

## *Curriculum Vitae*

# **Matthew C. Ives**

**B.Econ (Hons), M.E.M, PhD**

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## **CORE COMPETENCIES**

- Science-based environmental systems modelling and assessment
- Information technology management and systems development
- Project management and business analysis
- Biometric statistical analysis
- Resource economics

## **DEGREES**

- PhD on Quantitative Fisheries Management, University of NSW, Australia
- Masters of Environmental Management, Portland State University, Oregon, USA
- B. Economics (Honours) - University of NSW (Australian Finance Conference Award)

## **EMPLOYMENT HISTORY**

### **Jan '14 – Present: Infrastructure Systems Modeller, Oxford University Centre for the Environment, Environmental Change Institute**

Working as part of the Infrastructure Transitions Research Consortium ([www.itrc.org.uk](http://www.itrc.org.uk)) to develop a system-of-systems model of the UK national infrastructure with five major UK universities for the purposes of evaluating scenarios of future human development and climate change. Among the project deliverables are design documentation demonstrating the inner workings of each sector model and their inputs and outputs, a dummy version of the integrated modelling system against which a user interface and visualisation can be developed, and finally the fully integrated modelling system that will replace the dummy system and take data from a single central database and be controlled by a single user interface and visualisation tool.

### **Feb '13 – Present: Systems Manager, Systems2serve**

Systems Manager at system2serve, an information technology consultancy, providing software development and systems engineering services. Management and development of systems for a number of different clients including CrankIt Fitness (website, backend systems and business process re-engineering), BWSurf (website, backend systems and

business process re-engineering), Diagnostic Insight (custom-built manifest management software, reporting), NSW DPI (biometric statistical analysis). Matthew is also providing scientific analysis expertise to a number of clients including IC Independent Consulting.

**Oct '07 – Feb '13: Research Scientist, NSW DPI – Wild Fisheries**

Employed as the fisheries modelling and stock assessment scientist within the resource assessment team undertaking statistical analysis for fisheries experiments, stock assessment and modelling on NSW fish stocks (prawns, abalone, mulloway, snapper, flathead, etc), development and maintenance of the Aquatic Resource Assessment Systems (RAS), production of scientific manuscripts and stock assessment reports. Initially employed with NSW DPI as a co-investigator on the FRDC project 2007/016: The development of national guidelines to improve the application of risk-based methods in the scope, implementation and interpretation of stock assessments for data-poor species. This project involved researching current and past practices of risk management in Australia; and involved developing risk guidelines and benchmarks based on interviews with 60 fisheries scientists and managers from each state and territory in Australia.

**Mar '04 – Sep '07: Research Student, NSW Fisheries & University of NSW**

PhD Student, full-time – Worked with NSW Department of Primary Industries on a PhD thesis titled “A Quantitative Analysis of Prawn Harvesting Strategies in NSW”. The primary aim of this research was to develop stock assessments and apply management strategy evaluations for the sustainable management of the highly valuable prawn resources of NSW. The research project involved the development and construction of bio-economic models on prawn stocks in NSW and analysing the impact of management strategies under various economic and climate change scenarios. Models were built using Microsoft .Net and the R-project statistical programming language.

**Mar '01 – Aug '03: Research Student, Portland State University, Oregon, USA**

Graduate Assistant, part-time – Worked with Professor David Ervin and the Mt Hood National Forest on the Local Unit Indicator and Criteria Development project (LUCID). The LUCID project was a pilot study designed to (a) appraise the feasibility of a monitoring system for assessing forest sustainability at the forest management unit scale; (b) provide forest managers and collaborators with feedback that can be used to improve Forest Land Management Plans; (c) enhance the collaboration between National Forests and other governmental agencies; and (d) relate forest plan outcomes with regional and national C&I (criteria and indicator) trends. This project was used as the subject matter for a Masters of

Environmental Management Thesis titled “Monitoring of Sustainable Recreational Use in the Mt Hood National Forest, Olallie Lake Watershed”.

**Nov '00 – Aug '03: Development Manager/Business Analyst, Nautilus Group**

IT Development Manager and Business Systems Analyst – Worked extensively on the design and development of the company's new distributed n-tier e-business system known as dotCorp. The dotCorp system was a USD\$40 million system built to replace the company's entire legacy system with a thin client, n-tier e-business solution. In my capacity as IT development manager I managed a small staff of developers and was heavily involved in the design of the system, the management of individual projects within the system. As a Business Systems Analyst I worked within the project management office, documenting business processes, designing components, liaising with business experts, championing the fulfilment of business requirements, and managing the project's cost, time and quality.

**Mar '98 – Nov '00: Software Developer, PacifiCorp**

Software Developer – Technical Lead and Database Administrator on the PacifiCorp Business Information Network (BIN) system. BIN was a client/server and web based reporting tool built to provide high level management reporting on many aspects of the PacifiCorp's business. I was also technical lead on two critical Y2K projects, both of which received IT awards. Additional duties included business analysis support for retail operations, project management, and data analysis.

