

IPI Journal Publications

2011

Meeus I, Brown MJF, De Graaf DC, Smaghe GUY (2011) Effects of invasive parasites on bumble bee declines. *Conservation Biology* 25 (4):662-671. doi: [10.1111/j.1523-1739.2011.01707.x](https://doi.org/10.1111/j.1523-1739.2011.01707.x) For a copy contact Mark Brown Mark.Brown@rhul.ac.uk

2012

Carvell C., Jordan W.C., Bourke A.F.G., Pickles R., Redhead J.W. & Heard M.S. (2012). Molecular and spatial analyses reveal links between colony-specific foraging distance and landscape-level resource availability in two bumblebee species. *Oikos*, 121 734-742. For a copy contact Claire Carvell ccar@ceh.ac.uk

Gill, R.J., O. Ramos-Rodriguez, and N.E. Raine (2012) Combined pesticide exposure severely affects individual- and colony-level traits in bees. *Nature*, **491** : p. 105-108. For a copy contact Nigel Raine nraine@uoгуelph.ca or Richard Gill r.gill@imperial.ac.uk [Watch Video Summary](#)

Dicks L.V., Abrahams A., Atkinson J., Biesmeijer J., Bourn N., Brown C., Brown M., Carvell C., Connolly C., Cresswell J., Croft P., Darvill B., de Zylva P., Effingham P., Fountain M., Goggin A., Harding D., Harding T., Hartfield C., Heard M.S., Heathcote R., Heaver D., Holland J., Howe M., Hughes B., Huxley T., Kunin W.E., Little J., Mason C., Memmott J., Osborne J., Pankhurst T., Paxton R., Pocock M., Potts S.G., Power E.F., Raine N.E., Ranelagh E., Roberts S., Saunders R., Smith K., Smith R., Sutton P., Tilley L., Tinsley A., Tonhasca A., Vanbergen A.J., Webster S., Wilson A. & Sutherland W.J. (2012). Identifying key knowledge needs for evidence-based conservation of wild insect pollinators: a collaborative cross-sectoral exercise. *Insect Conservation and Diversity*, 6, 435-446. For a copy contact Lynn Dicks lvd22@cam.ac.uk

Vásquez A, Forsgren E, Fries I, Paxton RJ, Flaberg E, Szekely L, Olofsson TC (2012) *Symbionts as major modulators of insect health: Lactic Acid Bacteria and honeybees*. PLoS ONE 7 (3):e33188. doi:[10.1371/journal.pone.0033188](https://doi.org/10.1371/journal.pone.0033188)

Ruiz-González MX, Bryden J, Moret Y, Reber-Funk C, Schmid-Hempel P, Brown MJF (2012) Dynamic transmission, host quality and population structure in a multi-host parasite of bumble bees. *Evolution* 66:3053-3066 doi [10.1111/j.1558-5646.2012.01655.x](https://doi.org/10.1111/j.1558-5646.2012.01655.x) For a copy contact Mark Brown Mark.Brown@rhul.ac.uk

2013

Vanbergen, A.J. and the Insect Pollinators Initiative (2013) *Threats to an ecosystem service: pressures on pollinators*. *Frontiers in Ecology and the Environment*, **11**(5): p. 251-259.

Connolly C.N. (2013). *The risk of insecticides to pollinating insects*. *Communicative & Integrative Biology*, 6:5, e25074.

Bollan K., Hothersall J.D., Moffat C., Durkacz J., Saranzewa N., Wright G., Raine N., Hight F. & Connolly C. (2013). *The microsporidian parasites Nosema ceranae and Nosema apis are widespread in honeybee (Apis mellifera) colonies across Scotland*. *Parasitology Research*, 112, 751-759.

Palmer M.J., Moffat C., Saranzewa N., Harvey J., Wright G.A. & Connolly C.N. (2013). Cholinergic pesticides cause mushroom body neuronal inactivation in honeybees. *Nature Communications*, 4, 1634. For a copy contact Chris Connolly c.n.connolly@dundee.ac.uk

Wright G.A., Baker D.D., Palmer M.J., Stabler D., Mustard J.A., Power E.F., Borland A.M. & Stevenson P.C. (2013). Caffeine in floral nectar enhances a pollinator's memory of reward. *Science*, 339, 1202-1204. For a copy contact Jeri Wright jeri.wright@ncl.ac.uk

Williamson S.M., Baker D.D. & Wright G.A. (2013). *Acute exposure to a sublethal dose of imidacloprid and coumaphos enhances olfactory learning and memory in the honeybee Apis mellifera*. *Invertebrate Neuroscience*, 13, 63-70.

Williamson S.M. & Wright G.A. (2013). Exposure to multiple cholinergic pesticides impairs olfactory learning and memory in honeybees. *Journal of Experimental Biology*, 216, 1799-807. For a copy contact Jeri Wright jeri.wright@ncl.ac.uk

Carvalho L.G., Kunin W.E., Keil P., Aguirre-Gutiérrez J., Ellis W.N., Fox R., Groom Q., Hennekens S., Van Landuyt W., Maes D., Van de Meutter F., Michez D., Rasmont P., Ode B., Potts S.G., Reemer M., Roberts S.P.M., Schaminée J., WallisDeVries M.F. & Biesmeijer J.C. (2013). *Species richness declines and biotic homogenisation have slowed down for NW-European pollinators and plants*. *Ecology Letters*, 16, 870-878. [Corrigendum](#) to Carvalho et al. (2013)

Polce C., Termansen M., Aguirre-Gutiérrez J., Boatman N.D., Budge G.E., Crowe A., Garratt M.P., Pietravalle S., Potts S.G., Ramirez J.A., Somerwill K.E. & Biesmeijer J.C. (2013). *Species Distribution Models for Crop Pollination: A Modelling Framework Applied to Great Britain*. *PLoS ONE*, 8, e76308.

Bryden J., Gill R.J., Mitton R.A.A., Raine N.E. & Jansen V.A.A. (2013). *Chronic sublethal stress causes bee colony failure*. *Ecology Letters*, 16, 1463-1469.

Haynes E., Helgason T., Young J.P.W., Thwaites R. & Budge G.E. (2013). *A typing scheme for the honeybee pathogen Melissococcus plutonius allows detection of disease transmission events and a study of the distribution of variants*. *Environmental Microbiology Reports*, 5, 525-529.

Mill A.C., Rushton S.P., Shirley M.D.F., Smith G.C., Mason P., Brown M.A. & Budge G.E. (2013). *Clustering, persistence and control of a pollinator brood disease: epidemiology of American foulbrood*. *Environmental Microbiology (EARLY VIEW)*

Datta S., Bull J.C., Budge G.E. & Keeling M.J. (2013). *Modelling the spread of American foulbrood in honeybees*. *J R Soc Interface*, 10.

Garratt M.P.D., Truslove L., Coston D., Evans R., Moss E., Dodson C., Jenner N., Biesmeijer J. & Potts S. (2013). *Pollination deficits in UK apple orchards*. 2013, *Journal of Pollination Ecology*, 11.

Williams, G.R., Alaux, C., Costa, C., Csáki, T., Doublet, V., Eisenhardt, D., Fries, I., Kuhn, R., McMahon, D.P., Medrzycki, P., Murray, T.E., Natsopoulou, M.E., Neumann, P., Oliver, R., Paxton, R.J., Pernal, S.F., Shutler, D., Tanner, G., Van der Steen, J.J.M., Brodschneider, R. (2013). *Standard methods for maintaining adult Apis mellifera in cages under in vitro laboratory conditions*. *Journal of Apicultural Research* 52. <http://dx.doi.org/10.3896/IBRA.1.52.1.04>

Fries, I.; Chauzat, M.P.; Chen, Y.P.; Doublet, V.; Genersch, E.; Gisder, S.; Higes, M.; McMahon, D.P.; Martín-Hernández, R.; Natsopoulou, M.; Paxton, R. J.; Tanner, G.; Webster, T.C.; Williams, G.R. (2013) Standard methods for Nosema research. In V Dietemann; J D Ellis, P Neumann (Eds) The COLOSS BEEBOOK: Volume II: Standard methods for Apis mellifera pest and pathogen research. Journal of Apicultural Research 51(5): <http://dx.doi.org/10.3896/IBRA.1.52.1.14>

Butler, E., M. Alsterfjord, T. Olofsson, C. Karlsson, J. Malmstrom, and A. Vasquez. (2013). [Proteins of novel lactic acid bacteria from Apis mellifera mellifera: an insight into the production of known extra-cellular proteins during microbial stress](#). BMC Microbiology 13:235.

Williamson, S. M., C. Moffat, M. Gomersall, N. Saranzewa, C. Connolly, and G. A. Wright. (2013). [Exposure to acetylcholinesterase inhibitors alters the physiology and motor function of honeybees](#). Frontiers in Physiology 4

Forsgren, E., Budge, G.E., Charrière, J.D. and Hornitzky, M.A.Z. (2013). Standard methods for European foulbrood research. Journal of Apicultural Research 52. <http://dx.doi.org/10.3896/IBRA.1.52.1.12>

Graaf, D. C. de, Alippi, A. M., Antúnez, K., Aronstein, K. A., Budge, G., Koker, D. de, Smet, L. de, Dingman, D. W., Evans, J. D., Foster, L. J., Fünfhaus, A., Garcia-Gonzalez, E., Gregorc, A., Human, H., Murray, K. D., Bach Kim Nguyen, Poppinga, L., Spivak, M., Engelsdorp, D. van, Wilkins, S., Genersch, E. (2013). Standard methods for American foulbrood research. Journal of Apicultural Research 52. <http://dx.doi.org/10.3896/IBRA.1.52.1.11>

2014

Garratt M.P.D., Coston D.J., Truslove C.L., Lappage M.G., Polce C., Dean R., Biesmeijer J.C. & Potts S.G. (2014). [The identity of crop pollinators helps target conservation for improved ecosystem services](#). *Biological Conservation*, 169, 128-135.

Archer C.R., Pirk C.W.W., Wright G.A. & Nicolson S.W. (2014). Nutrition affects survival in African honeybees exposed to interacting stressors. *Functional Ecology*. Online Early. doi: 10.1111/1365-2435.12226 . For a copy contact: Sue Nicolson swnicolson@zoology.up.ac.za

Archer C.R., Pirk C.W.W., Carvalheiro L.G. & Nicolson S.W. (2014). Economic and ecological implications of geographic bias in pollinator ecology in the light of pollinator declines. *Oikos*, Online Early. For a copy contact: Sue Nicolson swnicolson@zoology.up.ac.za

Furst M.A., McMahon D.P., Osborne J.L., Paxton R.J. & Brown M.J.F. (2014). Disease associations between honeybees and bumblebees as a threat to wild pollinators. *Nature*, 506, 364-366. doi:10.1038/nature12977 For a copy contact: Mark Brown Mark.Brown@rhul.ac.uk

Pier P. Paoli, Dion Donley, Daniel Stabler, Anumodh Saseendranath, Susan W. Nicolson, Stephen J. Simpson, and Geraldine A. Wright (2014) [Nutritional balance of essential amino acids and carbohydrates of the adult worker honeybee depends on age](#). *Amino Acids*, doi:10.1007/s00726-014-1706-2

Giles E Budge, Mark D F Shirley, Benjamin Jones, Emiline Quill, Victoria Tomkies, Edward J Feil, Mike A Brown and Edward G Haynes (2014) [Molecular epidemiology and population structure of the honey bee brood pathogen *Melissococcus plutonius*](#) *The ISME Journal - Multidisciplinary Journal of Microbial Ecology* doi: 10.1038/ismej.2014.20

H. Charles J. Godfray, Tjeerd Blacquière, Linda M. Field, Rosemary S. Hails, Gillian Petrokofsky, Simon G. Potts, Nigel E. Raine, Adam J. Vanbergen, and Angela R. McLean (2014) [A restatement of the natural science evidence base concerning neonicotinoid insecticides and insect pollinators](#) , *Proceedings of the Royal Society B*, 281, 20140558; doi:10.1098/rspb.2014.0558

Erich Y. T. Nakasu, Sally M. Williamson, Martin G. Edwards, Elaine C. Fitches, John A. Gatehouse, Geraldine A. Wright, and Angharad M. R. Gatehouse (2014) Novel biopesticide based on a spider venom peptide shows no adverse effects on honeybees, 281 20140619; doi:10.1098/rspb.2014.0619

Dreier S., Redhead J.W., Warren I.A., Bourke A.F.G., Heard M.S., Jordan W.C., Sumner S., Wang J. & Carvell C. (2014). [Fine-scale spatial genetic structure of common and declining bumble bees across an agricultural landscape](#). *Molecular Ecology*, 23, 3384-3395 DOI: 10.1111/mec.12823

Ryabov E.V., Wood G.R., Fannon J.M., Moore J.D., Bull J.C., Chandler D., Mead A., Burroughs N. & Evans D.J. (2014). [A virulent strain of Deformed Wing Virus \(DWV\) of Honeybees \(*Apis mellifera*\) prevails after Varroa destructor-mediated, or in vitro, transmission](#). *PLoS Pathogens*, 10, e1004230.

