

# The Murray-Darling Freshwater Research Centre Publications | 2011



## Refereed Journal Articles (in press)

- Gawne B, Price A, Koehn JD, King AJ, Nielsen DL, Meredith S, Beesley L and Vilizzi L (Nov 2011) A bayesian belief network decision support tool for watering wetlands to maximise native fish outcomes. *Wetlands*. DOI: 10.1007/s13157-011-0255-7
- Hladyz S, Nielsen D, Suter PJ, and Krull ES (Nov 2010) Temporal variations in organic carbon utilisation by consumers in a lowland river. *River Research and Applications*. doi: 10.1002/rra.1467.
- Kattel GR (May 2011) Can we improve management practice of lakes using cladoceran zooplankton? *River Research and Applications* doi: 10.1002/rra.1527.
- Ning N, Hladyz S, Gawne B, Maffei S, Price A and Nielsen D (Nov 2011) Morphological, physiological and behavioural response patterns of carp gudgeon (*Hypseleotris* spp.) to food deprivation: implications for assessing health. *Journal of Fish Biology*.
- Whiterod NS and Sherman B (Aug 2011) Environmental gradients along a lowland weir pool in the Southern Murray-Darling Basin, Australia. *River Research and Applications*. DOI: 10.1002/rra.1563

## Refereed Journal Articles (published)

- Cruse L and Gawne B (2011) Coarse-coloured Glasses and Rights Bundling: Why the Initial Specification of Water Rights in Volumetric Terms Matters. *Economic Papers* 30(2): 135-146. doi: 10.1111/j.1759-3441.2011.00102.x
- Glover F, Whitworth KL, Kappen P, Baldwin DS, Rees GN, Webb JA and Silvester E (2011) Acidification and Buffering Mechanisms in Acid Sulfate Soil Wetlands of the Murray-Darling Basin, Australia. *Environmental Science & Technology* 45(7): 2591-2597. doi: 10.1021/es103535k.
- Hladyz S, Åbjörnsson K, Giller PS and Woodward G (2011) Impacts of an aggressive riparian invader on community structure and ecosystem functioning in stream food webs. *Journal of Applied Ecology* 48(2): 443-452. doi: 10.1111/j.1365-2664.2010.01924.x.
- Hladyz S, Cook RA, Petrie R and Nielsen DL (2011) Influence of substratum on the variability of benthic biofilm stable isotope signatures: implications for energy flow to a primary consumer. *Hydrobiologia* 664(1): 135-146.
- Laurance WF, Dell B, Turton SM, Lawes MJ, Hutley LB, McCallum H, Dale P, Bird M, Hardy G, Prideaux G, Gawne B, McMahon CR, Yu R, Hero J-M, Schwarzkopf L, Krockenberger A, Setterfield SA, Douglas M, Silvester E, Mahony M, Vellam K, Saikia U, Wahren C-H, Xu Z, Smith B and Cocklin C (2011) The 10 Australian ecosystems most vulnerable to tipping points. *Biological Conservation* 144(5): 1472-1480. doi:10.1016/j.biocon.2011.01.016 [Ben Gawne is one of 26 authors].
- Ning NSP and Nielsen DL (2011) Community structure and composition of microfaunal egg bank assemblages in riverine and floodplain sediments. *Hydrobiologia* 661(1): 211-221. doi: 10.1007/s10750-010-0525-z
- Ning N, Nielsen D and Baldwin D (2011) Assessing the potential for biotic communities to recolonise freshwater wetlands impacted by the presence of sulfidic sediments. *Freshwater Biology*. 56 (11) 2299-2315. Doi: doi:10.1111/j.1365-2427.2011.02657.x
- Perryman SE, Rees GN, Walsh CJ and Grace MR (2011) Urban Stormwater Runoff Drives Denitrifying Community Composition Through Changes in Sediment Texture and Carbon Content. *Microbial Ecology* 61(4): 932-940. doi: 10.1007/s00248-011-9833-8.
- Suter S, Rees G, Watson G, Suter P and Silvester E (2011) Decomposition of native leaf litter by aquatic hyphomycetes in an alpine stream. *Marine and Freshwater Research* (62) 841-849. Doi: 10.1071/MF10268
- Vilizzi L. (2011) Brief, protracted or flexible? Quantitative versus qualitative classification of spawning for fish in the Murray-Darling Basin. *Transactions of the Royal Society of South Australia* 135: 1-11. Vilizzi L (Oct 2011) The common carp, *Cyprinus carpio*, in the Mediterranean region: origin, distribution, economic benefits, impacts and management. *Fisheries management and Ecology*. Vol 18 (5) DOI: 10.1111/j.1365-2400.2011.00823.x
- Watkins S, Nielsen D, Quinn G and Gawne B (2011) The influence of leaf litter on zooplankton in floodplain wetlands: changes resulting from river regulation. *Freshwater Biology*. 56, 2432-2447 Doi: 10.1111/j.1365-2427.2011.02665.x

Whitworth KL and Baldwin DS (2011) Reduced sulfur accumulation in salinised sediments. *Environmental Chemistry* 8(2): 198-206. doi: 10.1071/EN10103.

Wilson JS, Baldwin DS, Rees GN and Wilson BP (2011) The effects of short-term inundation on carbon dynamics, microbial community structure and microbial activity in floodplain soil. *River Research and Applications* 27(2): 213-225. doi: 10.1002/rra.1352.

## Book Chapters

Water Policy, Tourism and Recreation: Lessons from Australia - RFF Press (2011) Edited by Lin Crase and Sue O'Keefe. Chapter 5: Why Rights Matter (Authors Lin Crase and Ben Gawne). 69-81pp.

## Technical and Consultancy Reports

Baldwin D (2011) Determining Water Regimes to Protect Floodplains under Hyper-Drought Conditions. Final Report prepared for Department of Sustainability, Environment, Water, Population and Communities, Commonwealth Environment Research Facilities (CERF) by The Murray-Darling Freshwater Research Centre, MDFRC Publication 16/2011, May, 57pp [completed July 2011]

Baldwin D, Williams J and Whitworth K (2011) Understanding Blackwater generated from the Koondrook-Perricoota Forest. Final Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 17/2011, June, 32pp [plus Appendices 1-7; 185pp].

Beesley L, Price A, King A, Gawne B, Nielsen D, Koehn J, Meredith S, Villizzi L and Hladyz S (2011) Watering floodplain wetlands in the Murray-Darling Basin for native fish. Waterlines report, National Water Commission, Canberra, September, 217pp.

Bognerhuber D and Campbell CJ (2011). Technical Report: Wetland Watering Requirements. Pig Swamp. Draft Working Document prepared for the North Central Catchment Management Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 09/2011 March, 26pp.

Bognerhuber D, Linklater D and Campbell CJ (2011) **Final**. The Darling Anabranch Adaptive Management Monitoring Program Condition Monitoring 2010. Final Report prepared for the Department of Environment, Climate Change and Water by The Murray-Darling Freshwater Research Centre, MDFRC Publication 03/2011, March, 106pp. (finalised July 2011)

Bognerhuber D, McCarthy B, Linklater D, Rehwinkel R, Walters S and Stoffels R (2011) Ecological Condition of Euston Lakes, NSW: May 2011. Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 22/2011, August, 62pp.

Campbell CJ, Johns CV and Reid CJ (2009) **Draft**. Northern Victorian Irrigation Renewal Project (NVIRP) Technical Report: Wetland and Waterway Watering Requirements. Draft Report prepared for the North Central Catchment Management Authority by The Murray-Darling Freshwater Research Centre, November, 119pp.

Cook R (2011) **Final**. Blackwater Monitoring 2010: Tocumwal to Torrumbarry Weir. Final Report prepared for the Goulburn Broken Catchment Management Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 08/2011, June, 21pp.

Cook R, Ning, N, Nielsen D, Gawne B, Vilizzi L (2011) **Draft**. Changes to the structure and function of Murray-Darling Basin rivers in response to the transition from drought. Draft Final Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 41/2011, December, 145pp.

Cook R, Ning, N, Nielsen D, Vogel M and Gawne B (2011) The analysis of the response of a large lowland river in the transition from drought to flood at key sites around Barmah - Millewa. Progress Report prepared for The Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, June, 26pp

Cook R, Ning N, Nielsen D, Vogel M and Gawne B (2011) A preliminary analysis of the response of regulated and unregulated rivers in the transition from drought to flood in the southern Murray-Darling Basin. Milestone Report prepared for the Department of Sustainability, Environment, Water, Population and Communities by The Murray-Darling Freshwater Research Centre, August, 47pp.

Cook R, Davey C, Hawking J and Paul W (2011) **Final**. MDBA Mitta Mitta River Monitoring Program - Review of Monitoring 1998 to 2009. Final Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 14/2011, August, 140pp.

Cook R, Paul W, Hawking J, Davey C, and Suter P (2011) **Final**. River Murray Biological (Macroinvertebrate) Monitoring Program – Review of Monitoring 1980-2009. Final Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 34/2011, May, 150pp.

Cook R and Petrie R (2010) **Draft**. Climate change monitoring in the Murray River catchment using aquatic macroinvertebrates. Draft Report prepared for the Murray Catchment Management Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 14/2010, September, 51pp.

- Croome R, Wheaton L, Henderson B, Oliver R, Vilizzi L, Paul W and McInerney P (2011) **Final**. River Murray Water Quality Monitoring Program: Phytoplankton Data Trend Analysis 1980-2008. Final Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre and CSIRO Land and Water, MDFRC Publication 06/2011, June, 81pp [plus Appendices I to IV, 131pp].
- Durant R, Nielsen D, Gawne B and Beesley L (2011) **Final**. Management Plan for Coonancoocabil Lagoon. Final Report prepared for the National Water Commission by The Murray-Darling Freshwater Research Centre, MDFRC Publication 05/2011, May, 29pp.
- Ellis I, Carr L and Pyke L (2011) **Final**. Conservation of Murray hardyhead *Craterocephalus fluviatilis* in Victoria: status of population monitoring, translocation and captive breeding programs 2010/11. Final Report prepared for the Mallee Catchment Management Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 26/2011, June, 44pp.
- Ellis I and Pyke L (2011) **Final**. Captive maintenance of Murray hardyhead from lower South Australian wetlands (Boggy Creek and Rocky Gully). Final Report prepared for the Department of Environment and Natural Resources by The Murray-Darling Freshwater Research Centre. MDFRC Publication 35/2011 November, 3pp.
- Ellis I and Kavanagh M (2011) **Final**. Assessment of fish movement between Butlers Creek and the Murray River: Winter 2011. Final Report prepared for the Mallee Catchment Management Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 33/2011, September, 26 pp.[Finalised May 2012]
- Ellis I and Pyke L (2011) **Final**. Captive maintenance of Murray hardyhead from four South Australian wetlands (Boggy Creek, Disher Creek, Berri Evaporation Basin and Rocky Gully). Final Report prepared for the Department of Environment and Natural Resources by The Murray-Darling Freshwater Research Centre, MDFRC Publication 11/2011, May, 10pp.
- Ellis I and Pyke L (2011) **Final**. Assessment of fish movement to and from Margooya Lagoon upon re-connection to the Murray River during elevated flows: Spring 2010. Final Report prepared for the Mallee Catchment Management Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 27/2011, June, 19pp.
- Ellis I and Pyke L (2011) **Final**. Assessment of the fish community in Margooya Lagoon post Murray river flooding (August 2011) and lateral movement upon reconnection to a rising Murray River. Final Report prepared for the Mallee Catchment Management Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 39/2011, August, 22pp.[Finalised May 2012].
- Ellis I and Wood D (2011) **Final**. Assessment of the fish community in Lake Kramen (north-west Victoria) upon re-inundation after a 17 year dry spell. Final Report prepared for the Mallee Catchment Management Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 18/2011, June, 9pp. [Finalised May 2012]
- Gawne B, Butcher R, Hale J, Kingsford R, Thomas R, Wheaton L and Hladyz S (2011). **Draft**. A Review of River Ecosystem Condition in the Murray-Darling Basin. Draft Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 01/2011, February, 117pp.
- Hawking JH (2010) **Draft**. Murray-Darling Basin Commission Biological Monitoring Program: Macroinvertebrates: Program History 1980–2009. Draft Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 02/2010, April, 36pp.
- Henderson MW, Walters SJ, Wood DB, Linklater DS, Sharpe CP, Vilizzi L, Campbell CJ, Johns CV and McCarthy B (2011) **Final**. The Living Murray Condition Monitoring at Lindsay, Mulcra and Wallpolla Islands 2009/10. Final Report prepared for the Department of Sustainability and Environment by The Murray-Darling Freshwater Research Centre, MDFRC Publication 28/2010, 297pp (finalised in March 2011).
- Henderson MW, Walters SJ, Wood DB, Sharpe CP, Vilizzi L, Campbell CJ, Johns CV, Rehwinkel R, and McCarthy B (2011) **Final**. The Living Murray Condition Monitoring at Lindsay, Mulcra and Wallpolla Islands 2010/11: Part A. Final Report prepared for the Department of Sustainability and Environment by The Murray-Darling Freshwater Research Centre, MDFRC Publication 24/2011, August, 96pp [supplementary report: Part B 97pp].
- Johns C and Campbell C (2011) **Final**. Assessing the importance of water-borne propagule movement for establishment of aquatic vegetation in a long-dry wetland. Final Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 13/2011, May, 58pp
- King A, Nielsen D, Mahoney J and Petrie R (2011) Monitoring Fish Recruitment, Water Quality and Secondary Production in Barmah-Millewa Forest, 2010 (MD1742). Progress Report 1 prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, February, 13pp.
- King AJ, Beesley L, Petrie R, Nielsen D, Mahoney J and Tonkin Z (2011) Monitoring fish recruitment, water quality and secondary production in Barmah-Millewa Forest, 2010/11. Arthur Rylah Institute for Environmental Research, Unpublished client report. Department of Sustainability and Environment, Heidelberg, Victoria. June, 59pp
- Mallen-Cooper M, King AJ, Koehn JD, Saddler S, Sharpe C, Stuart IG and Zampatti BP (2010) **Draft**. Fish requirements for the proposed upper Lindsay watercourse enhancement project. Report prepared for the Mallee Catchment Management Authority, May, 38pp. (submitted in July 2010).

- McInerney P, Gawne B and Davey C (2011) **Final**. Effect of Willow (*Salix* spp.) Removal on Freshwater Ecosystem Dynamics: Spring 2010 and Autumn 2011 Monitoring. Final Report prepared for the North East Catchment Management Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 19/2011, June, 77pp.
- McInerney P and Hawking J (2011) Murray River Macroinvertebrate Monitoring Program: Winter 2011 Progress Report. Progress Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 40/2011, December, 10pp.
- National Guidance on Acid Sulfate Soils - Principal Author Baldwin DS (2011) **Final**. National guidance for management of acid sulfate soils in inland aquatic ecosystems. Environment Protection and Heritage Council and Natural Resource Management Ministerial Council Final Report, March, 60pp.
- Ning NSP, Nielsen DL and Baldwin DS (2011) **Final**. The Impact of Sulfidic Sediments on the Zooplankton and Aquatic Plant Communities Developing from Wetland Sediments in Inland New South Wales. Final Report prepared for the NSW Environmental Trust by The Murray-Darling Freshwater Research Centre, MDFRC Publication 02/2011, February, 26pp.
- Richardson A and Stoffels R.J. (2011) **Final**. Investigation of the aquatic vertebrate fauna (fish and turtles) in Lake Moodemere. Final Report prepared for the North East Catchment Management Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 07/2011, February, 19pp.
- Richardson A and Stoffels R (2011) **Final**. Identification of the aquatic vertebrate values and their hydrological requirements for input into the Environmental Watering Plan for the lake Moodemere-Sunday Creek wetland complex. Final Report prepared for the North East Catchment Management Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 32/2011, August, 29pp.
- Scientific Technical Review Panel (2011) A review of sub-program II of the Rivers Environmental restoration program – better use of environmental water. Report prepared for the New South Wales Office of Environment and Heritage (NSW OEH), September, 31pp. (Ben Gawne is a member of the panel)
- Sharpe C (2011) **Final**. Fish colonisation of Lake GolGol following environmental watering during October/November 2010. Summary of Findings Report prepared for the Department of Environment, Climate Change and Water by The Murray-Darling Freshwater Research Centre, MDFRC Publication 04/2011, February, 8pp [finalised June 2011]
- Sharpe C, Vilizzi L and Bindokas J (2011) **Final**. Gunbower Island Annual Fish Monitoring: Autumn 2011 - includes Gunbower Forest, Gunbower Creek and the River Murray. Final Report prepared for the North Central Catchment Management Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 28/2011, July, 71pp.
- Smith L (2011) Murray River Macroinvertebrate Monitoring Program: Summer 2010 Progress Report. Progress Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 12/2011, May, 8pp.
- Smith L, Hawking J and Pitman T (2011) **Final**. Murray River Macroinvertebrate Monitoring Program: 2010 Annual Report. Final Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 23/2011, August, 52pp.
- Stoffels RJ (2011) **Final**. Drought and the ecophysiological resistance of riverine fishes to acute and chronic hypoxia; towards quantitative management of drought-induced risk. Final Report prepared for the NSW Office of Water by The Murray-Darling Freshwater Research Centre, MDFRC Publication 29/2011, July, 40pp.
- Stuart I and Sharpe C (2011) **Draft**. Assessment of Gunbower and Thompsons weir fishways. Draft Report prepared for North Central Catchment Management Authority by Kingfisher Research and The Murray-Darling Freshwater Research Centre, June, 32pp.
- Vilizzi L (2010) **Draft**. System Understanding: Fish Community Assessment. Draft Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 23/2010, July, 76pp.
- Vilizzi L, Price A, Gawne B, Beesley L, King A, Koehn J, Nielsen D (2011) Fish in Wetlands Decision Support Tool: User Manual. Prepared for the National Water Commission by The Murray-Darling Freshwater Research Centre, MDFRC Publication 31/2011, September, 53pp.
- Wallace T, Baldwin D, Stoffels R, Rees G, Nielsen D, Johns C, Campbell C and Sharpe C (2011) **Final**. 'Natural' versus 'Artificial' watering of floodplains and wetlands. Final Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 10/2011, June, 28pp.
- Wallace T (2009) **Draft Version 2.0**. The Living Murray: Condition Monitoring Program design for Hattah Lakes. Development Draft Report V2.0 prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, October, 120pp.
- Wallace T (2009) **Draft Version 2.0**. The Living Murray: Condition Monitoring Program design for Chowilla Floodplain and the Lindsay, Mulcra and Wallpolla Islands. Development Draft Report V2.0 prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, October, 145pp.
- Wallace TA and Bindokas J (2011) **Final**. The impact of drought on water quality and fish communities within refuge pools in the Lachlan River. Final Report prepared for the Lachlan Catchment Management Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 20/2011, August, 104pp.



- Walters S, Henderson M, Wood D, Chapman D, Sharpe C, Vilizzi L, Campbell C, Johns C and McCarthy B (2010) **Draft**. The Living Murray Condition Monitoring at Hattah Lakes 2009/2010. Draft Final Report prepared for the Department of Sustainability and Environment by The Murray-Darling Freshwater Research Centre, MDFRC Publication 27/2010, July, 265pp.
- Walters SJ, Henderson MW, Wood DB, Sharpe CP, Vilizzi L, Johns CV, Campbell CJ and McCarthy B (2011) **Final**. The Living Murray Condition Monitoring at Hattah Lakes 2010/11: Part A - Main Report. Final Report prepared for the Department of Sustainability and Environment by The Murray-Darling Freshwater Research Centre, MDFRC Publication 25/2011, August, 138pp [Separate Report: Part B: 91pp].
- Watson G (2010) **Final**. Feasibility Assessment of Ecological Outcomes (indicators) proposed for the Basin Plan Monitoring and Evaluation Program. Final Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 13/2010, June, 17pp.
- Whiterod N, Sharpe C and Wallace T (2010) **Draft**. An ecological risk assessment of Murrumbidgee Creek. Draft Report prepared for the Mallee Catchment Management Authority by The Murray-Darling Freshwater Research Centre, MDFRC Publication 30/2010, November, 75pp.
- Whitworth K, Williams J, Lugg A and Baldwin D (2011) **Final**. A prolonged and extensive hypoxic blackwater event in the southern Murray-Darling Basin. Final Report prepared for the Murray-Darling Basin Authority by The Murray-Darling Freshwater Research Centre and NSW DPI (Fisheries), MDFRC Publication 30/2011, June, 127 pp.
- Wood D. ed. (2011) **Final**. The Living Murray Condition Monitoring at Lindsay, Mulcra and Wallpolla Islands 2010/11: Part B. Final Report prepared for the Department of Sustainability and Environment by The Murray-Darling Freshwater Research Centre, MDFRC Publication 24/2011, August, 97pp.
- Wood D. ed. (2011) **Final**. The Living Murray Condition Monitoring at Hattah Lakes 2010/11: Part B – Supplementary Material. Final Report prepared for the Department of Sustainability and Environment by The Murray-Darling Freshwater Research Centre, MDFRC Publication 25/2011, August, 91pp.
- Young WJ, Bond N, Brooked J, Gawne B and Jones GJ (2011) Science Review of the Estimation of an Environmentally Sustainable Level of take of the Murray-Darling Basin. Final report to the Murray-Darling Basin Authority from National Flagships Water for a Healthy Country CSIRO, November, 36pp.

### Summer Cadetship Reports

- Bates C (2011) Effects of inundation of the Barmah-Millewa Forest on metabolism in the Murray River. A MDFRC Summer Cadetship Report 2010-2011. [Supervisors: Rob Cook and Paul McInerney]. February, 34pp.
- Dwyer G (2011) The use of video in the assessment of breeding behaviour and activity of the Murray hardyhead (*Craterocephalus fluviatilis*). A MDFRC Summer Cadetship Report 2010-2011. [Supervisors: Iain Ellis and Rohan Rehwinkel]. February, 19 pp.
- Jasper E (2011) The response of wetland zooplankton communities to floodplain inundation. A MDFRC Summer Cadetship Report 2010-2011. [Supervisors: Rebecca Durant and Nathan Ning]. February, 24pp.
- Press R (2011) The metabolic basis of species distributions along a thermal gradient; a test for metabolic cold adaptation in alpine crayfish. A MDFRC Summer Cadetship Report 2010-2011. [Supervisors: Rick Stoffels, Matthew Vogel and Adam Richardson]. February, 9pp.

### Conference / Poster Presentations

- Baldwin D (2011) Established M & E Programs – Yanga NP and Murray monitoring. Monitoring and Evaluating Environmental Flows Workshop, The University of Melbourne, Vic, 28 July
- Baldwin D (2011) Resilience of the ecology of a semi-arid floodplain in the face of hyper-drought. Rivers as Linked Systems 2<sup>nd</sup> Biennial Symposium of the International Society for River Science, Berlin Germany, 8-12 August
- Baldwin D and Nias D (2011) Managing environmental water allocations - Sulfidic Sediments in Inland Waterways. Managing Wetlands Workshop, National Water Commission, Canberra ACT, 6 September
- Baldwin D, Wilson J, Colloff M, Rees G, Wallace T and Whitworth K (2011) Expanding the flood-pulse concept: reciprocal provisioning of carbon between dry and wet phases in a semi-arid floodplain. Australian Society for Limnology 50<sup>th</sup> Congress, Brisbane QLD. 27 to 30 September
- Beesley L, Price A, King A, Nielsen D, Koehn J and Gawne B (2011) Monitoring responses of wetland fish to environmental watering along the Murray River. 14th International Riversymposium, Brisbane, Qld, 26 to 29 September.
- Beesley L, Price A, King A, Nielsen D, Koehn J and Gawne B (2011) Monitoring responses of wetland fish to environmental watering along the Murray River. Australian Society for Limnology 50<sup>th</sup> Congress, Brisbane QLD. 27 to 30 September.
- Bogenhuber D, Linklater D and Campbell C (2011) Results from the first year of understorey surveys along the Great Darling Anabranch an ephemeral dryland river: From drought.... Poster presentation at Australian Society for Limnology 50<sup>th</sup> Congress, Brisbane QLD. 27 to 30 September.
- Campbell C (2011) Rewetting: Recovery and response of arid floodplain wetland at two 'The Living Murray' icon sites. NSW Office of Environment & Heritage. Response of wetlands to rewetting following extensive drought, Sydney NSW. 22 November.
- Campbell C, Johns C and Walter S (2011) Vegetation response to environmental water and natural flows. 14th International Riversymposium, Brisbane, Qld, 26 to 29 September.

- Campbell CJ and Henderson M (2011) Back from the brink? Observations, recommendations and future directions: TLM research monitoring at LMW and Hattah Lakes. Presentation to the Murray-Darling Basin Authority, Canberra, 23 November.
- Carr L (2011) Black-water induced suppression of native fish spawning during the 2010-11 Murray River flood event in the Mallee. Australian Society for Fish Biology 2011 Annual Conference, Townsville, 22-24 July.
- Ellis I (2011) New findings on the ecology of the threatened Murray hardyhead (*Craterocephalus fluviatilis*) in Mallee wetlands. Australian Society for Fish Biology 2011 Annual Conference, Townsville, 22-24 July.
- Ellis I (2011) Impact of the introduced Eastern gambusia (*Gambusia Holbrooki*) on the endangered Murray hardyhead (*Craterocephalus fluviatilis*). Australian Society for Fish Biology 2011 Annual Conference, Townsville, 22-24 July.
- Ellis I (2011) Murray hardyhead-where we are at, and what happens next.... Murray Darling Basin Authority Native Fish Forum, Canberra Act. 18-19 October
- Gawne B (2011) Managing Environmental Water. La Trobe University Annual Water Forum, Wodonga Vic, 29 July
- Gawne B and Beasley L (2011) Understanding and identifying flow/ecology relationships - Water regime of wetland and floodplain plants: a new source book – Roberts and Marston and Watering Floodplain Wetlands in the Murray-Darling Basin for Native Fish Managing. Wetlands Workshop, National Water Commission, Canberra ACT, 6 September.
- Gawne B (2011) Science: challenges and opportunities, and how do communities and Local Government respond to science? Murray Darling Association 67<sup>th</sup> National Conference and AGM “Floods and Drought – Feast or Famine”, Dalby QLD, 8 September.
- Gawne B (2011) The implications of climate change and its challenges. The Deans Lecture – Part of the Climate, Sustainability and Society Lecture Series, 2011. La Trobe University, Wodonga Victoria, 22 September.
- Gawne B (2011) Overview of MDFRC. Presentation to Yellow River Conservancy Commission (YRCC) and The Pearl River Water Resources Commission (PRWRC), Wodonga Vic. 13 October
- Gawne B, Stoffels R, Price A, Campbell C and Ellis E (2011) Wetland flood responses along the Murray River. NSW Office of Environment & Heritage. Response of wetlands to rewetting following extensive drought, Sydney NSW. 22 November.
- Hadwen WL, Hladyz S, Mitrovic SM, Westhorpe DP and Rees GN (2011) Food for thought (and Graziers); The palatability of benthic algae is related to substrate type. Australian Society for Limnology 50<sup>th</sup> Congress, Brisbane QLD. 27 to 30 September
- Linklater D (2011) Dispersal of golden perch and spangles perch in the Great Darling Anabranch in response to the first major flow events in eight years. Australian Society for Fish Biology 2011 Annual Conference, Townsville, 22-24 July.
- McCarthy B (2011) Digital image analysis of river Red Gum crown condition generates less temporal variability than field scores. Australian Society for Limnology 50<sup>th</sup> Congress, Brisbane QLD. 27 to 30 September
- McInerney P (2011) The War of the Willows. MDFRC and DEME Seminar Series, Wodonga Victoria, 20 October.
- Ning NSP and Nielsen DL (2011) Assessing the potential for zooplankton and aquatic plant communities to recolonise wetlands impacted by the presence of sulfidic sediments. North American Benthological Society, Providence, Rhode Island, USA, 22 to 26 May.
- Rees G, Baldwin D, Watson G, Wilson J, Chariton A, Colloff M, Hardy C, Court L, Hartley D, Hodda M and Morgan M (2011) Persistence of floodplain soil eukaryotes during hyper-drought conditions. Rivers as Linked Systems 2<sup>nd</sup> Biennial Symposium of the International Society for River Science, Berlin Germany, 8-12 August
- Riddiford J and Gawne B (2011) The Triffecta: A Drought, Fire and Flood. The 12<sup>th</sup> International Specialised Conference on Watershed & River Basin Management, Reclife BRAZIL, 14-16 September.
- Smith L (2011) An overview of MDFRC: potential for DNA barcoding in macroinvertebrate projects. A presentation to the Biodiversity Institute of Ontario (BIO), Guelph Canada, 6 October.
- Stoffels R (2011) Challenges to assessing the ecological impact of hydrological changes to the Moodemere-Sunday Creek wetland complex. Presentation to Murray-Darling Basin Authority staff, Lake Moodemere, Victoria. 18 November.
- Whitworth K and Baldwin D (2011) Breaking the drought: Floods, carbon and prolonged hypoxia in a major river system. Rivers as Linked Systems 2<sup>nd</sup> Biennial Symposium of the International Society for River Science, Berlin Germany, 8-12 August.
- Wilson J, Baldwin D, Klein A and Rees G (2011) Changes in floodplain soil organic matter in response to inundation. Rivers as Linked Systems 2<sup>nd</sup> Biennial Symposium of the International Society for River Science, Berlin Germany, 8-12 August.
- Wood D (2011) Managed pumping versus natural flood - Influences on the fish composition at the Hattah Lakes Icon Site, Victoria. Australian Society for Limnology 50<sup>th</sup> Congress, Brisbane QLD. 27 to 30 September.

## Theses

- Hendy A (2011) The composition and diversity of plants and zooplankton within the seed and egg banks of rain-filled wetlands. Honours thesis, Faculty of Science, School of Environmental Sciences, Charles Sturt University Thurgoona campus [Supervisors: max Finlayson (Charles Sturt University), Daryl Nielsen (MDFRC) and Andrea Wilson (Charles Sturt University), June, 89pp.

- Moran N (2011) The longitudinal characteristics and flow variability of organic carbon in the Lachlan River, NSW. Honours thesis, School of Earth and Environmental Sciences, The University of Adelaide, North Terrace [Supervisors: George Ganf (University of Adelaide) and Todd Wallace (MDFRC), May, 41pp.
- Sharpe C (2011) Spawning and recruitment ecology of golden perch (*Macquaria ambigua* Richardson 1845) in the Murray and Darling Rivers. School of Environment, Griffith University 230pp [Supervisors: Angela Arthington and Brad Pusey (Griffith University) and Shaun Meredith (Swan River Trust, formerly MDFRC)].

## Lectures

- Carr L (2011) Use of Horiba. Presentation to SuniTAFE Conservation and Land Management Diploma students, Mildura Vic. 2 August
- Gawne B (2011) Reflections on Leadership. Lecture to Infinity Leadership Program students, La Trobe University, Wodonga Vic 24 May
- Gawne B (2011) River Processes. Lecture to 2<sup>nd</sup> year La Trobe University students, Wodonga Vic, 1 June
- Gawne B (2011) River Management. Lecture to 2<sup>nd</sup> year La Trobe University students, Wodonga Vic, 2 June
- Kavanagh M (2011) Science resources – Tapping into science resources: what’s available, who to contact.... Presentation to La Trobe University Bachelor of Education 2<sup>nd</sup> Year student, Mildura Victoria, 6 September.
- Nielsen D (2011) Ecology of Wetland and riverine microfauna. Lecture to Charles Sturt University 2nd year students, Thurgoona NSW, 16 March.
- Rees G (2011) Biochemistry. Lecture to Charles Sturt University 2nd year students, Thurgoona NSW, 16 March.
- Rees G (2011) Activated sludge microbiology. Lecture to La Trobe University 3rd year students, Wodonga Vic, 21 March.
- Stoffels R (2011) Fish ecology short course. Three lectures to La Trobe University 2nd year DEME students.

