrhyncha) in Central European protected dry grasslands. Biological Conservation 149:75–83.
- Shafigullina, S. M. 2009. The role of floods in the Long-term dynamics of geobiont and chortobiont communities on islands of the Kuibyshev Reservoir. Russian Journal of Ecology 40:218–226.
- Shieh, S. H., and P. S. Yang. 2000. Community structure and functional organization of aquatic insects in an agricultural mountain stream of Taiwan: 1985-1986 and 1995-1996. Zoological Studies 39:191–202.
- Shlyakhtenok, A. S. 2007a. Studying the dynamics of the complex of the digging wasps (Hymenoptera, Sphecidae) in the abandoned zone of the Chernobyl Power Station. Ecologiya 5:391-394.
- Shlyakhtenok, A. S. 2007b. Hymenoptera Aculeates of raised bogs in Belarus. Zoologicheskii Zhurnal 86:295–306.
- Shlyakhtenok, A. S. 2007c. Aculeate Hymenoptera of the family Chrysididae of Byelorussia. Vestnik Zoologii 41:433–438.
- Shortall, R. C., A. Moore, E. Smith, J. M. Hall, P. I. Woiwod, and R. Harrington. 2009. Long-term changes in the abundance of flying insects. Insect Conservation and Diversity 2:251–260.
- Shulepina, S. P. 2010. Benthic communities in assessment of various type of water bodies in Yenissey river basin. Krasnoyarsk, Siberian Federal University.
- Sistema de Informação sobre a Biodiversidade Brasileira SiBBr. 2018. Benthic Macroinvertebrate Diversity in the middle Doce river basin, Brazil. Version 1.4. Sampling event dataset. GBIF.
- Slavik, K., B. J. Peterson, L. A. Deegan, W. B. Bowden, A. E. Hershey, and J. E. Hobbie. 2004. Long-term responses of the Kuparuk river ecosystem to phosphorus fertilization. Ecology 85.
- SLU. 2018. Miljödata MVM. version 1.21.00. https://miljodata.slu.se/mvm/Default.aspx.
- Smith, J. G., C. C. Brandt, and S. W. Christensen. 2011. Long-Term Benthic Macroinvertebrate Community Monitoring to Assess Pollution Abatement Effectiveness. Environmental Management 47:1077–1095.
- Soulsby, C., D. Turnbull, S. J. Langan, R. Owen, and D. Hirst. 1995. Long-term trends in stream chemistry and biology in north-east Scotland: evidence for recovery. Water, Air and Soil Pollution 85:689–694.
- Souza da Silva, J., E. Faria Albertoni, and C. Palma-Silva. 2015. Temporal variation of phytophilous Chironomidae over a 11-year period in a shallow Neotropical lake in southern Brazil. Hydrobiologia 742.
- Steinwandter, M., B. C. Schlick-Steiner, G. U. H. Seeber, F. M. Steiner, and J. Seeber. 2017. Effects of Alpine land-use changes: Soil macrofauna community revisited. Ecology and

- Evolution 7:5389-5399.
- Stout, R. J., and M. P. Rondinelli. 1995. Stream-dwelling insects and extremely low frequency electromagnetic fields: a ten-year study. Hydrobiologia 302:197–213.
- Swengel, A. B., and S. R. Swengel. 2015a. Grass-skipper (Hesperiinae) trends in midwestern USA grasslands during 1988–2013. Journal of Insect Conservation 19:279–292.
- Swengel, S. R., and A. B. Swengel. 2015b. Assessing abundance patterns of specialized bog butterflies over 12 years in northern Wisconsin USA. Journal of Insect Conservation 19:293–304.
- Szabó, S., E. Árnyas, B. Tóthmérész, and Z. Varga. 2007. Long-term light trap study on the macro-moth (lepidoptera: Macroheterocera) fauna of the Aggtelek National Park. Acta Zoologica Academiae Scientiarum Hungaricae 53:257–269.