Garratt M.P.D., Breeze T.D., Jenner N., Polce C., Biesmeijer J.C. & Potts S.G. (2014). [Avoiding a bad apple: Insect pollination enhances fruit quality and economic value](#). *Agriculture, Ecosystems & Environment*, 184, 34-40.

Polce C., Garratt M.P., Termansen M., Ramirez-Villegas J., Challinor A.J., Lappage M.G., Boatman N.D., Crowe A., Endalew A.M., Potts S.G., Somerwill K.E. & Biesmeijer J.C. (2014). [Climate-driven spatial mismatches between British orchards and their pollinators: increased risks of pollination deficits](#). *Global Change Biology*. 20, 2815-2828.

Wolf S., McMahon D.P., Lim K.S., Pull C.D., Clark S.J., Paxton R.J. & Osborne J.L. (2014). [So near and yet so far: harmonic radar reveals reduced homing ability of Nosema infected honeybees](#). *PLoS ONE*, 9, e103989.

Hurst V., Stevenson P. & Wright G. (2014). [Toxins induce 'malaise' behaviour in the honeybee \(*Apis mellifera*\)](#). *Journal of Comparative Physiology A*, 1-10. DOI 10.1007/s00359-014-0932-0

Gill R.J. & Raine N.E. (2014). Chronic impairment of bumblebee natural foraging behaviour induced by sublethal pesticide exposure. *Functional Ecology* DOI: 10.1111/1365-2435.12292 For a copy contact Richard Gill r.gill@imperial.ac.uk or Nigel Raine nraine@uoguelph.ca

Baron GL, Raine NE, Brown MJF (2014) [Impact of chronic exposure to a pyrethroid pesticide on bumblebees and interactions with a trypanosome parasite](#). *Journal of Applied Ecology* 51, 460–469. doi 10.1111/1365-2664.12205

Wood, G.R., Ryabov, E.V., Fannon, J.M., Moore, J.D., Evans, D.J., and Burroughs, N. (2014) [MosaicSolver: a tool for determining recombinants of viral genomes from pileup data](#). *Nucleic Acid Research*. doi: 10.1093/nar/gku524

Palmer, M. and C. Connolly. 2013. [Patch-Clamp Recording from Kenyon Cells in Acutely-Isolated Bee Brain](#). *Protocol Exchange*. doi:10.1038/protex.2013.038

Williamson, S., S. Willis, and G. Wright. 2014. [Exposure to neonicotinoids influences the motor function of adult worker honeybees](#). *Ecotoxicology*:1-10. doi: 10.1007/s10646-014-1283-x

Morrissey, B.J., Helgason, T., Poppinga, L., Fünfhaus, A., Genersch, E., Budge, G.E. (2014). [Biogeography of *Paenibacillus* larvae, the causative agent of American foulbrood, using a new MLST scheme](#). *Environmental Microbiology* doi: 10.1111/1462-2920.12625.

Vanbergen, A. J. 2014. [Landscape alteration and habitat modification: impacts on plant-pollinator systems](#). — *Current Opinion in Insect Science* 43: 1-6 DOI: 10.1016/j.cois.2014.09.004

Archer, C. R., A. Köhler, C. W. W. Pirk, V. Oosthuizen, Z. Apostolides, and S. W. Nicolson. 2014. Antioxidant supplementation can reduce the survival costs of excess amino acid intake in honeybees. *Journal of Insect Physiology* 71:78-86 For a copy contact: Sue Nicolson swnicolson@zoology.up.ac.za

Wood, G. R., N. J. Burroughs, D. J. Evans, and E. V. Ryabov. 2014. [Error correction and diversity analysis of population mixtures determined by NGS](#). *PeerJ* 2:e645.

Simcock, N. K., H. E. Gray, and G. A. Wright. 2014. [Single amino acids in sucrose rewards modulate feeding and associative learning in the honeybee](#). *Journal of Insect Physiology* 69:41-48.

2015

Natsopoulou ME, McMahon DP, Doublet V, Bryden J, Paxton RJ. (2015) Interspecific competition in honey bee intracellular gut parasites is asymmetric and favours the spread of an emerging infectious disease. *Proceedings of the Royal Society B: Biological Sciences*. 20141896. <http://dx.doi.org/10.1098/rspb.2014.1896> For a copy contact: Robert Paxton robert.paxton@zoologie.uni-halle.de

Moffat, C., J.G. Pacheco, S. Sharp, A.J. Samson, K.A. Bolland, J. Huang, S.T. Buckland, and C.N. Connolly, [Chronic exposure to neonicotinoids increases neuronal vulnerability to mitochondrial dysfunction in the bumblebee \(*Bombus terrestris*\)](#). *The FASEB Journal*, 2015 29, 5, 2112-2119. doi: 10.1096/fj.14-267179

Baldock, K.C.R., Goddard, M.A., Hicks, D.M., Kunin, W.E., Mitschunas, N., Osgathorpe, L.M., Potts, S.G., Robertson, K.M., Scott, A.V., Stone, G.N., Vaughan, I.P. & Memmott, J. (2015) Where is the UK's pollinator biodiversity? The importance of urban areas for flower-visiting insects. *Proceedings of the Royal Society B*, 282. [10.1098/rspb.2014.2849](https://doi.org/10.1098/rspb.2014.2849)

McMahon D.P., Fürst M.A., Caspar J., Theodorou P., Brown M.J.F. & Paxton R.J. (2015). [A sting in the spit: widespread cross-infection of multiple RNA viruses across wild and managed bees](#). *Journal of Animal Ecology*, online early DOI: 10.1111/1365-2656.12345

Senapathi D., Carvalheiro L.G., Biesmeijer J.C., Dodson C.-A., Evans R.L., Mc Kerchar M., Morton R.D., Moss E.D., Roberts S.P.M., Kunin W.E. & Potts S.G. (2015). [The impact of over 80 years of land cover changes on bee and wasp pollinator communities in England](#). *Proceedings of the Royal Society B*, doi: 10.1098/rspb.2015.0294

Raine N.E. & Gill R.J. (2015). *Ecology: Tasteless pesticides affect bees in the field*. *Nature*, advance online publication. For a copy contact: Nigel Raine nraine@uoguelph.ca or Richard Gill r.gill@imperial.ac.uk

Kessler S.C., Tiedeken E.J., Simcock K.L., Derveau S., Mitchell J., Softley S., Stout J.C. & Wright G.A. (2015). [Bees prefer foods containing neonicotinoid pesticides](#). Nature, advance online publication. For a copy contact Jeri Wright eri.wright@ncl.ac.uk

David Kleijn, Rachael Winfree, Ignasi Bartomeus, Luísa G Carvalheiro, Mickaël Henry, Rufus Isaacs, Alexandra-Maria Klein, Claire Kremen, Leithen K M'Gonigle, Romina Rader, Taylor H Ricketts, Neal M Williams, Nancy Lee Adamson, John S Ascher, András Báldi, Péter Batáry, Faye Benjamin, Jacobus C Biesmeijer, Eleanor J Blitzer, Riccardo Bommarco, Mariëtte R Brand, Vincent Bretagnolle, Lindsey Button, Daniel P Cariveau, Rémy Chifflet, Jonathan F Colville, Bryan N Danforth, Elizabeth Elle, Michael P.D. Garratt, Felix Herzog, Andrea Holzschuh, Brad G Howlett, Frank Jauker, Shalene Jha, Eva Knop, Kristin M Krewenka, Violette Le Féon, Yael Mandelik, Emily A May, Mia G Park, Gideon Pisanty, Menno Reemer, Verena Riedinger, Orienne Rollin, Maj Rundlöf, Hillary S Sardiñas, Jeroen Scheper, Amber R Sciligo, Henrik G Smith, Ingolf Steffan-Dewenter, Robbin Thorp, Teja Tscharntke, Jort Verhulst, Blandina F Viana, Bernard E Vaissière, Ruan Veldtman, Catrin Westphal & Simon G Potts (2015) [Delivery of crop pollination services is an insufficient argument for wild pollinator conservation](#). Nature Communications, 6. Article number: 7414 doi:10.1038/ncomms8414

Dicks, L. V., M. Baude, S. P. M. Roberts, J. Phillips, M. Green, and C. Carvell. 2015. [How much flower-rich habitat is enough for wild pollinators? Answering a key policy question with incomplete knowledge](#). Ecological Entomology (online early)

Budge, G.E., D. Garthwaite, A. Crowe, N.D. Boatman, K.S. Delaplane, M.A. Brown, H.H. Thygesen, and S. Pietravalle, 2015: [Evidence for pollinator cost and farming benefits of neonicotinoid seed coatings on oilseed rape](#). *Scientific Reports*, 5, 12574.

