

Adrian R. Hordyk

Postdoctoral Fellow, Institute for the Oceans and Fisheries, University of British Columbia
Vancouver - British Columbia - Canada

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EDUCATION

Murdoch University, Western Australia, Doctorate of Philosophy, Fisheries Science 2014
Murdoch University, Western Australia, Bachelor of Science, First Class Honours 2009

EMPLOYMENT OVERVIEW

Complete employment history is included [below](#)

Institute for the Oceans and Fisheries, UBC:

Post-doctoral Research Fellow 2017–present

Nekton Consulting, Perth, Western Australia:

Independent Consultant 2015–2017

Centre for Fish and Fisheries Research, Murdoch University, Western Australia:

Post-doctoral Researcher 2014–2016

Biospherics Pty Ltd, Fremantle, Western Australia

Fisheries Research Scientist 2009–2015

Diversity Australia, Bibra Lake, Western Australia

Research Assistant 2008–2009

Centre for Marine Science and Technology, Curtin University, Western Australia:

Research Assistant 2007–2008

RECENT PUBLICATIONS

Full list of publications is included [below](#)

1. Hordyk, A.R., Prince, J.D., Carruthers, T.R., and Walters, C.J. (2019) Comment on “A new approach for estimating stock status from length frequency data” by Froese et al. (2018). *ICES Journal of Marine Science*. <https://doi.org/10.1093/icesjms/fsy168>
2. Prince, J., Hordyk, A., (2018). What to do when you have almost nothing: A simple quantitative prescription for managing extremely data-poor fisheries. *Fish and Fisheries* 1-15. <https://doi.org/10.1111/faf.12335>
3. Halim, A., Wiryawan, B., Loneragan, N.R., Hordyk, A., Sondita, M.F.A., White, A.T., Koeshendrajana, S., Ruchimat, T., Pomeroy, R.S., Yuni, C., (2018). Developing a functional definition of small-scale fisheries in support of marine capture fisheries management in Indonesia. *Mar. Policy* 0-1. <https://doi.org/S0308597X18303063>

4. Carruthers, T.R., Hordyk, A.R., (2018). Using management strategy evaluation to establish indicators of changing fisheries. *Can.J. Fish. Aq. Sci* <https://doi.org/10.1139/cjfas-2018-0223>
5. Carruthers, T.R., Hordyk, A.R., (2018). The data-limited methods toolkit (DLMtool): an R package for informing management of data-limited populations. *Methods Ecol. Evol.* <https://doi.org/10.1111/2041-210X.13081>
6. Hordyk, A.R. and Carruthers, T.R. (2018) A quantitative evaluation of a qualitative risk assessment framework: examining the assumptions and predictions of the productivity susceptibility analysis (PSA). *PLOS ONE*. <https://doi.org/10.1371/journal.pone.0198298>

REFERENCES

Available upon request.

PUBLICATIONS

Journal Articles

1. Hordyk, A.R., Prince, J.D., Carruthers, T.R., and Walters, C.J. (2019) Comment on “A new approach for estimating stock status from length frequency data” by Froese et al. (2018). *ICES Journal of Marine Science*. <https://doi.org/10.1093/icesjms/fsy168>
2. Prince, J., Hordyk, A., (2018). What to do when you have almost nothing: A simple quantitative prescription for managing extremely data-poor fisheries. *Fish and Fisheries* 1-15. <https://doi.org/10.1111/faf.12335>
3. Halim, A., Wiryawan, B., Loneragan, N.R., Hordyk, A., Sondita, M.F.A., White, A.T., Koeshendrajana, S., Ruchimat, T., Pomeroy, R.S., Yuni, C., (2018). Developing a functional definition of small-scale fisheries in support of marine capture fisheries management in Indonesia. *Mar. Policy* 0-1. <https://doi.org/S0308597X18303063>
4. Carruthers, T.R., Hordyk, A.R., (2018). Using management strategy evaluation to establish indicators of changing fisheries. *Can.J. Fish. Aq. Sci* <https://doi.org/10.1139/cjfas-2018-0223>
5. Carruthers, T.R., Hordyk, A.R., (2018). The data-limited methods toolkit (DLMtool): an R package for informing management of data-limited populations. *Methods Ecol. Evol.* <https://doi.org/10.1111/2041-210X.13081>
6. Hordyk, A.R. and Carruthers, T.R. (2018) A quantitative evaluation of a qualitative risk assessment framework: examining the assumptions and predictions of the productivity susceptibility analysis (PSA). *PLOS ONE*. <https://doi.org/10.1371/journal.pone.0198298>
7. Jaiteh, V.F., Hordyk, A.R., Braccini, M., Warren, C., and Loneragan, N.R. (2017). Shark finning in eastern Indonesia: Assessing the sustainability of a data-poor fishery. *ICES Journal of Marine Science*, 74, 242–253.
8. Hordyk, A.R., Ono, K., Prince, J.D., and Walters, C.J. (2016). A simple length-structured model based on life history ratios and incorporating size-dependent selectivity: application to spawning potential ratios for data-poor stocks. *Canadian Journal of Fisheries and Aquatic Sciences*, 13, 1–13.
9. Hordyk, A.R., Loneragan, N., and Prince, J. (2015) An evaluation of an iterative harvest strategy for data-poor fisheries using the length-based spawning potential ratio assessment methodology. *Fisheries Research*, 171 20–32.
10. Prince, J.D., Victor, S., Kloulchad, V., and Hordyk, A.R. (2015). Length based SPR assessment of eleven Indo-Pacific coral reef fish populations in Palau. *Fisheries Research*, 171 42–58.
11. Hordyk, A.R., Ono, K., Valencia, S., Loneragan, N., and Prince, J. (2015). A novel length-based empirical estimation method for the spawning potential ratio (SPR), and tests of its performance, for small-scale, data-poor fisheries. *ICES Journal of Marine Science*, 72 (1) 217–231.
12. Hordyk, A.R., Ono, K., Sainsbury, K., Loneragan, N., and Prince, J. (2015). Some explorations of the life history ratios to describe length composition, spawning-per-recruit, and the spawning potential ratio. *ICES Journal of Marine Science*, 72 (1) 204–216.

13. Prince, J., Hordyk, A.R., Valencia, S., Loneragan, N., and Sainsbury, K. (2015). Revisiting the concept of BevertonHolt life-history invariants with the aim of informing data-poor fisheries assessment. *ICES Journal of Marine Science*, 72 (1) 194–203.
14. Hordyk, A.R., Loneragan, N., Diver, G., and Prince J. (2011). A cost-effective alternative for assessing the size of deep-water fish aggregations. *Marine and Freshwater Research* 62 (5) 480–490.

Book Chapters

1. Dowling, N. A, Wilson, J.R., Rudd, M.B., Babcock, E.A., Caillaux, M., Cope, J., Dougherty, D., Fujita, R., Gedamke, T., Gleason, M., Gutierrez, N., Hordyk, A., Maina, G.W., Mous, P.J., Ovando, D., Parma, A.M., Prince, J., Revenga, C., Rude, J., Szuwalski, C., Valencia, S., and Victor, S. (2016). FishPath: A decision support system for assessing and managing data-and capacity-limited fisheries. In *Assessing and Managing Data-Limited Fish Stocks*. 10.4027/amdlfs.2016.03

Technical Reports

1. Hordyk, A.R and van Poorten, B. (2017). Population simulation model for evaluating alternative management strategies of the blue swimmer crab fishery in the Kien Gian province, Vietnam. Produced for Future of Fish.
2. Hordyk, A.R, Newman, D., Carruthers, T., and Suatoni, L. (2017). Applying Management Strategy Evaluation to California Fisheries: Case Studies and Recommendations. Available [here](#).
3. Loneragan, N.R., Wiryawan, B., Satria, F., Hordyk, A.R., Jaiteh, V., and Proctor, C. (2016). Methods for assessing data-poor fisheries. Report to Crawford Fund on 5 day training workshop held in Bogor, Indonesia, in August 2015.
4. Hordyk, A.R. (2013). Development of a web-based stock assessment tool. Report to USAID on development of web-based tool for stock assessment in Jakarta, Indonesia, 2013.
5. Hordyk, A.R, Prince, J., and Loneragan, N. (2013). Review of the proposal for sea-based aquaculture of abalone in Flinders Bay, Augusta. Prepared for the WA Abalone Industry Association, September 2013.
6. Hordyk, A.R, and Prince, J. (2012) Report on the April 2012 Industry Survey of Shark Bay blue swimmer crab. Prepared for the Shark Bay Prawn Trawler Operators Association Inc.

Theses

1. Hordyk, A.R. (2014). The development and application of a length-based method to estimate the spawning potential ratio in data-poor fish stocks. PhD Thesis, Murdoch University
2. Hordyk, A.R. (2009). Aggregation dynamics of orange roughy on the Cascade Plateau, south-eastern Tasmania. Honours Thesis, Murdoch University.

PRESENTATIONS

Oral Presentations

1. Jaiteh, V.F., Hordyk, A.R., Warren, C., Braccini, M., and Loneragan, N.R. What's the catch? Recent trends in the Eastern Indonesia shark fishery. Australian Society of Fish Biology and

5th International Symposium on Stock Enhancement and Sea Ranching, Sydney, Australia, October 2015.

2. Hordyk, A.R., and Prince J. Introduction to the LB-SPR method, and development of harvest control rules. Workshop on the LB-SPR methodology and its extension. UBC Fisheries Centre, Vancouver, Canada, 2 & 3 March 2015.
3. Hordyk, A.R., Novel length-based methods for assessing data-poor fish stocks. Western Australia Department of Fisheries Seminar. 20 June, 2014.
4. Hordyk, A.R., and Loneragan N. Understanding biology and its significance for the development of new approaches for assessing small-scale and data-poor fisheries. Ministry of Marine Affairs and Fisheries (MMAF), Jakarta, Indonesia, and Bogor Agricultural University (IPB), Bogor, Indonesia, 16 & 17 April 2014.
5. Hordyk, A.R., and Prince, J. Length-based estimation of the spawning potential ratio (SPR), and its application for data-poor assessment. Joint Slope and Shelf RAG meeting, September 2013, Hobart, Tasmania.
6. Hordyk, A.R., and Prince, J. Extending the principal of Beverton-Holt Life History Invariants for length based assessment of SPR. The World Conference on Stock Assessment Methods for Sustainable Fisheries, Boston, USA, 15 – 19 July 2013.
7. Prince, J., and Hordyk, A.R. Implementing the risk-catch-cost framework by linking data-poor SPR-at-Size assessment and data-rich assessment with an integrated pathway of incrementally improving assessments. The World Conference on Stock Assessment Methods for Sustainable Fisheries, Boston, USA, 15 – 19 July 2013.
8. Hordyk, A.R., Loneragan N., and Prince, J. Empirical estimation of SPR for data-poor, small-scale fisheries. UBC Fisheries Centre, University of British Columbia, BC, Canada, December 2012.
9. Hordyk, A.R., Loneragan, N., and Prince, J. Length-based empirical estimation of SPR for small-scale, data-poor fisheries. Joint Australian Society for Fish Biology and Oceania Chondrichthyan Society Annual Conference, Adelaide, SA, 15 – 18 July 2012. *Awarded the Gilbert P. Whitley Memorial Student Award.*
10. Hordyk, A.R., Loneragan, N., and Prince, J. Empirically estimating size based SPR reference points: a method for small-scale fisheries. Quantitative Seminar of the School of Aquatic & Fishery Sciences, University of Washington, Seattle, 15 April 2011.
11. Hordyk, A.R., Loneragan, N., Diver, G., and Prince, J. Aggregation dynamics of orange roughy (*Hoplostethus atlanticus*) on the Cascade Plateau, south-eastern Tasmania. Australian Society of Fish Biology Annual Conference, Melbourne Museum, Victoria, 12-14 July 2010.
12. Hordyk, A.R., Diver, G., Kobryn, H., Loneragan, N., and Prince, J. Understanding the spawning dynamics of orange roughy *Hoplostethus atlanticus* in south-eastern Australia. 8th Indo-Pacific Fish Conference & 2009 Australian Society of Fish Biology Workshop & Conference, Fremantle, Western Australia, 31 May –5 June 2009

Poster Presentations

1. Smith, J.L., Rankin, R.W, Leung, E.S., Hordyk, A.R., Chilvers, B L., and Loneragan, N.R. Using a particle-filtering state-space model to examine habitat use in juvenile New Zealand

sea lions. 5th International Biologging Conference, Strasbourg, France, 22 – 26 September 2014.

2. Prince, J., and Hordyk, A.R. First application of SPR-at-Size assessment, a new size based data-poor technique to the shallow tropical Indo-Pacific reef fish assemblage of Palau. The World Conference on Stock Assessment Methods for Sustainable Fisheries, Boston, USA, 15 – 19 July 2013.
3. Hordyk, A.R, and Prince J. Meta-analysis and MSE to develop a new data poor assessment technique. World Fisheries Congress, Edinburgh, May 2012.

SOFTWARE

1. Carruthers, T, and Hordyk, A. DLMtool: Data-Limited Methods Toolkit. 2018. Development, simulation testing, and implementation of management procedures for data-limited fisheries. [DLMtool R Package](#)
2. Hordyk, A LBSPR: Length-Based Spawning Potential Ratio. 2017. Simulate expected equilibrium length composition, yield-per-recruit, and the spawning potential ratio (SPR) using the length-based SPR (LBSPR) model. [LBSPR R Package](#)

TRAINING WORKSHOPS

1. Canadian Department of Fisheries and Oceans Training Course: MSE for Data-limited fisheries with DLMtool. Carruthers, T., and Hordyk, A. (October 2017 – January 2018). Vancouver, Canada
2. FAO Training Course: MSE for Data-limited fisheries with DLMtool. Carruthers, T., and Hordyk, A. (December 2017). Mar del Plata, Argentina.
3. 1 Day Workshop on MSE for Data-limited fisheries with DLMtool. Carruthers, T., and Hordyk, A. (August 2017). Valpariso, Chile
4. FAO Training Course: MSE for Data-limited fisheries with DLMtool. Carruthers, T., and Hordyk, A. (April 2017). Seychelles.
5. Methods for assessing data-poor fisheries. Loneragan, N.R., Wiryawan, B., Satria, F., Hordyk, A.R., Jaiteh, V., and Proctor, C. (August 2015) Bogor, Indonesia. Funded by the Crawford Foundation.

AWARDS

1. **2012** *Senior Gilbert Whitley Award for Best Student Presentation*, Australian Society for Fish Biology Annual Conference, Adelaide, Australia
2. **2010** *Australian Postgraduate Award Scholarship*, Murdoch University, Australia
3. **2010** *Murdoch University Academic Excellence Award*, Murdoch University, Australia

DETAILS OF EMPLOYMENT

Research Employment

Institute for the Oceans and Fisheries, UBC:

Post-doctoral Research Fellow

2017–present

Research is focused on developing and evaluating methods for assessing and managing fisheries, particularly data-limited fisheries where it is not possible to use a conventional stock assessment. Primary research focus is the development and application of the Data-Limited Methods Toolkit (DLMtool), an R-based software package that is designed for conducting Management Strategy Evaluation (MSE) for data-limited fisheries.

Nekton Consulting, Perth, Western Australia:

Independent Consultant - Fisheries Science 2015–2017

Contract work on various projects including:

- Develop the DLMtool, a R package designed for conducting management strategy evaluation (MSE) for data-limited stocks and apply the model to four data-limited state-managed fish stocks in California, USA, in collaboration with the Natural Resource Defense Council (NRDC) and UBC, and provide recommendations to managers on relative performance of alternative management strategies. Work closely with researchers from California Department of Fish and Wildlife to aggregate and understand fisheries data, and with industry and other stakeholders to identify other potential data sources. Present results to diverse audience and draft the technical report for the project.
- Develop a simulation model to evaluate alternative management options for the blue swimmer crab fishery in the Kien Gian province, Vietnam for Future of Fish.

Centre for Fish and Fisheries Research, Murdoch University, Western Australia:

Post-doctoral Researcher 2014–2016

Research in range of projects relating to fisheries biology and assessment. Projects include:

- The development and delivery of a training course in fisheries science that was held in Bogor, Indonesia, in 2015.
- Design and construction of web-based tool for the collection and analysis of fisheries data, and research of sustainability of shark fisheries in Eastern Indonesia.
- Supervision of Honours and PhD students.

Biospherics Pty Ltd, Fremantle, Western Australia

Fisheries Research Scientist 2009–2015

Research, data analysis, report writing and presentation and publication of results for numerous fisheries science projects, including:

- Application of length-based SPR assessment methodologies for data-poor fisheries in the tropical western Pacific, funded by the David and Lucille Packard Foundation (2014 – 2015).
- Delivery of training courses and workshops with application of length-based SPR assessment in Rome, Italy and Galicia, Spain (2014).

- Development of length-based SPR assessment method for assessing the status of data-poor fisheries, funded by the Marine Stewardship Council and the David and Lucille Packard Foundation (2010 – 2013).
- Development of online assessment tool for estimating the stock status using length data, and conducting training workshops in Jakarta, Indonesia, funded by the US Agency for International Development (2013).
- Various industry projects, including analysis and reports of crustacean and finfish fisheries in north and south Western Australia, and abalone in western Victoria and Western Australia (2012 – 2014).
- Research on board deep-sea trawlers off southern Tasmania, for acoustic surveys of orange roughy (*Hoplostethus atlanticus*), data analysis, report writing, and presentation of results to industry and scientific meetings (2009).

Diversity Australia, Bibra Lake, Western Australia

Research Assistant 2008–2009

Participation in at-sea acoustic and biological surveys on deep-sea trawlers off southern Tasmania, and GIS and database analysis work.

Centre for Marine Science and Technology, Curtin University, Western Australia:

Research Assistant 2007–2008

Research Assistant. Tasks included: design and construction of sea cages for surveying reef fish communities on Scott Reef, Western Australia.

Teaching Employment

School of Veterinary and Life Sciences, Murdoch University:

Teaching, Fish and Wildlife Populations (BIO205 & BIO249) 2013–2016

Assisted in the development and delivery of fish biology laboratory and computerbased data-analysis laboratory involving 90+ second year university students. Develop and deliver lectures on fish growth and reproduction, stock assessment, and shark biology and fisheries. Responsible for assessment and feedback for undergraduate student assignments.

Tutor, Introduction to Environmental Science (ENV102) 2012–2013

Responsible for weekly tutoring session with a group of 20 students covering lecture material and requirements for assessments, grading of assignments, and advice and feedback to first year university students.

Kulbardi Aboriginal Centre, