

Mark Anthony Browne – Curriculum Vitae

Post-doctoral Fellow, NCEAS, 735 State St, Suite 300, Santa Barbara, CA 93101, USA

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• www.nceas.ucsb.edu/~browne

• Nationality: British

• Date of birth: 19th June 1978

Research

I work on understanding the impacts of human activities (priority pollutants, plastic debris, urbanization) on marine biodiversity and rehabilitating affected habitats (ecological engineering). I collaborate closely with colleagues at a wide range of national and international institutions, enabling a strong multi-disciplinary approach. I am particularly interested in the scientific basis for managing environmental problems and I advise the United Nations, European Union and governments (U.K., U.S.A., Australia) on this. Although I am an early-career researcher, my work has received >500 citations and I have a H-index of 10 (Scopus). I publish in highly ranked and internationally recognized journals (e.g. *Ecology*, *Environmental Science & Technology*). I have lectured (>80 contact-hours), prepared teaching materials, supervised post- and under-graduate students, and I have secured >\$410K in research funding.

Employment & education

NCEAS Post-doctoral Fellow

2014-2012

National Center for Ecological Analysis & Synthesis, UCSB, Santa Barbara, USA

IRCSET Post-doctoral Fellow

2012-2009

University College Dublin, Ireland (with TP Crowe)

EICC Post-doctoral Fellow

2009-2008

University of Sydney, Australia (with AJ Underwood, MG Chapman & RA Coleman)

Ph.D. Environmental consequences of microplastic in marine habitats **2008-2004**

University of Plymouth, U.K. (supervised by RC Thompson & TS Galloway)

B.Sc. Marine Biology & Coastal Ecology (2:1, Hons) **2000-1997**

University of Plymouth, U.K. (Hons. Project: Ecological effects of sedimentation on mussel & algal-turf assemblages supervised by A Chapman)

Research Assistant in Ecotoxicology **2004-2000**

University of Plymouth, U.K. (supervised by MH Depledge, TS Galloway & MB Jones)

International Research Intern **2000**

Alfred Wegener Institute for Polar & Marine Research, Germany (supervised by K Riese)

Teaching, thesis examination & supervision

Lecturer: development & teaching of curriculum **18 contact-hours**

B.Sc. ENVB 30010 Systems Ecology - Field Course (Leader), University College Dublin

B.Sc. BIOL 2018 Effects of fishing, University of Sydney

M.Sc. ENVI5904 Experimental design & environmental uncertainty, University of Sydney

Assistant lecturer: experimental design & ANOVA course **64 contact-hours**

Post-graduate course: Puerto Madryn, Argentina

Examiner of thesis

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| B.Sc. Environmental Biology, University College Dublin | 2011 |
| B.Sc. Marine Biology Honours project, University of Sydney | 2009 |

Under-graduate supervision

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|------------------|---|------|
| Whitney Reyes | B.Sc. (Hons) Environmental Science, UC Santa Barbara | 2012 |
| Meabh MacMahon | B.Sc. (Hons) Environmental Biology, University College Dublin | 2011 |
| Phillip Crump | B.Sc. (Hons) Environmental Science, University of Plymouth | 2007 |
| Steve Cartwright | B.Sc. (Hons) Marine Biology, University of Plymouth | 2006 |
| Daniel Stone | B.Sc. (Hons) Marine Biology, University of Plymouth | 2006 |
| Martin Dibley | B.Sc. (Hons) Geography, University of Plymouth | 2006 |

Post-graduate supervision

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|--------------------|---------------------------------|-----------|
| Fabiana T. Moreira | Ph.D. University of Sydney | 2011-2007 |
| Niamh O'Neill | M.Sc. University College Dublin | 2011-2010 |

Conference presentations & seminars (*invited)

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| 1. SETAC North America, California, USA | 2012 |
| 2. *San Diego State University, U.S.A. | 2012 |
| 3. *National Centre for Ecological Analysis & Synthesis, U.S.A. | 2012 |
| 4. *National Centre for Ecological Analysis & Synthesis, U.S.A. | 2011 |
| 5. *US Army Core of Engineers, U.S.A. | 2011 |
| 6. International Temperate Reefs Symposium, U.K. | 2011 |
| 7. *5 th International Marine Debris Conference, Hawaii | 2011 |
| 8. *UNESCO, IOC, GESAMP meeting, Paris, France | 2010 |
| 9. *SETAC Europe, Seville, Spain | 2010 |
| 10. *World Congress of Malacology, Phuket, Thailand | 2010 |

