

# Jane Waterhouse

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**Partner & Senior Scientist**  
C<sub>2</sub>O Consulting



## RECENT EMPLOYMENT

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2008 – present C<sub>2</sub>O Consulting  
Partner and Senior Scientist

Current projects:

- Coordinate select NRM regions to develop Major Investment Strategies to support implementation of the GBR Long Term Sustainability Plan.
- Coordinate the development of the Burdekin Water Quality Improvement Plan for NQ Dry Tropics.
- Review and update synthesis of current knowledge on water quality issues in the Fitzroy NRM region to support the updated Water Quality Improvement Plan.
- Coordinate the Great Barrier Reef Scientific Consensus Statement for water quality.

2009 – present James Cook University, TropWATER, Australia  
Research Fellow, Catchment to Reef Group

Current projects:

- National Environmental Science Program research project: Influence of the Fly River, PNG on marine resources of the Torres Strait.
- Assessment of the relative risk of degraded water quality to GBR ecosystems: Cape York, Wet Tropics, Burdekin, Fitzroy and Burnett Mary NRM regions.
- Coordinate the Reef Rescue Marine Monitoring Program flood monitoring sub-project.

2006 – 2008 Commonwealth Scientific and Industry Research Organisation (CSIRO), Australia  
Science Coordinator – Reef Water Quality Partnership and CSIRO Water for a Healthy Country Flagship Great Barrier Reef Project

2005 – 2006 Cooperative Research Centre for the Great Barrier Reef (CRC Reef), Australia

- Research Coordinator – Marine and Tropical Science Research Facility
- Project Manager – Healthy Catchments Healthy Reef
- Program Coordination – CSIRO Water for a Healthy Country

1998 – 2005 Great Barrier Reef Marine Park Authority, Townsville, Australia  
Water Quality and Coastal Development group

## QUALIFICATIONS

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- 1997 – 2000**    **Masters of Applied Science – Protected Area Management**  
James Cook University, Townsville, Qld
- 1991 – 1994**    **Bachelor of Environmental Science (Hons)**  
Murdoch University, Perth, WA
- 2002**            Queensland recreational shipmasters licence
- 2001**            PADI Rescue diver training
- 1997**            Senior first aid certificate and Advanced oxygen resuscitation (annual updates)

## CONSULTANCIES AND FUNDING GRANTS

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### **Burdekin Water Quality Improvement Plan**

### **NQ Dry Tropics**

Lead the update of the Burdekin Water Quality Improvement Plan. Involves coordination of scientific supporting studies, and update of the actual plan including revision of the supporting technical knowledge and review of the implementation plan and delivery strategy.

### **Fitzroy Water Quality Improvement Plan: Supporting Studies**

### **Fitzroy Basin Association**

Preparation of a synthesis report that incorporates the findings of the key scientific supporting studies and make recommendations for the development of the Fitzroy Water Quality Improvement Plan.

### **Regional NRM major investment strategies**

### **Reef Regions**

Coordination and contribution to the preparation of an Investment Proposal: Water quality, catchment and coastal repair for the GBR Long Term Sustainability Plan 2050 on behalf of the GBR NRM regions. January-February 2015.

### **2013 – 2014 Wet Tropics Water Quality Improvement Plan**

### **Terrain NRM**

Lead the development of a whole of region Wet Tropics Water Quality Improvement Plan including coordination of scientific supporting studies, and preparation of the actual plan including the implementation plan and delivery strategy. Lead regional stakeholder consultation. Maintained close links to the NRM Plan review process.

### **2009 – present: Research Management**

### **Reef & Rainforest Research Centre**

Manage and facilitate the design, conduct, delivery and reporting of the Reef Rescue Water Quality Research and Development program, the National Environmental Research Program Tropical Ecosystems Hub water quality research program, Great Barrier Reef Marine Monitoring Program and the Marine and Tropical Science Research Facility water quality research programs.

### **2013: Fitzroy NRM Plan Review Technical Expert**

### **Fitzroy Basin Association**

*Role:* Provide expert advice on the current status, threats and management options for coastal and marine ecosystems in the Fitzroy NRM region to inform review of the Regional NRM Plan.

### **2009 – 2011: Reef Plan Paddock to Reef Program Design**

### **Qld Department of Premier & Cabinet**

Workshop facilitation and synthesis for designing a regional-based Reef Plan Paddock to Reef Integrated Monitoring, Modelling and Reporting program.

### **2008 Clarkes Cove habitat mapping and assessment**

### **Qld Environment Protection Agency**

Expert assessment of inshore marine habitat and potential impacts of land-clearing activities.

### **2006-2008 Reef Water Quality Partnership Australian Govt Natural Heritage Trust**

Science Coordination within the Strategic Reserve Project established to support Regional NRM bodies in the GBR catchments to develop water quality targets, monitoring, modeling and reporting initiatives.

## RECENT COMMITTEES AND PANEL MEMBERSHIP

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2015 – present: Member of the Independent Science Panel for water quality in the Great Barrier Reef

2012 – present: Member of the Paddock to Reef Coordination and Advisory Group

2013 – present: Member of the Reef Plan R&D Coordination Group

2013: Coastal and Marine Technical Expert for the review of the Fitzroy NRM Plan

2013: Technical Panel for the Reef Rescue Water Quality Grants and Partnerships proposals through the Australian Government Reef Programme

## SELECTED PUBLICATIONS

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### Book Chapters

**Waterhouse, J.**, Grundy, M., Brodie, J., Gordon, I., Yorkston, H. and Eberhard, R. (2009). Great Barrier Reef case study. In: Ferrier R (ed) Handbook of Catchment Management, UK Government.

### Journal Publications

**Waterhouse, J.**, Brodie, J., Audas, D., Lewis, S. (2015). Land-sea connectivity, ecohydrology and management of the Great Barrier Reef catchment. *Ecohydrology and Hydrobiology*

Devlin, M., Petus, C., da Silva, E., Tracey, D., Wolff, N., **Waterhouse, J.**, Brodie, J. (2015). Water quality and river plume monitoring in the Great Barrier Reef: an overview of methods based on ocean colour satellite data. *Remote Sensing*, 7, 12909-12941.

Brodie, Jon, Lewis, S., Davis, A., Bainbridge, Z., O'Brien, D., **Waterhouse, J.**, Devlin, M., Thomas, C.R. (2015). Management of Agriculture to Preserve Environmental Values of the Great Barrier Reef, Australia. *Ecosystem Services and River Basin Ecohydrology*, 275 - 292.

**Waterhouse, J.**, Brodie, J., Lewis, S., Mitchell., A., (2012). Quantifying the sources of pollutants to the Great Barrier Reef. *Mar. Pollut. Bull.* 65, 394–406.

Brodie, J., Kroon, F., Schaffelke, B., Wolanski, E., Lewis, S., Devlin, M., Bainbridge, Z., **Waterhouse, J.**, Davis, A., (2012). Terrestrial pollutant runoff to the Great Barrier Reef: current issues, priorities and management responses. *Marine Pollution Bulletin* 65, 81–100.

Brodie, J., **Waterhouse, J.** (2012). A critical review of environmental management of the 'not so Great' Barrier Reef, *Estuarine, Coastal and Shelf Science*, 104-105, 1-22. doi:10.1016/j.ecss.2012.03.012

Devlin, M., Brodie, J., Wenger, A., da Silva, E., Alvarez Romero, J., **Waterhouse, J.** and McKenzie, L. (2012). Chronic and acute influences on the Great Barrier Reef: Putting extreme weather conditions in context. In: *Proceedings of the 12th International Coral Reef Symposium, Cairns, Australia, 9-13 July 2012: 21A Watershed management and reef pollution.*

Brodie, J.E., Devlin, M.J., Haynes, D., **Waterhouse, J.** (2011). Assessment of the eutrophication status of the Great Barrier Reef lagoon (Australia). *Biogeochemistry*. Online. DOI 10.1007/s10533-010-9542-2.

Eberhard, R., Robinson, C. J., **Waterhouse, J.**, Parslow, J., Hart, B., Grayson, R. and Taylor, B. (2009). Adaptive management for water quality planning – from theory to practice. *Marine and Freshwater Research* 60: 1189-1195 [doi:10.1071/MF08347]

Brodie, J., Lewis, S., Bainbridge, Z., Mitchell, A., Kroon, F. and **Waterhouse, J.** (2009). Target setting for pollutant discharge management of rivers in the Great Barrier Reef catchment area. *Marine and Freshwater Research* 60: 1141-1149 [doi:10.1071/MF08339]

### Technical Reports

**Waterhouse, J.**, Brodie, J., Tracey, D., Smith, R., Vandergragt, M., Collier, C., Petus, C., Baird, M., Kroon, F., Mann, R., Sutcliffe, T., Waters, D., Adame, F. (2017). Scientific Consensus Statement 2017: A synthesis

of the science of land-based water quality impacts on the Great Barrier Reef, Chapter 3: The risk from anthropogenic pollutants to Great Barrier Reef coastal and marine ecosystems. State of Queensland, 2017.

State of Queensland (2017). Scientific Consensus Statement 2017: A synthesis of the science of land-based water quality impacts on the Great Barrier Reef. Authors: **Waterhouse, J.**, Schaffelke, B., Bartley, R., Eberhard, R., Brodie, J., Star, M., Thorburn, P., Rolfe, J., Ronan, M., Taylor, B., Kroon, F. State of Queensland, 2017.

Lønborg, C., Devlin, M., **Waterhouse, J.**, Brinkman, R., Costello, P., da Silva, E., Davidson, J., Gunn, K., Logan, M., Petus, C., Shaffelke, B., Skuza, M., Tonin, H., Tracey, D., Wright, M., Zagorskis, I. (2016). Marine Monitoring Program: Annual Report for Inshore Water Quality Monitoring: 2014 to 2015. Report for the Great Barrier Reef Marine Park Authority. Australian Institute of Marine Science and JCU TropWATER.

**Waterhouse, J.**, Brodie, J., Coppo, C., Tracey, D., da Silva, E., Howley, C., Petus, C., McKenzie, L., Lewis, S., McCloskey, G., Higham, W. (2016). Assessment of the relative risk of water quality to ecosystems of the eastern Cape York NRM Region, Great Barrier Reef. A report to South Cape York Catchments. TropWATER Report 16/24, Townsville, Australia.: TropWATER (JCU).

**Waterhouse, J.**, Brodie, J., Petus, C., Devlin, M., da Silva, E., Maynard, J., Heron, S., Tracey, D. (2015). Recent findings of an assessment of remote sensing data for water quality measurement in the Great Barrier Reef: Supporting information for the GBR Water Quality Improvement Plans. TropWATER Report, Townsville, Australia.

**Waterhouse, J.** (compiler) (2014). Draft Wet Tropics Water Quality Improvement Plan. Prepared for Terrain NRM for the Australian Government Reef Programme, November 2014.

**Waterhouse, J.**, Brodie, J., Tracey, D., Lewis, S., Hateley, L., Brinkman, R., Furnas, M., Wolffe, N., da Silva, E., O'Brien, D., McKenzie, L. (2014). Assessment of the relative risk of water quality to ecosystems of the Wet Tropics Region, Great Barrier Reef. A report to Terrain NRM, Innisfail. Centre for Tropical Water & Aquatic Ecosystem Research (TropWATER) Report 14/27, James Cook University, Townsville, Australia. July 2014.

**Waterhouse, J.**, Maynard, J., Brodie, J., Lewis, S., Petus, C., da Silva, E., O'Brien, D., Coppo, C., Mellors, J. (2014). Assessment of the relative risk of water quality to ecosystems of the Burnett Mary Region, Great Barrier Reef. A report to Burnett Mary Regional Group, Bundaberg. TropWATER Report 14/28, Townsville, Australia.

Brodie, J., Lewis, S., Wooldridge, S., Bainbridge, Z., **Waterhouse, J.** (2014). Ecologically relevant targets for pollutant discharge from the drainage basins of the Wet Tropics Region, Great Barrier Reef. TropWATER Report 14/33. Centre for Tropical Water & Aquatic Ecosystem Research (TropWATER), James Cook University, Townsville, 45pp.

Brodie, J., **Waterhouse, J.**, Schaffelke, B., Johnson, J.E., Kroon, F., Thorburn, P., Rolfe, J., Lewis, S., Warne, M., Fabricius, K., McKenzie, L., Devlin, M., (2013). Reef Water Quality Scientific Consensus Statement 2013. Department of the Premier and Cabinet, Queensland Government, Brisbane.

Brodie, J., **Waterhouse, J.**, Schaffelke, B., Furnas, M., Maynard, J., Collier, C., Lewis, S., Warne, M., Fabricius, K., Devlin, M., McKenzie, L., Yorkston, H., Randall, L., Bennett, J., Brando, V., (2013). 2013 Scientific Consensus Statement. Chapter 3: Relative risks to the Great Barrier Reef from degraded water quality The State of Queensland. Published by the Reef Water Quality Protection Plan Secretariat, July 2013. <http://www.reefplan.qld.gov.au/about/scientific-consensus-statement/water-quality-risks.aspx>

**Waterhouse, J.**, Brodie, J., Wolanski, E., Petus, C., Higham, W. and Armstrong, T., (2013) Hazard assessment of water quality threats to Torres Strait marine waters and ecosystems. Report to the National Environmental Research Program. Reef and Rainforest Research Centre Limited, Cairns (75pp.).

**Waterhouse, J.** (2013). Assessment of the relative risk of water quality to ecosystems of the Great Barrier Reef: Supporting Studies. A report to the Department of the Environment and Heritage Protection, Queensland Government with contributions from Furnas, M., Brodie, J., Lewis, S., Devlin, M., Collier, C., Schaffelke, B., Fabricius, K., Brinkman, R., Tonin, H., O'Brien, D., Smith, R., Warne, M.St.J., Bainbridge, Z., Bartley, R., Negri, A., Turner, R.D.R., Davis, A., Bentley, C., Mueller, J., Petus, C., da Silva, E., Zeh, D., Alvarez-Romero, J.G., McKenzie, L., Waterhouse, J., Ajani, P. TropWATER Report 13/30, Townsville, Aust.

**Waterhouse, J.,** Maynard, J., Brodie, J., Randall, L., Zeh, D., Devlin, M., Lewis, S., Furnas, M., Schaffelke, B., Fabricius, K., Collier, C., Brando, V., McKenzie, L., Warne, M.St.J., Smith, R., Negri, A., Henry, N., Petus, C., da Silva, E., Waters, D., Yorkston, H., Tracey, D., (2013). Section 2: Assessment of the risk of pollutants to ecosystems of the Great Barrier Reef including differential risk between sediments, nutrients and pesticides, and among NRM regions. In: Brodie et al., Assessment of the relative risk of water quality to ecosystems of the Great Barrier Reef. A report to the Department of the Environment and Heritage Protection, Queensland Government, Brisbane. TropWATER Report 13/28, Townsville, Australia.

Devlin, M., Petus, C., da Silva, E., Alvarez-Romero, J.G., Zeh, D., **Waterhouse, J.,** Brodie, J., (2013). Chapter 5: Mapping of exposure to flood plumes, water types and exposure to pollutants (DIN, TSS) in the Great Barrier Reef: toward the production of operational risk maps for the World's most iconic marine ecosystem. In: Assessment of the relative risk of water quality to ecosystems of the Great Barrier Reef: Supporting Studies. A report to the Department of the Environment and Heritage Protection, Queensland Government, Brisbane. TropWATER Report 13/30, Townsville, Australia.

**Waterhouse, J.** and Devlin, M. (2011). Managing water quality on the Great Barrier Reef: An overview of MTSRF research outputs, 2006-2010 (MTSRF Synthesis Report).

**Waterhouse, J.** and Brodie, J.E. (2011). Identification of priority pollutants and priority areas in the Great Barrier Reef catchments (MTSRF Synthesis Report).

**Waterhouse, J.** (2010). Optimising Water Quality and Impact Monitoring, Evaluation and Reporting Programs. Synthesis Report prepared for the Marine and Tropical Sciences Research Facility (MTSRF) with contributions from K. Fabricius, R. Pearson, A. Arthington, J. Wallace, M. Sheaves, M. Waycott, L. McKenzie, P. Kuhnert, J. Brodie, S. Lewis, Z. Bainbridge, M. van Grieken, C. Robinson, T. Lynam and their research teams. Published by the Reef & Rainforest Research Centre Ltd, Cairns (151pp.).

Johnson, J., **Waterhouse, J.** and Morris, S. (Writing Team) (2011) Reef Rescue Marine Monitoring Program 2009/2010 Synthesis Report. Report prepared by the Reef and Rainforest Research Centre Consortium of monitoring providers for the Great Barrier Reef Marine Park Authority. Reef and Rainforest Research Centre Limited, Cairns (pp.).