Du Rand, E.E., S. Smit, M. Beukes, Z. Apostolides, C.W.W. Pirk, and S.W. Nicolson, 2015: [Detoxification mechanisms of honey bees \(*Apis mellifera*\) resulting in tolerance of dietary nicotine](#). *Scientific Reports*, 5, 11779.

Garibaldi, L.A., I. Bartomeus, R. Bommarco, A.M. Klein, S.A. Cunningham, M.A. Aizen, V. Boreux, M.P.D. Garratt, L.G. Carvalheiro, C. Kremen, C.L. Morales, C. Schüepp, N.P. Chacoff, B.M. Freitas, V. Gagic, A. Holzschuh, B.K. Klatt, K.M. Krewenka, S. Krishnan, M.M. Mayfield, I. Motzke, M. Otieno, J. Petersen, S.G. Potts, T.H. Ricketts, M. Rundlöf, A. Sciligo, P.A. Sinu, I. Steffan-Dewenter, H. Taki, T. Tscharntke, C.H. Vergara, B.F. Viana, and M. Woyciechowski, 2015: [Trait matching of flower visitors and crops predicts fruit set better than trait diversity](#). *Journal of Applied Ecology*, Online early

Stanley, D.A., M.P.D. Garratt, J.B. Wickens, V.J. Wickens, S.G. Potts, and N.E. Raine, 2015: [Neonicotinoid pesticide exposure impairs crop pollination services provided by bumblebees](#). Nature, Online early publication. For a copy contact: Nigel Raine nraine@uoguelph.ca or Dara Stanley Dara.Stanley@rhul.ac.uk

Stanley, D.A., K.E. Smith, and N.E. Raine, 2015: [Bumblebee learning and memory is impaired by chronic exposure to a neonicotinoid pesticide](#). *Scientific Reports*, 5, 16508.

Rader, R., Bartomeus, I., Garibaldi, L.A., Garratt, M.P., Howlett, B.G., Winfree, R., Cunningham, S.A., Mayfield, M.M., Arthur, A.D., Andersson, G.K., Bommarco, R., Brittain, C., Carvalheiro, L.G., Chacoff, N.P., Entling, M.H., Foully, B., Freitas, B.M., Gemmill-Herren, B., Ghazoul, J., Griffin, S.R., Gross, C. L., Herbertsson, L., Herzog, F., Hipolito, J., Jaggard, S., Jauker, F., Klein, A.M., Kleijn, D., Krishnan, S., Lemos, C.Q., Lindstrom, S.A., Mandelik, Y., Monteiro, V.M., Nelson, W., Nilsson, L., Pattemore, D.E., de, O.P.N., Pisanty, G., Potts, S.G., Reemer, M., Rundlöf, M., Sheffield, C.S., Scheper, J., Schuepp, C., Smith, H.G., Stanley, D.A., Stout, J.C., Szentgyorgyi, H., Taki, H., Vergara, C.H., Viana, B.F. & Woyciechowski, M. (2015) [Non-bee insects are important contributors to global crop pollination](#). *Proc Natl Acad Sci U S A*.

Tiedeken, E.J., Egan, P.A., Stevenson, P.C., Wright, G.A., Brown, M.J.F., Power, E.F., Farrell, I., Matthews, S.M. & Stout, J.C. (2015) [Nectar chemistry modulates the impact of an invasive plant on native pollinators](#). *Functional Ecology*, Online Early.

Oliver CJ, Softley S, Williamson SM, Stevenson PC, Wright GA (2015) Pyrethroids and nectar toxins have subtle effects on the motor function, grooming and wing fanning behaviour of honeybees (*Apis mellifera*). *PLoS ONE* 10(8): e0133733. doi:10.1371/journal.pone.0133733

Natsopoulou, M.E., McMahon, D.P., and Paxton, R.J. (2015). [Parasites modulate within-colony activity and accelerate the temporal polyethism schedule of a social insect, the honey bee](#). *Behavioral Ecology and Sociobiology*, 1-13. doi: 10.1007/s00265-015-2019-5. For a copy contact: myrsini.natsopoulou@zoologie.uni-halle.de

Stabler, D., P. P. Paoli, S. W. Nicolson, and G. A. Wright. (2015). [Nutrient balancing of the adult worker bumblebee \(*Bombus terrestris*\) depends on the dietary source of essential amino acids](#). *Journal of Experimental Biology* 218:793 For a copy contact Jeri Wright jeri.wright@ncl.ac.uk

Godfray HCJ, Blacquière T, Field LM, Hails RS, Potts SG, Raine NE, Vanbergen AJ, McLean AR (2015) A restatement of recent advances in the natural science evidence base concerning neonicotinoid insecticides and insect pollinators. *Proceedings of the Royal Society – B* 282: 20151821. doi:10.1098/rspb.2015.1821 <http://rspb.royalsocietypublishing.org/content/282/1818/20151821>

2016

Richard J. Gill; Katherine C.R. Baldock; Mark J.F. Brown; James J.E. Creswell; Lynn V. Dicks; Michelle T. Fountain; Michael P.D. Garratt; Leonie A. Gough; Matt S. Heard; John M. Holland; Jeff Ollerton; Graham N. Stone; Cuong Q. Tang; Adam J. Vanbergen; Alfried P. Vogler; Guy Woodward; Andres N. Arce; Nigel D. Boatman; Richard Brand-Hardy; Tom D. Breeze; Mike Green; Chris M. Hartfield; Rory S. O'Connor; Juliet L. Osborne; James Phillips; Peter B. Sutton & Simon G. Potts (2016). [Protecting an Ecosystem Service: Approaches to Understanding and Mitigating Threats to Wild Insect Pollinators](#). *Advances in Ecological Research*, 54 135-206, doi.org/10.1016/bs.aecr.2015.10.007 For a copy contact Richard Gill r.gill@imperial.ac.uk

Ryabov EV, Fannon JM, Moore JD, Wood GR, Evans DJ. (2016) The Iflaviruses Sacbrood virus and Deformed wing virus evoke different transcriptional responses in the honeybee which may facilitate their horizontal or vertical transmission. *PeerJ* 4:e1591 <https://doi.org/10.7717/peerj.1591>

Baude, M., Kunin, W.E., Boatman, N.D., Conyers, S., Davies, N., Gillespie, M.A.K., Morton, R.D., Smart, S.M., and Memmott, J. (2016). [Historical nectar assessment reveals the fall and rise of floral resources in Britain](https://doi.org/10.1038/nature16532). *Nature* 530, 85-88. doi:10.1038/nature16532 <http://www.nature.com/nature/journal/v530/n7588/abs/nature16532.html#supplementary-information> For a copy contact: mathilde.baude@univ-orleans.fr or jane.memmott@bristol.ac.uk

Smith, D. B., G. Bernhart, N. E. Raine, R. L. Abel, D. Sykes, F. Ahmed, I. Pedroso and R. J. Gill (2016). [Exploring miniature brains using novel techniques in micro-CT scanning](https://doi.org/10.1038/srep21768). *Scientific Reports* 6: 21768. doi:10.1038/srep21768

Dara A. Stanley, Nigel E. Raine (2016). [Chronic exposure to a neonicotinoid pesticide alters the interactions between bumblebees and wild plants](https://doi.org/10.1111/1365-2435.12644). *Functional Ecology* doi:10.1111/1365-2435.12644.

Moffat C, Buckland ST, Samson AJ, McArthur R, Chamosa Pino V, Bolland KA, Huang J TJ & Connolly CN (2016) [Neonicotinoids target distinct nicotinic acetylcholine receptors and neurons, leading to differential risks to bumblebees](https://doi.org/10.1038/srep24764). *Scientific Reports*, 6, 24764, 10.1038/srep24764

Redhead, J. W., S. Dreier, A. F. G. Bourke, M. S. Heard, W. C. Jordan, S. Sumner, J. Wang, and C. Carvell. 2016. [Effects of habitat composition and landscape structure on worker foraging distances of five bumble bee species](https://doi.org/10.1098/rspb.2016.0811). *Ecological Applications* 26:726-739 For a copy contact John Redhead johdhe@ceh.ac.uk or Claire Carvell ccar@ceh.ac.uk

McMahon DP, Natsopoulos ME, Doublet V, Fürst M, Weging S, Brown MJF et al. (2016) [Elevated virulence of an emerging viral genotype as a driver of honeybee loss](https://doi.org/10.1098/rspb.2016.0811). *Proceedings of the Royal Society of London B: Biological Sciences*, 283, 10.1098/rspb.2016.0811.

Garratt, M. P. D., T. D. Breeze, V. Boreux, M. T. Fountain, M. McKerchar, S. M. Webber, D. J. Coston, N. Jenner, R. Dean, D. B. Westbury, J. C. Biesmeijer, and S. G. Potts. 2016. [Apple Pollination: Demand depends on variety and supply depends on pollinator identity](https://doi.org/10.1371/journal.pone.0153889). *PLoS ONE* 11:e0153889.

Hicks, D. M., P. Ouvrard, K. C. R. Baldock, M. Baude, M. A. Goddard, W. E. Kunin, N. Mitschunas, J. Memmott, H. Morse, M. Nikolitsi, L. M. Osgathorpe, S. G. Potts, K. M. Robertson, A. V. Scott, F. Sinclair, D. B. Westbury, and G. N. Stone. (2016). [Food for pollinators: Quantifying the nectar and pollen resources of urban flower meadows](https://doi.org/10.1371/journal.pone.0158117). *PLoS ONE* 11:e0158117.

Stanley DA, Russell AL, Morrison SJ, Rogers C, Raine NE (2016) Investigating the impacts of field-realistic exposure to a neonicotinoid pesticide on bumblebee foraging, homing ability and colony growth. *Journal of Applied Ecology* 53: 1440-1449. doi:10.1111/1365-2664.12689 <http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12689/full>

2017

Carvell, C., A. F. G. Bourke, S. Dreier, S. N. Freeman, S. Hulmes, W. C. Jordan, J. W. Redhead, S. Sumner, J. Wang, and M. S. Heard. 2017. [Bumblebee family lineage survival is enhanced in high-quality landscapes](https://doi.org/10.1038/nature21709) (2017). *Nature* doi:10.1038/nature21709. For a copy contact Claire Carvell ccar@ceh.ac.uk

Carruthers, J. M., S. M. Cook, G. A. Wright, J. L. Osborne, S. J. Clark, J. L. Swain, and A. J. Houghton. 2017. [Oilseed rape \(Brassica napus\) as a resource for farmland insect pollinators: quantifying floral traits in conventional varieties and breeding systems](https://doi.org/10.1111/gcbb.12438). *GCB Bioenergy* DOI: 10.1111/gcbb.12438

Keeling, M. J., D. N. Franklin, S. Datta, M. A. Brown, and G. E. Budge. 2017. [Predicting the spread of the Asian hornet \(Vespa velutina\) following its incursion into Great Britain](https://doi.org/10.1038/s41598-017-08752-x). *Scientific Reports* 7:6240.

Keeling, M. J., S. Datta, D. N. Franklin, I. Flatman, A. Wattam, M. Brown, and G. E. Budge. 2017. [Efficient use of sentinel sites: detection of invasive honeybee pests and diseases in the UK](https://doi.org/10.1098/rsif.2017.0123). *Journal of the Royal Society Interface* 14.

Baron, GL, Raine NE, Brown MJF (2017) General and species-specific impacts of a neonicotinoid insecticide on the ovary development and feeding of wild bumblebee queens. *Proceedings of the Royal Society – B* 284: 20170123. doi:10.1098/rspb.2017.0123 <http://rspb.royalsocietypublishing.org/content/284/1854/20170123>

Stanley DA, Raine NE (2017) Bumblebee colony development following chronic exposure to field-realistic levels of the neonicotinoid pesticide thiamethoxam under laboratory conditions. *Scientific Reports* 7: 8005. doi:10.1038/s41598-017-08752-x <https://www.nature.com/articles/s41598-017-08752-x>

Baron GL, Jansen VAA, Brown MJF, Raine NE (2017) Pesticide reduces bumblebee colony establishment and increases probability of population extinction. *Nature Ecology & Evolution* 1: 1308–1316. doi:10.1038/s41559-017-0260-1 <https://www.nature.com/articles/s41559-017-0260-1>