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| 11. 5th Global COE International Symposium on Modeling & Analysis of Marine Environmental Problems. Ehime, Japan | 2010 |
| 12. *Royal Botanical Gardens, Sydney, Australia | 2010 |
| 13. * Broken Bay Oyster Association &Hornsby Shire Council, Australia | 2009 |
| 14. * Royal Zoological Society Forum, Sydney, Australia | 2009 |
| 15. 8 th International Temperate Reef Symposium, Adelaide, Australia | 2009 |
| 16. British Ecological Society Meeting. University of Hertfordshire, U.K. | 2009 |
| 17. Ecological Society of Australia, Sydney, Australia | 2008 |
| 18. *NSW Department of Primary Industries, Australia | 2008 |
| 19. *University of New South Wales, Australia | 2007 |
| 20. *University of Sydney, Australia | 2007 |
| 21. *Tokyo University of Agriculture & Technology, Japan | 2007 |
| 22. *University College Dublin, Ireland | 2006 |
| 23. SETAC North America, Canada | 2006 |
| 24. *ESCA Conference, AWI, Germany | 2000 |
| 25. *AWI, Germany | 2000 |

Community engagement

Selected recent media:

BBC

1. <http://www.bbc.co.uk/news/science-environment-16709045> 2012

ABC

2. <http://www.abc.net.au/worldtoday/content/2012/s3418575.htm> 2012
3. <http://www.abc.net.au/catalyst/stories/2936248.htm> 2010

Science Daily

4. <http://www.sciencedaily.com/releases/2011/10/111020024836.htm> 2012

Science Magazine

5. http://www.sciencenews.org/view/generic/id/334341/title/Synthetic_lint_ends_up_in_oceans 2012

Scientific American

6. <http://www.scientificamerican.com/podcast/episode.cfm?id=oceans-teem-with-tiny-plastic-parti-11-11-20> 2012

Instructor of Jujitsu

3600 contact-hours

Sport England Coach

Teaching university staff, students & military

-Class-sizes: up to 100 for 10 years

-University of Plymouth & College of St Mark & St John, UK

-University of New South Wales & University of Sydney, Australia

Professional affiliations & industrial engagement

Scientific advisor:

United Nations

1. United Nations Environmental program
2. United Nations Educational, Scientific & Cultural Organization
3. Intergovernmental Oceanographic Commission
4. Joint group of Experts on the Scientific Aspects of Marine Environmental Protection

EU Government

5. European Union
6. Member of Parliament (UK)
7. Department for Fisheries, Food & Rural Affairs (UK)

8. Environment Agency (UK)
9. Natural England (UK)
10. Bristol City Council (UK)
11. Marine Institute (Ireland)
12. Fingal County Council (Ireland)

US Government

12. National Oceanic and Atmospheric Administration
13. US Army Core of Engineers

Australian Government

14. Commonwealth Scientific & Industrial Research Organisation
15. Environmental Protection Agency
16. Department of Environment & Climate Change
17. Australian Pesticides & Veterinary Medicines Authority
18. North Sydney Council
19. Marrickville Council
20. Mosman Council
21. Cooks River Council
22. Hornsby Shire Council
23. Sydney Metropolitan Catchment Management Authority
24. Kogarah Council
25. Noosa Council

Industry & non-profit

26. Patagonia
27. American Association of Textile Chemists & Colorists
28. Blue Circle
29. Boral
30. Coca Cola
31. Ocean Conservancy

Session-chair

1. SETAC North America, U.S.A. 2012
2. International Marine Debris Conference, Hawaii 2011
3. International Temperate Reef Symposium, U.K. 2011

Reviewing manuscripts for journals

1. Environmental Science & Technology
2. Proceedings of the Royal Society of London Series B
3. Biofouling
4. Marine Ecology Progress Series
5. Marine Pollution Bulletin
6. Ecotoxicology