**Aug '93 – Dec '97: Economist/Assistant Project Manager, Draxcel Pty Limited**

Duties include the development and defence of financial, economic and environmental cost-benefit analysis for AusAID funded aid projects in China. Chinese AusAID projects included:

- Fuyang Co-Generation Facility, Anshan, Liaoning Province, China; Funding agency: Draxcel Consortium (AusAID/EFIC funding); Values: Project A\$9Million;
  - Huangshi Coal Gasification project, Huangshi, Hubie Province, China; Funding agency: Warman International Ltd (AusAID/EFIC funding); Values: Project AUD\$8.3 Million
- Additional duties included management of the company's finances, superannuation portfolio, company's computer network, hardware and software

**PUBLICATIONS**

- O'Neill, M.F., Leigh, G.M, Wang, Y.J., Matías, B. and Ives, M.C., (2014), Linking spatial stock dynamics and economics: evaluation of indicators and fishery management for the

travelling eastern king prawn (*Melicertus plebejus*), ICES J. Mar. Sci., published online February 3, 2014 doi:10.1093/icesjms/fst218

- Robbins, W. D. Peddemors, V. M., Kennelly, S. J. and Ives, M. C. (2014), An experimental evaluation of shark detection rates by aerial observers, Journal of Experimental Marine Biology and Ecology, PLoS ONE 9(2): e83456
- Ives, M.C., Scandol, J.P., Greenville, J. (2013), A bio-economic management strategy evaluation for a multi-species, multi-fleet fishery facing a world of uncertainty, Ecological Modelling, 256, p69-84
- Ives, M.C., Scandol, J.P. (2013), BIOMAS: a bio-economic modelling and assessment system for fisheries management strategy evaluation, Ecological Modelling, , 249, p42-49, doi: 10.1016/j.ecolmodel.2012.07.006
- Walsh, C. T., Reinfelds, I. V., Ives, M. C., Gray, C. A., West, R. J. and van der Meulen, D. E. (2013), Environmental influences on the spatial ecology and spawning behaviour of an estuarine-dependent fish, *Macquaria colonorum*, Estuarine and Coastal Science, 1-12, <http://dx.doi.org/10.1016/j.ecss.2012.12.009>
- Smith, J.A, Baumgartner, L.J. Suthers, I.M, Ives, M.C., Taylor, M.T., (2012), Estimating the stocking potential of impoundments by modelling supply and demand, Freshwater Biology, doi:10.1111/j.1365-2427.2012.02801.x
- Gray, S.A., Ives, M.C., Scandol, JP, Jordan, RC, (2010), Categorising the risks in fisheries management, Fisheries Management and Ecology, 17, 501-512
- Gray, C.A. Ives, M. C. Macbeth, W. G. and Kendall, B. W., (2010), Variation in growth, mortality, length and age compositions of harvested populations of the herbivorous fish *Girella tricuspidata*, Journal of Fish Biology, 76, 880–899
- Ives, M.C., Scandol, J.P., Montgomery, S.S. and Suthers, I.M., (2009). Modelling the possible effects of climate change on an Australian multi-fleet prawn fishery. Marine and Freshwater Research. 60, 1211-1222
- Ives, M.C. and Scandol, J.P., 2007. A Bayesian analysis of NSW eastern king prawn stocks (*Melicertus plebejus*) using multiple model structures. Fish. Res. 84, 314-327.
- Ives M.C. and Scandol J.P. (2005) A Bayesian Analysis of NSW Eastern King Prawn Stocks (*Melicertus plebejus*), In Zerger A and Argent RM (eds) MODSIM 2005 International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, December 2005, pp. 170-176. ISBN: 0-9758400-2-9.
- Scandol J.P., Ives M.C. (2005) RAS: An internet-based resource assessment system for multi-species fisheries monitoring and management, Proceedings of a workshop conducted by the Australian Society for Fish Biology, 11-15th July 2005'. Darwin,

Northern Territory. (Eds PC Coutin, M Grubert and M Phelan) pp. 1-11. (Australian Society for Fish Biology)

## **THESES**

- PhD Thesis: A Quantitative Analysis of Prawn Harvesting Strategies. The results of this thesis were utilised by NSW DPI in setting the future management strategy for the harvesting of Eastern King Prawns and School Prawns in NSW.
- M. Environmental Management Thesis Project: Monitoring Sustainable Recreational Use in the Mt Hood National Forest, Olallie Lake Watershed. The results of this thesis project were utilized by the U.S. Forest Service for their LUCID sustainability monitoring project.
- B. Economics Honors Thesis: Evaluation of Human Health Effects from the Huangshi Coal Gasification Project.

## **REPORTS**

- Ives, MC. (2012), Abalone Resource Analysis Report 2011, NSW Industry and Investment, Cronulla Fisheries Research Centre of Excellence, NSW, Australia, 24pp
- Ives, MC. (2011), Abalone Resource Analysis Report 2010, NSW Industry and Investment, Cronulla Fisheries Research Centre of Excellence, NSW, Australia, 25pp
- Rowling, K., Hegarty, A. and Ives, M.C. Eds (2010), Status of Fish Resources in NSW 2008/09, Industry & Investment NSW, Cronulla, 392p
- Scandol J.P., Ives M.C. and Lockett M.M. (2009) Development of national guidelines to improve the application of risk-based methods in the scope, implementation and interpretation of stock assessments for data-poor species. Final report to the Fisheries Research & Development Corporation for Project No. 2007/016. Industry & Investment NSW Final Report Series No. 115. Cronulla Fisheries Research Centre of Excellence, NSW, Australia. 184pp.