## Seminar Presentations

- Baldwin D (2011) Rethinking floodplains. CSIRO Land and Water Seminar Series, Canberra ACT, 9 June.
- Baldwin D (2011) Sulfidic sediments in inland waterways. A seminar presentation to National Water Commission, Canberra ACT, 14 June
- Baldwin DS, Williams J and Whitworth K (2011) Managing blackwater from the Koondrook-Perricoota State Forest: with a focus on mitigation options. Presentation to the Community Operations and Planning Advisory Committee for Koondrook-Perricoota Forest, Barham, 22 March.
- Baldwin DS, Williams J and Whitworth K (2011) Managing blackwater from the Koondrook-Perricoota State Forest: A review of literature regarding mechanisms and mitigation options and preliminary results of experiments investigating the effects of temperature. Presentation to Operational Planning Team (OPT) for Koondrook-Perricoota Forest, Deniliquin, 23 March.
- Bates C (2011) Effects of inundation of the Barmah-Millewa Forest on metabolism in the Murray River. A MDFRC Summer Cadetship Seminar. Supervisors: Rob Cook and Paul McInerney. Wodonga Victoria, 7 February.
- Bogenhuber D (2011) From dry to DAMMP: Restoring an ephemeral system. Murray-Darling Basin Authority Seminar Series, Canberra ACT. 28 September
- Croome R, Wheaton L, Henderson B (2011) Review of the Phyttoplankton . MDBA Water Quality Advisory Panel, Canberra ACT, 18 May.
- de Freitas T (2011) Migration patterns of zooplankton in lowland rivers. La Trobe University Final Honours Presentation, Wodonga, 6 April.
- Dwyer G (2011) The use of video in the assessment of breeding behaviour and activity of the Murray Hardyhead (*Craterocephalus fluviatilis*). A MDFRC Summer Cadetship Seminar. Supervisors: Iain Ellis and Rohan Rehwinkel. Mildura Victoria, 18 February.
- Dwyer G (2011) Behavioural and metabolic response of fishes to hypoxia. Preliminary Presentation La Trobe University Honours Seminar, Wodonga Victoria, 6 April.
- Dwyer G (2011) Behavioural and metabolic responses to hypoxia of fishes with different lifestyles. Final Honours seminar, La Trobe University, Wodonga Victoria, 22 December
- Ellis I (2011) Status of Murray hardyhead and breeding program in Victoria. Presentation for the Murray hardyhead Recovery Team meeting at Department of Sustainability and Environment, Mildura Victoria, 10 March.
- Gawne B (2011) The 2011 Jonathan Mann Memorial Lecture “The Basin Plan – who needs it?” The 2011 lecture will adopt a “Community Conversation” format. A panel of 6 key experts/stakeholders, moderated by eminent journalist Kerry O'Brien, will explore the key environmental, economic, social and political issues, assoc with water resource management within the MD. La Trobe University, Wodonga Victoria. 28 July.
- Gawne B (2011) Managing Environmental Water. La Trobe University Annual Water Forum, Wodonga Vic, 29 July.
- Gawne B (2011) The implications of climate change and its challenges. The Deans Lecture – Part of the Climate, Sustainability and Society Lecture Series, 2011. La Trobe University, Wodonga Victoria, 22 September.
- Gawne B (2011) Change and Resilience from scientific, artistic, indigenous and historical perspectives. Mildura Palimpsest #8, Mildura Victoria, 10 September.
- Gawne B and Beesley L (2011) Environmental watering protocols to benefit native fish. National Water Commission Water seminar products series, Canberra ACT, 22 March.
- Gawne B and Lawler S (2011) MDFRC and DEME: Part 2 the sequel. DEME / MDFRC Seminar Series, Wodonga Victoria, 16 June

- Gawne B and Lawler S (2011) MDFRC and DEME Collaboration. Part 3 Teaching opportunities: making MDFRC and DEME the place to study freshwater ecology. MDFRC and DEME Seminar Series, Wodonga Victoria, 29 August
- Gorwell J (2011) Summer Cadetship – A Technical placement 2010/2011. A MDFRC Summer Cadetship Seminar. Supervisor: Michelle Kavanagh. Mildura Victoria, 18 February.
- Gorwell J (2011) Use of the lateral line in three fishes with different feeding modes. Preliminary Presentation La Trobe University Honours Seminar, Wodonga, 6 April.
- Gorwell J (2011) The relationship between lateral line morphology and foraging behaviour in two freshwater gudgeons (Eleotridae). Final Honours seminar, La Trobe University, Wodonga Victoria, 9 December
- Hadi J (2011) Probing clay structural iron redox. The Murray-Darling Freshwater Research Centre, Wodonga Vic, 5 July
- Hawking J, Cook R, Smith L and Davey C (2011) MDBA Biological Monitoring: Macroinvertebrates. MDBA Biological Monitoring meeting, Wodonga, 2 February.
- Hawking J, Cook R, Smith L and Davey C (2011) MDBA River Murray Biological Monitoring: Macroinvertebrates. Presentation to MDBA Water Quality Advisory Panel Meeting Number 7, Brisbane, Qld, 17 February.
- Hawking J, Cook R, Davey C and Smith L (2011) Review of the MDBA's Mitta Mitta River Biological Monitoring: Macroinvertebrates. MDBA Water Quality Advisory Panel, Canberra ACT, 18 May.
- Henderson M (2011) The Living Murray Condition Monitoring at Hattah Lakes and Lindsay, Mulcra and Wallpolla Islands 2009/2010: Key findings from River Red Gum and Black Box Monitoring. Presentation at The Living Murray Condition Monitoring at Hattah and Lindsay-Mulcra-Wallpolla Icon Sites Meeting, Mildura Vic, 1 April.
- Jasper E (2011) The response of wetland zooplankton communities to floodplain inundation. A MDFRC Summer Cadetship Seminar. Supervisors: Rebecca Durant and Nathan Ning. Wodonga Victoria, 7 February.
- Jasper E (2011) Climate change effects on the emergence of zooplankton eggbank in a wetland. La Trobe University Honours preliminary presentation. Wodonga Victoria, 2 September
- Karis T (2011) Temporal and spatial variations in carbon and nutrient cycles and hydrology in the headwaters of two alpine streams. La Trobe University Honours preliminary presentation. Wodonga Victoria, 2 September
- Kavanagh M (2011) Opportunities to enhance The Living Murray Condition Monitoring at Hattah and Lindsay-Mulcra-Wallpolla Icon Sites. Presentation at The Living Murray Condition Monitoring at Hattah and Lindsay-Mulcra-Wallpolla Icon Sites Meeting, Mildura Vic, 1 April.
- Nielsen D (2011) Local wetlands and management issues. Session seminar at Charles Sturt University for the Loktak Development Authority, Thurgoona NSW, 2 August
- Nielsen D (2011) Degrees of resilience: trends from egg and seed banks. Presentation to Yellow River Conservancy Commission (YRCC) and The Pearl River Water Resources Commission (PRWRC), Wodonga Vic. 13 October
- Nielsen D and Cook R (2011) Wetting of Barmah-Millewa Forest: what goes in and what comes out. DEME / MDFRC Seminar Series, La Trobe University, Wodonga Victoria, 18 August.
- Petrie R (2011) The Rotary Murray-Darling School of Freshwater Research 2012. Presentation to Myrtleford Rotary, Myrtleford, Victoria, 7 September.
- Press R (2011) The metabolic basis of species distributions along a thermal gradient; a test for metabolic cold adaptation in alpine crayfish. A MDFRC Summer Cadetship Seminar. Supervisors: Rick Stoffels, Matthew Vogel and Adam Richardson. Wodonga Victoria, 7 February.
- Rehwinkel R, Dwyer G and Ellis I (2011) Antagonistic effects of Eastern Gambusia (*Gambusia holbrooki*) on the Murray hardyhead (*Craterocephalus fluviatilis*); experimental tank trials. MDFRC All Talk Series, Skype MDFRC Mildura and Wodonga, 25 February.
- Rees G, Baldwin D, Wilson J and Pitman T (2011) Floodplain ecology: response of organisms to hyperdrought. Seminar presentation to Italian Water Research Institute, Rome, 4 August
- Sharpe C (2011) The Living Murray Condition Monitoring at Hattah Lakes and Lindsay, Mulcra and Wallpolla Islands 2009/2010: Key findings from Fish Monitoring. Presentation at The Living Murray Condition Monitoring at Hattah and Lindsay-Mulcra-Wallpolla Icon Sites Meeting, Mildura, 1 April.
- Wallace T (2011) The impact of drought on water quality and fish communities within refuge pools in the Lachlan River. Presentation to Lachlan Catchment Management Authority, Forbes Victoria, 5 September.
- Walters S (2011) The Living Murray Condition Monitoring at Hattah Lakes and Lindsay, Mulcra and Wallpolla Islands 2009/2010: Key findings from Wetland and Understorey Vegetation Monitoring. Presentation at The Living Murray Condition Monitoring at Hattah and Lindsay-Mulcra-Wallpolla Icon Sites Meeting, Mildura Vic, 1 April.
- Wheaton L (2011) Presentation to Murray Darling Association, Hay NSW, 15 July
- Whitworth K (2011) Hot, black and breathless; a long summer of hypoxic blackwater in the southern Murray-Darling DEME / MDFRC Seminar Series, La Trobe University, Wodonga Victoria, 8 September
- Whitworth K (2011) Breaking the drought: Floods, carbon and prolonged hypoxia in a major river system. Presentation to Yellow River Conservancy Commission (YRCC) and The Pearl River Water Resources Commission (PRWRC), Wodonga Vic. 13 October
- Whitworth K and Baldwin D (2011) A prolonged and extensive hypoxic blackwater event. Presentation to MDBA Water Quality Advisory Panel Meeting Number 7, Brisbane, Qld, 17 February.
- Whitworth K and Baldwin D (2011) A prolonged and extensive hypoxic blackwater event. A scientific presentation to MDFRC Governing Board 1/2011 meeting, Wodonga Vic, 3 March.