Reviewer of grants

1. Ecological Society of Australia
2. Netherlands Organisation for Scientific Research
3. Macquarie University (Australia) Research Fellowships

Member of professional bodies

1. NCEAS Marine debris working group
2. North Sea Plastic Marine Litter Scientific Advisory Board (Chairman)
3. British Ecological Society
4. Ecological Society of Australia
5. Unitas Malacologica
6. Marine Biological Association of the United Kingdom
7. North American & European Society of Environmental Toxicology & Chemistry

Publications (516 citations, H-index of 10)

I publish in Journals such as Ecology, Marine Ecology Progress Series, Marine Pollution Bulletin, Aquatic Toxicology, Environmental Science & Technology, Human & Ecological Risk Assessment, and Marine Environmental Research because these are the most relevant quality journal in areas in which I work.

1. **Browne MA**, Crump P, Niven SJ, Teuten E, Galloway TS, Thompson RC (2011) Accumulation of Microplastic on Shorelines Worldwide: Sources and Sinks. *Environmental Science & Technology* 45, 9175–9179 (Best-paper 2011).
2. **Browne MA**, Chapman MG (2011) Water-tight solutions to engineering intertidal biodiversity in our cities. *Environmental Science & Technology* 45, 8204–820.
3. **Browne MA**, Galloway TS, Thompson RC (2010) Spatial patterns of plastic debris along estuarine shorelines. *Environmental Science & Technology* 44 (9) 3404–3409.
4. Moreira FT, **Browne MA**, Coleman RA (2010) An ecological experimental framework for investigating and managing discharges from buildings using seawater as a coolant. *Integrated Environmental Assessment & Management* 6 (3) 503-505.
5. **Browne MA**, Dissanayake A, Lowe DM, Galloway TS, Thompson RC (2008) Ingested microplastic translocates to the circulatory system of the marine mussel, *Mytilus edulis* (L.). *Environmental Science & Technology* (42) 5026–5031.
6. **Browne MA**, Galloway TS, Thompson RC (2007) Microplastic – An emerging contaminant of potential concern? *Human and Ecological Risk Assessment* 3 (4) 559-561.

7. Cartwright SR, Coleman RA, **Browne MA** (2006) Ecologically relevant effects of pulse application of copper on the limpet *Patella vulgata* L. *Marine Ecology Progress Series* (236) 187-194.
8. Galloway TS, Brown RJ, Dissanayake A, **Browne MA**, Lowe DM, Cheung, V, Depledge MH, Jones, MB (2006) The ECOMAN project: a novel approach to sustainable ecosystem function. *Marine Pollution Bulletin* (53) 186-194.
9. Coleman RA, **Browne MA**, Theobalds T (2004) Aggregation as a defence: limpet tenacity changes in response to simulated predator attack. *Ecology* (85) 1153-1159.
10. Bonacci S, **Browne MA**, Dissanayake A, Hagger JA, Corsi I, Focardi S, Galloway TS (2004) Esterase activities in the bivalve mollusk *Adamussium colbecki* as a biomarker for pollution monitoring in the Antarctic marine environment. *Marine Pollution Bulletin* (49) 445-455.
11. Brown RJ, Galloway TS, Lowe D, **Browne MA**, Dissanayake A, Jones MB, Depledge MH (2004) Differential sensitivity of three marine invertebrates to copper assessed using multiple biomarkers. *Aquatic Toxicology* (66) 267-278.
12. Galloway TS, Brown RJ, **Browne MA**, Dissanayake A, Lowe D, Jones MB, Depledge MH (2004) Ecosystem management bioindicators: the ECOMAN project - a multibiomarker approach to ecosystem management. *Marine Environmental Research* (58) 233-237.
13. Galloway TS, Brown, RJ, **Browne MA**, Dissanayake A, Lowe D, Jones MB and Depledge MH (2004) A multi-biomarker approach to ecosystem management. *Environmental Science & Technology* (38) 1723-1731.
14. O'Neill AJ, Galloway TS, **Browne MA**, Dissanayake A, Depledge MH (2004) Evaluation of toxicity in tributaries of the Mersey estuary using the isopod *A. aquaticus* (L.). *Marine Environmental Research* (58) 327-331.