**Waterhouse, J.** (2010). Thresholds of major pollutants with regard to impacts on instream and marine ecosystems. Synthesis Report prepared for the Marine and Tropical Sciences Research Facility (MTSRF). Published by the Reef & Rainforest Research Centre Ltd, Cairns (26pp.). Reef and Rainforest Research Centre Limited, Cairns.

Devlin, M. and **Waterhouse, J.** et al. (2010). Improved understanding of biophysical and socio-economic connections between catchment and reef ecosystems: Wet and Dry Tropics case studies (MTSRF Synthesis Report). Reef and Rainforest Research Centre Limited, Cairns.

Johnson, J., **Waterhouse, J.,** Maynard, J. and Morris, S. (Writing Team) (2010). Reef Rescue Marine Monitoring Program 2008/2009 Synthesis Report. Report prepared by the Reef and Rainforest Research Centre Consortium of monitoring providers for the Great Barrier Reef Marine Park Authority. Reef and Rainforest Research Centre Limited, Cairns (pp.).

Devlin, M., Harkness, P., McKinna, L. and **Waterhouse, J.** (2010). Mapping of risk and exposure of Great Barrier Reef ecosystems to anthropogenic water quality: A review and synthesis of current status. Report to

the Great Barrier Reef Marine Park Authority, August 2010. Australian Centre for Tropical Freshwater Research. Report Number 10/12.

**Waterhouse**, J., Higham, W., Henry, N., Eberhard, R., Chinn, C. and Johnson, J. (2009). Reef Plan Paddock to Reef Integrated Monitoring, Modelling and Reporting Program Design, July 2009. Prepared with contribution from Coordination and Advisory Group, Regional NRM Body coordinators, technical experts.

Brodie, J., **Waterhouse**, J., Lewis, S., Bainbridge, Z., Johnson, J. (2009). Current loads of priority pollutants discharged from Great Barrier Reef Catchments to the Great Barrier Reef. ACTFR Report 09/02, James Cook University, Townsville.

Brodie, J., **Waterhouse**, J. (2009). Assessment of relative risk of the impacts of broad-scale agriculture on the Great Barrier Reef and priorities for investment under the Reef Protection Package, Stage 1 Report April 2009. ACTFR Report 09/17, James Cook University Townsville. Report to DERM.

Brodie, J., Mitchell, A., **Waterhouse**, J. (2009). Regional assessment of the relative risk of the impacts of broad-scale agriculture on the Great Barrier Reef and priorities for investment under the Reef Protection Package, Stage 2 Report July 2009. ACTFR Report 09/30, James Cook University Townsville. Report to DERM.

Brodie, J., Binney, J., Fabricius, K., Gordon, I., Hoegh-Guldberg, O., Hunter, H., O'Reagain, P., Pearson, R., Quirk, M., Thorburn, P., **Waterhouse**, J., Webster, I., Wilkinson, S., (2008). Synthesis of evidence to support the Scientific Consensus Statement on Water Quality in the Great Barrier Reef. The State of Queensland (Department of the Premier and Cabinet) Brisbane.

<[http://www.reefplan.qld.gov.au/publications/scientific\\_consensus\\_statement.shtml](http://www.reefplan.qld.gov.au/publications/scientific_consensus_statement.shtml)>.

## REFEREES

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Dr Jon Brodie  
Partner & Senior Scientist  
C<sub>2</sub>O Consulting  
Tel: 0407 127 030  
Email: [j.brodie@c2o.net.au](mailto:j.brodie@c2o.net.au)

Dr Johanna Johnson  
Partner and Senior Scientist,  
C<sub>2</sub>O Consulting  
Tel: +678 5551114  
Email: [j.johnson@c2o.net.au](mailto:j.johnson@c2o.net.au)

Sheriden Morris  
Director  
Reef and Rainforest Research Centre  
Tel: 0408 019 167  
Email: [sheriden.morris@rrrc.org.au](mailto:sheriden.morris@rrrc.org.au)

Carole Sweatman  
CEO  
Terrain NRM  
Tel: 0439 743 163  
Email: [carole.sweatman@terrain.org.au](mailto:carole.sweatman@terrain.org.au)