- Tanasevitch, A. V., L. B. Rybalov, and I. O. Kamayev. 2009. Dynamics of the Soil Macrofauna in Spruce Forests in the Zone Exposed to Technogenic Impact of the Mining Integrated Plant "Severonikel". Lesovedenie 6:63–76.
- Taylor, L. R., I. P. Woiwod, E. D. M. MacCaulay, M. J. Dupuch, and J. Nicklen. 1990. Rothamsted Insect Survey Annual Report.
- Thomsen, P. F., P. S. Jørgensen, H. H. Bruun, J. Pedersen, T. Riis-nielsen, K. Jonko, I. Słowińska, C. Rahbek, and O. Karsholt. 2016. Data from: Resource specialists lead local insect community turnover associated with temperature analysis of an 18-year full-seasonal record of moths and beetles.
- Tilman, D., P. Reich, J. Knops, and D. Wedin. 2006. Biodiversity II: Effects of Plant Biodiversity on Population and Ecosystem Processes Experiment 120 Main Plots All Arthropod Insect Sweepnet Sampling 1996-2006. https://www.cedarcreek.umn.edu/research/data/dataset?aage120.
- Tsurikov, M. N. 2016. Long-term dynamics of the species composition of herpetobiont and hortobiont beetles (Coleoptera) in the Galichya Gora Nature Reserve. Entomological Review 96:191–198.
- Valtonen, A., A. Hirka, L. Szőcs, M. P. Ayres, H. Roininen, and G. Csóka. 2017. Long-term species loss and homogenization of moth communities in Central Europe. Journal of Animal Ecology.
- Valtonen, A., F. Molleman, C. A. Chapman, J. R. Carey, M. P. Ayres, and H. Roininen. 2013. Tropical phenology: Bi-annual rhythms and interannual variation in an Afrotropical butterfly assemblage. Ecosphere 4:1–28.
- Vinson, M. R. 2001. Long-term dynamics of an invertebrate assemblage downstream from a large dam. Ecological Applications 11:711–730.
- Vu, L. V. 2009. Diversity and similarity of butterfly communities in five different habitat types at Tam Dao National Park, Vietnam. Journal of Zoology 277:15–22.
- Wagner, R., J. Marxsen, P. Zwick, and E. J. Cox. 2011. Central European Stream Ecosystems: The Long Term Study of the Breitenbach (1st ed.). Page Central European Stream Ecosystems: The Long Term Study of the Breitenbach. Wiley-VCH, Weinheim.
- Wallace, J. B., S. L. Eggert, J. L. Meyer, J. R. Webster, and W. V. Sobczak. 2015. Stream

- invertebrate productivity linked to forest subsidies: 37 stream-years of reference and experimental data. Ecology 96:1213–1228.
- Wepprich, T., J. R. Adrion, L. Ries, J. Wiedmann, and N. M. Haddad. 2019. Butterfly abundance declines over 20 years of systematic monitoring in Ohio, USA. PLOS ONE 14:e0216270.
- White, E. 1991. The changing abundance of moths in a tussock grassland, 1962-1989, and 50- to 70-year trends. New Zealand Journal of Ecology 15:5–22.
- Wolda, H. 1992. Trends in abundance of tropical forest insects. Oecologia 89:47–52.
- Wolda, H., J. Marek, K. Spitzer, and I. Novak. 1994. Diversity and variability of Lepidoptera populations in urban Brno, Czech Republic. European Journal of Entomology 91:213–226.
- Woodward, G., N. Bonada, H. B. Feeley, and P. S. Giller. 2015. Resilience of a stream community to extreme climatic events and long-term recovery from a catastrophic flood. Freshwater Biology 60:2497–2510.
- Zhang, X., P. Wu, Y. Liu, Y. Han, X. Zhang, P. Dai, Z. Yu, and J. C. Axmacher. 2018. Changes in assemblages and diversity patterns of Carabidae (Coleoptera) from 1997 to 2014 in a desalinized, intensively cultivated agricultural landscape in northern China. The Coleopterists Bulletin 72:597–611.