15. Galloway TS, Millward N, **Browne MA**, Depledge MH (2002) Rapid assessment of organophosphorous/carbamate exposure in the bivalve mollusc *Mytilus edulis* using combined esterase activities as biomarkers. *Aquatic Toxicology* (61) 169-180.

I am finishing preparing manuscripts from projects (full-drafts available on request):

16. **Browne MA**, Dissanayake A, Galloway TS. Organophosphate biocides reduce the tenacity of limpets and viability of their haemocytes prior to the inhibition of esterase enzymes. *Environmental Science & Technology*

17. **Browne MA**, Underwood AJ. Staining the foot-prints of snails to estimate the size of their feet. *Journal of Experimental Biology*

18. **Browne MA**, Chapman MG, Underwood AJ, Echavarri-Erasun B. Tenacity of limpets on seawalls and rocky shores. *Functional Ecology*

19. **Browne MA**, Chapman MG. Effect of height and pool-size on engineering biodiversity on artificial shorelines. *Marine Ecology Progress Series*

20. **Browne MA**, Brooks PM, Clough R, Mayer-Pinto M, Crowe TP. A novel programmable system for delivering chemicals to assemblages in manipulative field experiments. *Environmental Science & Technology*

Reports

1. **Browne MA** (2010) Characterisation of microplastic debris in terrestrial, freshwater and estuarine habitats within the Hornsby Shire Catchment area. Final Report.
2. Bloxham MJ, Jones MB, Galloway TS, Lowe DM, **Browne MA**, Depledge MH (2004) Ecosystem management bio-indicators. DEFRA, DEFRA CDEP 84/5/292.

Grants (\$410K)

1. £140K EICC Fellowship, University of Sydney, Australia

Browne MA (PI)

2. \$110K IRCSET Post-doctoral Fellowship, Ireland

Browne MA (PI)

3. £76K Institute for Sustainable Solutions, University of Sydney, Australia

Coleman RC (PI), **Browne MA (CI)**, Dickman C, Wardle G, Hochuli D, McArthur C, Munn A, Gurrán N, Donald S, Gibson R, Harris M, Williams S, Murphy R, Andrew H, Deavin G, Simpson SJ.

4. £24K Boral Concrete & Blue Circle Cement, Antique Stone, ECS Services, Australia

Browne MA (PI), Coleman RA

5. \$37K Sydney CMA partnership with Coastal Councils, Australia

Browne MA (PI), Coleman RA

6. £8K North Sydney Council, Australia

Browne MA (PI), Coleman RA

7. \$12K Hornsby Shire Council, Australia

Browne MA (PI)

8. £3K Urban Facility Group, Australia

Browne MA (PI), Chapman MG

9. \$5K Nuffield Foundation, UK

Browne MA (PI), Cartwright S, Coleman RA

Professional development

Negotiating 101 (University of California, Santa Barbara) **2012**

Delivering Constructive Feedback* **2011**

Supervisory & Team Leader Skills* **2011**

Influencing Skills & Strategies* **2011**

Successful Team Skills* **2011**

Time Management for the Busy Researcher* **2011**

*part of University College Dublin Research Skills & Career Development Programme

Philosophy of Science **2007**

Taught by AJ Underwood (University of Sydney)

Seaweed identification course **2007**

Taught by C Maggs (Queens University Belfast) at Marine Biological Association, U.K.

Advanced course on experimental design & ANOVA **2006**

Taught by MG Chapman & AJ Underwood (University of Sydney) at University of Faro

Introductory course on experimental design & ANOVA **2005**

Taught by MG Chapman & AJ Underwood (University of Sydney) at University of the Azores

Taught by KR Clarke (Plymouth Marine Laboratory) at Marine Biological Association, U.K.

Referees

Dr Tasman Crowe, University College Dublin, Belfield, Dublin 4, Ireland

Email: tasman.crowe@ucd.ie

Prof. Tony Underwood, FAA, EICC, University of Sydney, NSW 2006, Australia.

Email: aju@sydney.edu.au

Prof. Gee Chapman, EICC, University of Sydney, NSW 2006, Australia.

Email: gee.chapman@sydney.edu.au

Prof. Richard Thompson, University of Plymouth, Drake Circus, Plymouth PL4 8AA, U.K.

Email: r.c.thompson@plymouth.ac.uk