



Research output

Research priorities for managing the impacts and dependencies of business upon food, energy, water and the environment

Green, J. M. H., Cranston, G. R., Sutherland, W. J., Tranter, H. R., Bell, S. J., Benton, T. G., Blixt, E., Bowe, C., Broadley, S., Brown, A., Brown, C., Neil, B., Butler, D., Collins, H., Crowley, H., DeKoszmovszky, J., Firbank, L. G., Fulford, B., Gardner, T. A., Hails, R. S., & 20 others Halvorson, S., Jack, M., Kerrison, B., Koh, L. S. C., Lang, S. C., McKenzie, E. J., Monsivais, P., O'Riordan, T., Osborn, J., Oswald, S., Price Thomas, E., Raffaelli, D. G., Reyers, B., Srai, J. S., Strassburg, B. B. N., Webster, D., Welters, R., Whiteman, G., Wilsdon, J. & Vira, B., 7 Oct 2016, (E-pub ahead of print) In: Sustainability Science. p. 1-13 13 p.

The textural discontinuity hypothesis: An exploration at a regional level. Shortened version: Exploring Holling's TDH

Raffaelli, D. G., Hardiman, A., Smart, J., Yamanaka, T. & White, P. C. L., 3 Sept 2015, (E-pub ahead of print) In: Oikos. 125, 6, p. 797-803

Stakeholder perceptions of the effectiveness and efficiency of agri-environment schemes in enhancing pollinators on farmland

Austin, Z., Penic, M., Raffaelli, D. G. & White, P. C. L., Sept 2015, In: Land Use Policy. 47, p. 156-162 7 p.

Evaluating the outcomes of payments for ecosystem services programmes using a capital asset framework

Hejnowicz, A. P., Raffaelli, D. G., Rudd, M. A. & White, P. C. L., 1 Sept 2014, In: Ecosystem Services. 9, p. 83-97 15 p.

Big Data and Ecosystem Research Programmes

Raffaelli, D. G., Bullock, J. M., Cinderby, S., Durance, I., Emmett, B., Harris, J., Hicks, K., Oliver, T. H., Paterson, D. & White, P. C. L., 2014, In: Advances in Ecological Research. 51, p. 41-77 37 p.

Non-Linear Interactions Determine the Impact of Sea-Level Rise on Estuarine Benthic Biodiversity and Ecosystem Processes

Yamanaka, T., Raffaelli, D. & White, P. C. L., 8 Jul 2013, In: PLoS ONE. 8, 7, e68160.

Interactions between ecological and social drivers in determining and managing biodiversity impacts of deer

Austin, Z., Raffaelli, D. G. & White, P. C. L., 1 Feb 2013, In: Biological Conservation. 158, p. 214-222 9 p.

Measuring the impacts on global biodiversity of goods and services imported into the UK: Methodology report

Croft, S., West, C. D., Dawkins, E., Brugere, C., Sheate, W. & Raffaelli, D. G., Feb 2013, Defra. 21 p.

Biological and operational determinants of the effectiveness and efficiency of biodiversity conservation programs

Laycock, H. F., Raffaelli, D. G., White, P. C. L. & Moran, D., 1 Jan 2013, In: Wildlife research. 40, 2, p. 142-152

Ecosystems and their services in a changing world: an ecological perspective

Raffaelli, D. G. & White, P. C. L., 2013, (Accepted/In press) In: Advances in Ecological Research. 48, p. 1-70 70 p.

Measuring the impacts on global biodiversity of goods and services imported into the UK

West, C. D., Dawkins, E., Croft, S., Raffaelli, D. G., Brugere, C. & Sheate, W., 2013, Defra. 54 p.

Plant diversity and generation of ecosystem services at the landscape scale: expert knowledge assessment
Quijas, S., Jackson, L., Maass, M., Schmid, B., Raffaelli, D. G. & Balvanera, P., Aug 2012, In: *Journal of Applied Ecology*. 49, 4, p. 929-940 12 p.

Uptake and depuration of pharmaceuticals in aquatic invertebrates
Meredith-Williams, M., Carter, L. J., Fussell, R., Raffaelli, D., Ashauer, R. & Boxall, A. B. A., Jun 2012, In: *Environmental Pollution*. 165, p. 250-258 9 p.

Evaluating the effectiveness and efficiency of biodiversity conservation spending
Laycock, H. F., Moran, D., Smart, J. C. R., Raffaelli, D. G. & White, P. C. L., 15 Aug 2011, In: *Ecological Economics*. 70, 10, p. 1789-1796 8 p.

Long-term changes in the production by estuarine macrobenthos affected by multiple stressors
Dolbeth, M., Cardoso, P. G., Grilo, T. F., Bordalo, M. D., Raffaelli, D. & Pardal, M. A., 20 Mar 2011, In: *Estuarine coastal and shelf science*. 92, 1, p. 10-18 9 p.

Impact of biodiversity-climate futures on primary production and metabolism in a model benthic estuarine system
Hicks, N., Paterson, D. M., Bulling, M. T., Solan, M., Raffaelli, D. & White, P. C. L., 14 Feb 2011, In: *BMC Ecology*. 11

Climate change, biotic interactions and ecosystem services
Montoya, J. M. & Raffaelli, D., 12 Jul 2010, In: *Philosophical Transactions Of The Royal Society Of London Series B - Biological Sciences*. 365, 1549, p. 2013-2018 6 p.

Marine biodiversity-ecosystem functions under uncertain environmental futures
Bulling, M. T., Hicks, N., Murray, L., Raffaelli, D., White, P. C. L. & Solan, M., 12 Jul 2010, In: *Philosophical Transactions Of The Royal Society Of London Series B - Biological Sciences*. 365, 1549, p. 2107-2116 10 p.

The effects of climate change on biotic interactions and ecosystem services
Montoya, J. M. & Raffaelli, D., 12 Jul 2010, In: *Philosophical Transactions Of The Royal Society Of London Series B - Biological Sciences*. 365, 1549, p. 2011-2011 1 p.

Assessment of temporal trends in ecosystem health using an holistic indicator
Wiegand, J., Raffaelli, D., Smart, J. C. R. & White, P. C. L., Jul 2010, In: *Journal of Environmental Management*. 91, 7, p. 1446-1455 10 p.

Physical determinants of intertidal communities on dissipative beaches: Implications of sea-level rise
Yamanaka, T., Raffaelli, D. & White, P. C. L., 20 Jun 2010, In: *Estuarine coastal and shelf science*. 88, 2, p. 267-278 12 p.

Implications of nutrient decline in the seagrass ecosystem success
Cardoso, P. G., Leston, S., Grilo, T. F., Bordalo, M. D., Crespo, D., Raffaelli, D. & Pardal, M. A., Apr 2010, In: *Marine pollution bulletin*. 60, 4, p. 601-608 8 p.

Food webs are more than the sum of their trophic parts
Cohen, J. E., Schittler, D. N., Raffaelli, D. G. & Reuman, D. C., 29 Dec 2009, In: *Proceedings of the National Academy of Sciences of the United States of America*. 106, 52, p. 22335-22340 6 p.

Enhancing the effectiveness of policy-relevant integrative research in rural areas
White, P. C. L., Cinderby, S., Raffaelli, D., de Bruin, A., Holt, A. & Huby, M., Dec 2009, In: *Area*. 41, 4, p. 414-424 11 p.

Evaluating the cost-effectiveness of conservation: The UK Biodiversity Action Plan
Laycock, H., Moran, D., Smart, J., Raffaelli, D. & White, P., Dec 2009, In: *Biological Conservation*. 142, 12, p. 3120-3127 8 p.

An ecological-economic model for catchment management: The case of Tonameca, Oaxaca, Mexico
Avila-Foucat, V. S., Perrings, C. & Raffaelli, D., 15 Jun 2009, In: Ecological Economics. 68, 8-9, p. 2224-2231 8 p.

Trophodynamics in a Shallow Lagoon off Northwestern Europe (Culbin Sands, Moray Firth): Spatial and Temporal Variability of Epibenthic Communities, Their Diets, and Consumption Efficiency
Mendonca, V. M., Raffaelli, D. G., Boyle, P. R. & Emes, C., Mar 2009, In: Zoological studies. 48, 2, p. 196-214 19 p.

Mapping wildlife: integrating stakeholder knowledge with modelled patterns of deer abundance by using participatory GIS
Austin, Z., Cinderby, S., Smart, J. C. R., Raffaelli, D. & White, P. C. L., 1 Jan 2009, In: Wildlife research. 36, 7, p. 553-564 12 p.

Allometry of Body Size and Abundance in 166 Food Webs

Reuman, D. C., Mulder, C., Banasek-Richter, C., Blandenier, M-F. C., Breure, A. M., Den Hollander, H., Kneitel, J. M., Raffaelli, D., Woodward, G. & Cohen, J. E., 2009, *ADVANCES IN ECOLOGICAL RESEARCH*, VOL 41. SAN DIEGO: Elsevier, p. 144 44 p.

Species effects on ecosystem processes are modified by faunal responses to habitat composition

Bulling, M. T., Solan, M., Dyson, K. E., Hernandez-Milian, G., Luque, P., Pierce, G. J., Raffaelli, D., Paterson, D. M. & White, P. C. L., Dec 2008, In: Oecologia. 158, 3, p. 511-520 10 p.

Sea-level rise, expected environmental changes, and responses of intertidal benthic macrofauna in the Humber estuary, UK

Fujii, T. & Raffaelli, D., 19 Nov 2008, In: Marine Ecology Progress Series. 371, p. 23-35 13 p.

Three allometric relations of population density to body mass: theoretical integration and empirical tests in 149 food webs

Reuman, D. C., Mulder, C., Raffaelli, D. & Cohen, J. E., Nov 2008, In: Ecology Letters. 11, 11, p. 1216-1228 13 p.

Conversations in conservation: revealing and dealing with language differences in environmental conflicts

Webb, T. J. & Raffaelli, D., Aug 2008, In: Journal of Applied Ecology. 45, 4, p. 1198-1204 7 p.

Spatial and temporal characteristics of benthic invertebrate communities at Culbin Sands lagoon, Moray Firth, NE Scotland, and impacts of the disturbance of cockle harvesting

Mariyam Mendonca, V., Raffaelli, D. G., Boyle, P. & Hoskins, S., Jun 2008, In: Scientia marina. 72, 2, p. 265-278 14 p.

The functional role of wild mammals in agricultural ecosystems

Gorman, M. L. & Raffaelli, D., Apr 2008, In: Mammal Review. 38, 2-3, p. 220-230 11 p.

The impact of extreme weather events on the seagrass *Zostera noltii* and related *Hydrobia ulvae* population

Cardoso, P. G., Raffaelli, D. & Pardal, M. A., Mar 2008, In: Marine pollution bulletin. 56, 3, p. 483-492 10 p.

The impact of extreme flooding events and anthropogenic stressors on the macrobenthic communities' dynamics

Cardoso, P. G., Raffaelli, D., Lillebo, A. I., Verdelhos, T. & Pardal, M. A., 10 Feb 2008, In: Estuarine coastal and shelf science. 76, 3, p. 553-565 13 p.

The ecological role of overwintering fish in the food web of the Culbin Sands lagoon ecosystem, NE Scotland: Identifying major trophic links and testing effects of the fish *Pomatoschistus microps* (Pallas) on benthic invertebrates

Mendonca, V. M., Raffaelli, D., Boyle, P. & Emes, C., Dec 2007, In: Scientia marina. 71, 4, p. 649-660 12 p.

Influence of macrofaunal assemblages and environmental heterogeneity on microphytobenthic production in experimental systems

Dyson, K. E., Bulling, M. T., Solan, M., Hernandez-Milian, G., Raffaelli, D. G., White, P. C. L. & Paterson, D. M., 22 Oct 2007, In: PROCEEDINGS OF THE ROYAL SOCIETY B-BIOLOGICAL SCIENCES. 274, 1625, p. 2547-2554 8 p.

Interactions between shorebirds and benthic invertebrates at Culbin Sands lagoon, NE Scotland: Effects of avian predation on their prey community density and structure

Mendonca, V. M., Raffaelli, D. G. & Boyle, P. R., Sept 2007, In: *Scientia marina*. 71, 3, p. 579-591 13 p.

