

# IMOS Ocean Current



## Research Projects

Do coastal currents feed the harvest from purpose-built, offshore artificial reefs?, University of New South Wales, Sydney Institute for Marine Science, Iain Suthers, Micheal Lowry, Matt Taylor, Moninya Roughan, Emma Johnston, Charles Gray, 2012-2015, Funding: ARC Linkage Project, Department of Primary Industries, NSW

## Postgraduate Research Projects

## Book

## Book Chapters

Roughan, M, Schaeffer, A, Suthers, I 2015, Sustained ocean observing along the coast of southeastern Australia: NSW-IMOS 2007-2015, in Y Liu, H Kerkering, R Weisberg (eds.), Coastal Ocean Observing Systems, Elsevier, pp.76-98

## Community White Papers / Technical Papers

## Conference Proceedings

## In Press

## Journals

Patterson, J, Nayar, S, Mitchell, J, Seuront, L 2012, A local upwelling controls viral and microbial community structure in South Australian continental shelf waters, Estuarine, Coastal and Shelf Science, vol. 96, pp. 197-208, doi:10.1016/j.ecss.2011.11.009

de Lestang, S 2014, The orientation and migratory dynamics of the western rock lobster, *Panulirus cygnus*, in Western Australia, *ICES Journal of Marine Science*, vol. 71, no. 5, pp. 1052-1063, doi:10.1093/icesjms/fst205

Sawstrom, C, Beckley, L, Saunders, M, Thompson, P, Waite, A 2014, The zooplankton prey field for rock lobster phyllosoma larvae in relation to oceanographic features of the south-eastern Indian Ocean, *Journal of Plankton Research*, vol. 36, no. 4, pp. 1003-1016, doi:10.1093/plankt/fbu019

Foster, SD, Griffin, DA, Dunstan, P 2014, Twenty years of high-resolution sea surface temperature imagery around Australia: inter-annual and annual variability, *PLoS One*, vol. 9, no. 7, e100762, doi:10.1371/journal.pone.0100762

Messer, L, Doubell, M, Jeffries, TC, Brown, MV, Seymour, JR 2015, Prokaryotic and diazotrophic population dynamics within a large oligotrophic inverse estuary, *Aquatic Microbial Ecology*, vol. 74, pp. 1-15, doi:10.3354/ameo01726

Xu, J, Lowe, R, Ivey, GN, Jones, N, Brinkman, GW 2015, Observations of the shelf circulation dynamics along Ningaloo Reef, Western Australia during the austral spring and summer, *Continental Shelf Research*, vol. 95, pp. 54-73, doi:10.1016/j.csr.2014.12.013

Bibiloni-Isaksson, J, Seymour, JR, Ingleton, T, Van De Kamp, J, Bodrossy, L, Brown, MV 2016, Spatial and temporal variability of aerobic anoxygenic phototrophic bacteria along the east coast of Australia, *Environmental Microbiology*, vol. 18, pp. 4485-4500, doi:10.1111/1462-2920.13436

MacDonald, HS, Roughan, M, Baird, ME, Wilkin, J 2016, The formation of a cold-core eddy in the East Australian Current, *Continental Shelf Research*, vol. 114, pp. 72-84, doi:10.1016/j.csr.2016.01.002

Sutton, A, Beckley, L 2017, Vertical structuring of epipelagic euphausiid assemblages across a thermohaline front in the south-east Indian Ocean, *Journal of Plankton Research*, vol. 39, no. 3, pp. 463-478, doi:https://doi.org/10.1093/plankt/fbx012

Roughan, M, Keating, S, Schaeffer, A, Cetina-Heredia, P, Rocha, C, Griffin, DA, Robertson, R, Suthers, I 2017, A tale of two eddies: The biophysical characteristics of two contrasting cyclonic eddies in the East Australian Current System, *Journal of Geophysical Research - Oceans*, vol. 122, pp. 2494-2518, doi:10.1002/2016JC012241

Grammer, G, Morrongiello, J, Izzo, C, Hawthorne, P, Middleton, J, Gillanders, B 2017, Coupling biogeochemical tracers with fish growth reveals physiological and environmental controls on otolith chemistry, *Ecological Monographs*, vol. 87, no. 3, pp. 487-507, doi:10.1002/ecm.1264

## Reports

Middleton, J, James, C, Luick, J, Goldsworthy, S, Tsolos, A, Teixeira, CEP, Richardson, L 2011, Survey of sonar test sites, phase 1, literature review. Milestone 3: FINAL REPORT

Rogers, P, Ward, T, van Ruth, P, Williams, A, Bruce, B, Connell, SD, Currie, DR, Davies, C, Evans, K, Gillanders, B, Goldsworthy, S, Griffin, DA, Hardman-Mountford, NJ, Ivey, AR, Kloser, R, Middleton, J, Richardson, A, Ross, AE, Tanner, JE, Young, J 2013, Physical processes, biodiversity and ecology of the Great Australian Bight region: a literature review, CSIRO

Grove, S, Finn, J 2014, Unusual strandings of greater argonaut *Argonauta argo* in Southeast Tasmania, autumn 2014, *The Malacological Society of Australia (Newsletter)*, Comments: No. 151 July 2014

Waite, A, Beckley, L, Jeffs, A, Saunders, M, Sawstrom, C, O'Rorke, R, Raes, E, Thompson, P, Feng, M, Caputi, N, Sachlikidis, N, Chan, S, Wang, M, Sutton, A 2014, Biological oceanography of western rock lobster larvae

Suthers, I 2015, Do coastal currents feed the harvest from purpose-built offshore artificial reefs?

Courtney, AJ, Spillman, CM, Lemos, R, Thomas, J, Leigh, G, Campbell, AH 2015, Physical oceanographic influences on Queensland reef fish and scallops, Comments: FRDC Project #2013/020 Final Report 153

McCulloch, M, et, al. 2016, Perth Canyon ROV exploration and sampling, Comments: Schmidt Ocean Institute Cruise FK150301 Report

Evans, K, Bax, N, Smith, D 2017, Australia State of the Environment 2016: Marine Environment, independent report to the Australian Government Minister for the Environment and Energy, Australian Government Department of the Environment and Energy

## Thesis

Sutton, A 2015, Krill in the Leeuwin Current system: Influence of oceanography and contribution to Indian Ocean zoogeography

## Data Products

Data Products null

## Public Seminars

Griffin, DA; Ocean surface currents and the search for MH370; University of Hawaii Seminar, 02/03/2017 - 02/03/2017, Hawaii, Presenter(s): David Griffin

## Conferences, Symposia or Workshops

### Conference Oral Presentation

Griffin, DA, Cahill, M; Leeuwin Current Eddies: altimetry. HF radar and SST imagery; 6th Coastal Altimetry workshop, 20/09/2012 - 21/09/2012, Riva del garda, Presenter(s): David Griffin

Griffin, DA, Cahill, M; Oceancurrent.imos.org.au and Australia's Integrated Marine Observing System; GODAE - OceanView 20 Years of Progress in Radar Altimetry Symposium, 24/09/2012 - 29/09/2012, Venice, Presenter(s): David Griffin

Griffin, DA, Cahill, M; Assessment of CryoSat sea level anomaly using HF radar and SST imagery; Ocean Surface Topography Science Team Meeting, 27/09/2012 - 28/09/2012, Venice, Presenter(s): David Griffin

Raes, E, McInnes, AS, Strutton, P, Phillips, H, Waite, A; Dinitrogen fixation in the Eastern Indian Ocean and the usage of IMOS data; Bluewater & Climate Node Science Meeting, 28/11/2012 - 29/11/2012, Hobart, Presenter(s): Eric Raes

Griffin, DA, Cahill, M; IMOS Ocean Current: monitoring Australia's ocean currents on a daily basis, for all to see; Australian Marine Science Association Conference, 07/07/2013 - 11/07/2013, Gold Coast, Presenter(s): David Griffin

Griffin, DA; Highlights of the IMOS observations of ocean currents; Australian Meteorological and Oceanographic Society (AMOS) Conference, 12/02/2014 - 14/02/2014, Hobart, Presenter(s): David Griffin

Schaeffer, A; Can we quantify the transport and frequency of bottom water uplift driven by the East Australian Current?; Australian Meteorological and Oceanographic Society (AMOS) Conference, 12/02/2014 - 14/02/2014, Hobart, Presenter(s): Amandine Schaeffer

Mantovanelli, A, Roughan, M, Keating, S, Wyatt, LR, Schaeffer, A; Has the importance of submesoscale fronts been undervalued in coastal areas bordered by the East Australian Current?; Ocean Sciences Meeting, 23/02/2014 - 28/02/2014, Honolulu, Presenter(s): Alessandra Mantovanelli

Schaeffer, A, Roughan, M, Wood, JE; Quantifying Ekman transport and bottom water uplift by a western boundary current: in-situ observations on the Australian continental shelf; Ocean Sciences Meeting, 23/02/2014 - 28/02/2014, Honolulu, Presenter(s): Amandine Schaeffer

Griffin, DA, Cahill, M; Coastal Altimetry 101; Australian Coastal Ocean Modelling and Observations (ACOMO), 07/10/2014 - 08/10/2014, Canberra, Presenter(s): David Griffin

Griffin, DA, Cahill, M; IMOS OceanCurrent - bringing ocean observations to users ; Blue Planet Symposium, 27/05/2015 - 29/05/2015, Cairns, Presenter(s): David Griffin

Jennings, S, Beckley, L; Oceanographic synopsis of the Southern Bluefin Tuna spawning ground in the Eastern Indian Ocean; Australian Marine Science Association Conference, 05/07/2015 - 09/07/2015, Geelong, Presenter(s): Shona Jennings

Potter, A, Lewis, A; Geoscience Australia's support in the search for Malaysia airlines flight MH370; Australian Marine Science Association Conference, 05/07/2015 - 09/07/2015, Geelong, Presenter(s): Adam Lewis

Wellington, M, Beckley, L, Olivar, P; Macro-zooplankton availability for foraging seabirds and the influence of meso-scale oceanographic features; Australian Marine Science Association Conference, 05/07/2015 - 09/07/2015, Geelong, Presenter(s): Max Wellington

Brushett, B, Griffin, DA; Operational drift forecast modelling in support of the AMSA search for Malaysian Airlines MH370; Australian Forum for Operational Oceanography, 21/07/2015 - 23/07/2015, Fremantle, Presenter(s): David Griffin

Roughan, M, Keating, S, Schaeffer, A, Cetina-Heredia, P; An observational study of the biophysical characteristics of two contrasting cyclonic eddies in the East Australian Current system; NZMSS and AMSA Sharing Ocean Resources - Now and in the future, 04/07/2016 - 07/07/2016, Wellington, Presenter(s): Moninya Roughan

Spencer, D, Brown, IW, Lemkert, C, Lee, SY; Could upwelling be enhancing short-term spanner crab (*Ranina ranina*) catchability?; NZMSS and AMSA Sharing Ocean Resources - Now and in the future, 04/07/2016 - 07/07/2016, Wellington, Presenter(s): David Spencer

Steinberg, C, Benthuyssen, J, Herzfeld, M, Tonin, H, et. al.; Responding to the 2016 mass coral bleaching event on the Great Barrier Reef: from observations to modelling; NZMSS and AMSA Sharing Ocean Resources - Now and in the future, 04/07/2016 - 07/07/2016, Wellington, Presenter(s): Craig Steinberg

Cahill, M; IMOS OceanCurrent web site; Australian Society for Fish Biology (ASFB) and Oceania Chondrichthyan Society (OCS) 2016, 04/09/2016 - 07/09/2016, Hobart, Presenter(s): Madeleine Cahill

Miskiewic, AG; Comparison of fish larvae communities in a young versus an old frontal eddy of the East Australian Current in relation to possible source waters; Australian Society for Fish Biology (ASFB) and Oceania Chondrichthyan Society (OCS) 2016, 04/09/2016 - 07/09/2016, Hobart

Cahill, M; What's new on OceanCurrent?: Sea CTD's and SST Percentiles; Australian Coastal and Oceans Modelling and Observations (ACOMO) Workshop, 11/10/2016 - 12/10/2016, Canberra, Presenter(s): Madeleine Cahill

Griffin, DA; Ocean surface currents and the search for MH370; Australian Coastal and Oceans Modelling and Observations (ACOMO) Workshop, 11/10/2016 - 12/10/2016, Canberra, Presenter(s): David Griffin

Cahill, M; Identifying extreme events in Australian waters using high-resolution SST; AMOS/MSNZ Conference and ANZ Climate Forum 2017, 07/02/2017 - 10/02/2017, Canberra, Presenter(s): Madeleine Cahill

Griffin, DA; Ocean surface currents and the search for MH370; ASLO 2017 Aquatic Sciences Meeting, 26/02/2017 - 03/03/2017, Honolulu, Presenter(s): David Griffin

Grammer, G; Fish ear bones record the bomb radiocarbon decline in an upwelling area off southern Australia; Australian Society for Fish Biology (ASFB) Conference, 22/07/2017 - 24/07/2017, Albany, Presenter(s): Gretchen Grammer

### Conference Poster

Schaeffer, A, Roughan, M; Topics in Australian marine science: introducing MSc students to regional oceanography using NSW-IMOS data; Australian Meteorological and Oceanographic Society (AMOS) Conference, 12/02/2014 - 14/02/2014, Hobart, Presenter(s): Amandine Schaeffer

Kerry, C, Roughan, M, Powell, B; A high resolution re-analysis for the East Australian Current; Australian Coastal Ocean Modelling and Observations (ACOMO), 07/10/2014 - 08/10/2014, Canberra

Schaeffer, A, Roughan, M; Marine Virtual Laboratory (MARVL) high-resolution ROMS test: the East Australian Current at 30 degrees South in Solitary Island Marine Park (SIMP) ; Australian Coastal Ocean Modelling and Observations (ACOMO), 07/10/2014 - 08/10/2014, Canberra

Cahill, M, Griffin, DA; IMOS OceanCurrent gridded sea level and ocean surface velocity; Australian Forum for Operational Oceanography, 21/07/2015 - 23/07/2015, Fremantle, Presenter(s): Madeleine Cahill

Cahill, M, Griffin, DA; IMOS OceanCurrent web site; Australian Forum for Operational Oceanography, 21/07/2015 - 23/07/2015, Fremantle, Presenter(s): Madeleine Cahill

Cancet, M, Griffin, DA, Lyard, F, et, al.; Assessment of the FES2014 tidal current atlas around Australia; Ocean Surface Topography Science Team (OSTST) Meeting, 31/10/2016 - 04/11/2016, La Rochelle, Presenter(s): Mathilde Cancet

### Key Note Speaker

Griffin, DA; Extreme oceanic events; AMSA-NZMSS (Australian Marine Sciences Association and New Zealand Marine Science Society) Conference, 01/07/2012 - 07/07/2012, Hobart, Presenter(s): David Griffin

### Meeting Presentation

Raes, E, McInnes, AS, Grierson, P, Strutton, P, Phillips, H, Waite, A; Nitrogen fixation in the eastern Indian Ocean; WAIMOS Annual Science Meeting, 05/11/2012 - 05/11/2012, University of Western Australia, Perth, Presenter(s): Eric Raes

Raes, E, McInnes, AS, Strutton, P, Phillips, H, Waite, A; Dinitrogen fixation along the coast of WA and the usage of IMOS data; WAIMOS Science and Data Uptake Workshop, 05/11/2012 - 05/11/2012, Perth, Presenter(s): Eric Raes

Waite, A; Coastal particle injection into a forming mesoscale eddy in the Eastern Indian Ocean - impacts on oxygen and nitrogen dynamics; University of Western Australia Seminar, 21/03/2014 - 21/03/2014, University of Western Australia, Perth, Presenter(s): Anya Waite

Waite, A; Biological oceanography of western rock lobster larvae: living on the edge of the predator pit?; Murdoch University Seminar, 17/04/2014 - 17/04/2014, Perth, Presenter(s): Anya Waite

Griffin, DA, Schiller, A; MH370 - drift of potential debris: one of the most tragic and mysterious aviation disasters of all time; Ocean Surface Topography Science Team (OSTST) Meeting, 27/10/2014 - 31/10/2014, Lake Constance, Presenter(s): David Griffin

Griffin, DA; Operational Oceanography in support of the search for MH370; Ocean Surface Topography Science Team (OSTST) Meeting, 20/10/2015 - 23/10/2015, Reston, Presenter(s): David Griffin

Griffin, DA, Roughan, M; A frontal eddy intensively sampled at sea and overflowed by SARAL; Ocean Surface Topography Science Team (OSTST) Meeting, 20/10/2015 - 23/10/2015, Reston, Presenter(s): David Griffin

Griffin, DA; Ocean surface currents and the search for MH370; Australian Transport Safety Bureau First Principles Review, 02/11/2016 - 04/11/2016, Canberra, Presenter(s): David Griffin

Griffin, DA; Ocean surface currents and the search for MH370; Briefing to Malaysian Transport Minister Liow in KL, Malaysia, 02/12/2016 - 02/12/2016, Kuala Lumpur, Presenter(s): David Griffin

Cahill, M; Validating coastal altimetry on the Greate Australian Bight; 10th Coastal Altimetry Meeting, 21/02/2017 - 24/02/2017, Florence, Presenter(s): Madeleine Cahill

Griffin, DA; Ocean surface currents and the search for MH370; CSIRO Seminar, 20/04/2017 - 20/04/2017, Hobart, Presenter(s): David Griffin

### **Plenary Address**

Gillanders, B; Ear bones of fish: turning points in fish and fisheries science ; Australian Society for Fish Biology (ASFB) Conference, 22/07/2017 - 24/07/2017, Albany, Presenter(s): Bronwyn Gillanders

### **Symposium Presentation**

Griffin, DA; Australia's boundary currents: altimetry, in-situ and model estimates; ESA Living Planet Symposium, 09/10/2013 - 13/10/2013, Edinburgh, Presenter(s): David Griffin

### **Workshop Presentation**

Griffin, DA; How ACORN data is shown on the IMOS OceanCurrent website; ACORN Workshop, 14/06/2012 - 15/06/2012, James Cook University, Townsville, Presenter(s): David Griffin

Griffin, DA, Oke, PR; Ocean forecasting and hindcasting: the importance of remote sensing; 3rd Oil and Gas Earth Observation Group Workshop, 14/09/2012 - 14/09/2012, Perth, Presenter(s): David Griffin

Cahill, M; Ocean currents near Heron Island, Great Barrier Reef, as observed using altimetry, in-situ current meters and HF radar; 7th Coastal Altimetry Workshop, 07/10/2013 - 08/10/2013, Boulder, Presenter(s): Madeleine Cahill

Raes, E, McInnes, AS, Olsen, A, Hardman-Mountford, NJ, Thompson, P, Waite, A; N2 fixation and the diazotrophic community in the eastern Indian Ocean; The 11th Annual Marine Science Student Workshop of the Australian Marine Science Association, 26/06/2014 - 27/06/2014, Rottneest Island, Presenter(s): Eric Raes

Hardman-Mountford, NJ, Hirata, T, Brewin, R, Aiken, J, King, E, Clementson, L; The global view of marine phytoplankton from ocean colour satellites; Biomass Size Spectra Workshop, 14/08/2015 - 14/08/2015, Hobart, Presenter(s): Nick Hardman-Mountford

Cahill, M; Monitoring coastal upwelling using altimetry: a feasibility study; 9th Coastal Altimetry Workshop, 18/10/2015 - 19/10/2015, Reston, Presenter(s): Madeleine Cahill

Cahill, M; Altimetry in coastal regions; Satellite Oceanography Users Workshop, 09/11/2015 - 11/11/2015, Melbourne, Presenter(s): Madeleine Cahill

Cahill, M; The OceanCurrent Website; Satellite Oceanography Users Workshop, 09/11/2015 - 11/11/2015, Melbourne, Presenter(s): Madeleine Cahill

Griffin, DA; Remote sensing at work in Australia's ocean territories; Satellite Oceanography Users Workshop, 09/11/2015 - 11/11/2015, Melbourne, Presenter(s): David Griffin

Hardman-Mountford, NJ, Hirata, T, Brewin, R, Aiken, J, King, E, Clementson, L; The global view of marine phytoplankton from ocean colour satellites; Satellite Oceanography Users Workshop, 09/11/2015 - 11/11/2015, Melbourne, Presenter(s): Nick Hardman-Mountford

Griffin, DA, Cahill, M; Jason-3, Jason-2 comparison; Jason-3 Near Real -Time Verification Workshop, 21/06/2016 - 21/06/2016, New York

Oliveira, H, Middleton, J, Oke, PR, Coleman, R; The upwelling circulation along the shelves of the Great Australian Bight: idealized simulations and the role of banks and valleys; Australian Coastal and Oceans Modelling and Observations (ACOMO) Workshop, 11/10/2016 - 12/10/2016, Canberra, Presenter(s): Hugo Oliveira

Roughan, M, Kerry, C, Rao, S, et, al.; Modelling and observing the East Australian Current system and its impacts on shelf circulation, Lagrangian transport and biogeochemistry; Australian Coastal and Oceans Modelling and Observations (ACOMO) Workshop, 11/10/2016 - 12/10/2016, Canberra, Presenter(s): Moninya Roughan

Cahill, M; Oceanography and data relevant to fisheries of SE Australia; Fishwell Research & SE Squid Fisheries Workshop, 30/01/2017 - 30/01/2017, Adelaide, Presenter(s): Madeleine Cahill