Whitworth K, Williams J and Baldwin D (2011) Hot, black and breathless: a long summer of hypoxic blackwater in the southern MDB. MDBA Seminar, Canberra, 27 July.

Wijeratne N (2011) Hyper-drought effects on phosphorous dynamics in wetland soils. DEME and MDFRC Seminar Series, Wodonga Vic, 24 March.

Wood D (2011) The Living Murray Condition Monitoring at Hattah Lakes and Lindsay, Mulcra and Wallpolla Islands 2009/2010: Key findings from Lignum and Cumbungi Monitoring. Presentation at The Living Murray Condition Monitoring at Hattah and Lindsay-Mulcra-Wallpolla Icon Sites Meeting, Mildura Vic, 1 April.

### **Fact Sheets | Discussion Papers | Information Sheets**

Breaking the drought: Floods, carbon and prolonged hypoxia in a major river system. MDFRC Fact Sheet. October 2011. 2pp

National Water Commission (2011) Minimising environmental damage for inland wetland recovery. September 2011. 4pp

National Water Commission (2011) Optimising environmental water protocols to maximise benefits to native fish populations. September 2011. 4pp

Strategic Freshwater Ecological Research to Inform Management. Briefing Note (Gawne B, 2011), June, 2pp.

The Rotary Murray-Darling School of Freshwater Research 2012. MDFRC Fact Sheet September 2011.

The Impact of Sulfidic Sediments on the Biotic Communities Developing from the Sediments of Inland Wetlands (Ning, February 2011)

MDFRC has provided imagery to the DSEWPaC (Water Quality Policy Section) for inclusion in a blackwater fact sheet for public dissemination and information.

### **Other**

MDFRC (2011) The Murray-Darling Freshwater Research Centre Final Report: November 2010 to mid-May 2011. Final Report prepared for the Department of Sustainability, Environment, Water, Population and Communities by The Murray-Darling Freshwater Research Centre, MDFRC Publication 15/2011, June, 14pp (plus Appendices A to J).

National Water Commission; Beesley L, Price A, King A, Gawne B, Nielsen D, Koehn J, Meredith S, Vilizzi L and Hladyz S (2011) Watering floodplain wetlands in the Murray-Darling Basin for native fish. Waterlines Report Series No 56, September. 217pp.

National Water Commission; Baldwin DS and Capon SJ (2011) Sulfidic sediments in inland waterways. Waterlines Report Series No 55, September. 41pp.

The Murray-Darling Freshwater Research Centre (2011) Research Portfolio. Current and recently completed projects September 2011. Version 2011.3. 77pp.

The Murray-Darling Freshwater Research Centre (2011) Annual Research Report 2010. October. 43pp

MDBA (2011) Acid sulfate soils in the Murray-Darling Basin. [Darren Baldwin, Principal author], Draft Report, March, 76pp. (m/bus/383)

## **The Murray–Darling Freshwater Research Centre is a Joint Venture between CSIRO and La Trobe University**



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