Anthropogenic and natural disturbance effects on a macrobenthic estuarine community over a 10-year period

Dolbeth, M., Cardoso, P. G., Ferreira, S. M., Verdelhos, T., Raffaelli, D. & Pardal, M. A., May 2007, In: *Marine pollution bulletin*. 54, 5, p. 576-585 10 p.

Polychaete assemblages as indicators of habitat recovery in a temperate estuary under eutrophication

Cardoso, P. G., Bankovic, M., Raffaelli, D. & Pardal, M. A., Jan 2007, In: *Estuarine coastal and shelf science*. 71, 1-2, p. 301-308 8 p.

Seagrass beds and intertidal invertebrates: an experimental test of the role of habitat structure

Cardoso, P. G., Raffaelli, D. & Pardal, M. A., Jan 2007, In: *HYDROBIOLOGIA*. 575, p. 221-230 10 p.

Quantifying the evidence for biodiversity effects on ecosystem functioning and services

Balvanera, P., Pfisterer, A. B., Buchmann, N., He, J-S., Nakashizuka, T., Raffaelli, D. & Schmid, B., Oct 2006, In: *Ecology Letters*. 9, 10, p. 1146-1156 11 p.

Biodiversity and ecosystem functioning: issues of scale and trophic complexity

Raffaelli, D. G., 2006, In: *Marine Ecology Progress Series*. 311, p. 285-294 10 p.

Using model systems to address the biodiversity-ecosystem functioning process

Bulling, M. T., White, P. C. L., Raffaelli, D. G. & Pierce, G. J., 2006, In: *Marine Ecology Progress Series*. 311, p. 295-309 15 p.

Reinventing the wheel in ecology research? Response

Raffaelli, D., Cardinale, B. J., Downing, A. L., Engelhardt, K. A. M., Ruesink, J. L., Solan, M. & Srivastava, D. S., 25 Mar 2005, In: *Science*. 307, 5717, p. 1875-1876 2 p.

Do marine and terrestrial ecologists do it differently?

Raffaelli, D., Solan, M. & Webb, T. J., 2005, In: *Marine Ecology Progress Series*. 304, p. 283-289 7 p.

How extinction patterns affect ecosystems

Raffaelli, D., 12 Nov 2004, In: *Science*. 306, 5699, p. 1141-1142 2 p.

Dynamic changes in seagrass assemblages under eutrophication and implications for recovery

Cardoso, P. G., Pardal, M. A., Lillebo, A. I., Ferreira, S. M., Raffaelli, D. & Marques, J. C., 12 May 2004, In: *Journal of Experimental Marine Biology and Ecology*. 302, 2, p. 233-248 16 p.

Predator-prey body size, interaction strength and the stability of a real food web

Emmerson, M. C. & Raffaelli, D., May 2004, In: *Journal of Animal Ecology*. 73, 3, p. 399-409 11 p.

Assessing environmental quality: a novel approach

Pardal, M. A., Cardoso, P. G., Sousa, J. P., Marques, J. C. & Raffaelli, D., 2004, In: *Marine Ecology Progress Series*. 267, p. 18 8 p.

Biodiversity and ecosystem processes in shallow coastal waters: an experimental approach

Raffaelli, D., Emmerson, M., Solan, M., Biles, C. & Paterson, D., Mar 2003, In: *Journal of sea research*. 49, 2, p. 133-141 9 p.

Flow modifies the effect of biodiversity on ecosystem functioning: an in situ study of estuarine sediments

Biles, C. L., Solan, M., Isaksson, I., Paterson, D. M., Emes, C. & Raffaelli, D. G., 12 Feb 2003, In: *Journal of Experimental Marine Biology and Ecology*. 285, p. 165-177 13 p.

Special issue - Benthic dynamics: In situ surveillance of the sediment-water interface - Introduction

Solan, M., Germano, J. D., Raffaelli, D. G. & Warwick, R. M., 12 Feb 2003, In: *Journal of Experimental Marine Biology and Ecology*. 285, p. 13 3 p.

The ups and downs of benthic ecology: considerations of scale, heterogeneity and surveillance for benthic-pelagic coupling

Raffaelli, D., Bell, E., Weithoff, G., Matsumoto, A., Cruz-Motta, J. J., Kershaw, P., Parker, R., Parry, D. & Jones, M., 12 Feb 2003, In: *Journal of Experimental Marine Biology and Ecology*. 285, p. 191-203 13 p.

Why do shallow-water predators migrate? Strategic models and empirical evidence from an estuarine mysid

Speirs, D., Lawrie, S., Raffaelli, D., Gurney, W. & Emes, C., 20 Nov 2002, In: *Journal of Experimental Marine Biology and Ecology*. 280, 1-2, p. 13-31 19 p.

Ecology - From Elton to mathematics and back again

Raffaelli, D., 10 May 2002, In: *Science*. 296, 5570, p. 1035-+ 2 p.

Ecology - Biodiversity and ecosystem functioning: Current knowledge and future challenges

Loreau, M., Naeem, S., Inchausti, P., Bengtsson, J., Grime, J. P., Hector, A., Hooper, D. U., Huston, M. A., Raffaelli, D., Schmid, B., Tilman, D. & Wardle, D. A., 26 Oct 2001, In: *Science*. 294, 5543, p. 804-808 5 p.

Biodiversity and ecosystem functioning: current knowledge and future challenges

Loreau, M., Naeem, S., Inchausti, P., Bengtsson, J., Hector, A., Hooper, D. U., Huston, M. A., Raffaelli, D., Tilman, D., Wardle, D. A., Grime, J. P. & Schmid, B., Oct 2001, In: *Science*. 294, 5543, p. 804-808 4 p.

Consistent patterns and the idiosyncstatic effects of biodiversity in marine ecosystems

Solan, M., Emes, C., Paterson, D. M., Raffaelli, D. & Emmerson, M. C., May 2001, In: *Nature*. 411, 6833, p. 73-77 4 p.

Small-scale patterns in the distribution of the amphipod *Corophium volutator* on the Ythan estuary, Aberdeenshire, Scotland

Lawrie, S. M., Raffaelli, D. G. & Emes, C. H., 15 Nov 2000, In: *Sarsia*. 85, 4, p. 321-327 7 p.

Projects

BESS directorate grant extension

White, P. C. L. & Raffaelli, D. G.

NATURAL ENVIRONMENT RESEARCH COUNCIL

1/02/15 → 30/04/18

DIVERSITAS International Project Office

Raffaelli, D. G.

NATURAL ENVIRONMENT RESEARCH COUNCIL

19/05/03 → 18/05/08

ECOLIVA, MC IEF Cecile Brugere: Sustainable ecosystem services and livelihoods through aquaculture development

Raffaelli, D. G.

EUROPEAN COMMISSION

1/01/10 → 31/12/11

ESRC/Natural England Placement

Raffaelli, D. G.

ECONOMIC AND SOCIAL RESEARCH COUNCIL (ESRC)

1/10/08 → 30/09/09

Ecosystems Interaction

White, P. C. L., Raffaelli, D. G., Timmis, J., Topi, C. & Bell, S. J.
10/01/12 → 9/07/14

Interdisciplinary Network for Valuing Biodiversity, Ecosystem Services and Natural Resource Use

Raffaelli, D. G.
NATURAL ENVIRONMENT RESEARCH COUNCIL
1/02/11 → 31/10/15

Marine biodiversity - ecosystem processes under

Raffaelli, D. G.
NATURAL ENVIRONMENT RESEARCH COUNCIL
1/04/07 → 31/03/10

Measuring the impacts on global biodiversity of goods and services imported into the UK

Raffaelli, D. G., Chadwick, M. T., Dawkins, E. & West, C. D.
30/09/11 → 31/03/13

RELU: International Context

Raffaelli, D. G.
ECONOMIC AND SOCIAL RESEARCH COUNCIL (ESRC)
15/11/04 → 14/04/05

UKPopNet

Raffaelli, D. G.
NATURAL ENVIRONMENT RESEARCH COUNCIL
1/04/04 → 30/09/08

UKPopNet Extension

Raffaelli, D. G.
NATURAL ENVIRONMENT RESEARCH COUNCIL
1/04/07 → 30/09/10

Whole Decision Network Analysis for Coastal Ecosystems

Raffaelli, D. G.
NATURAL ENVIRONMENT RESEARCH COUNCIL
1/10/10 → 12/11/12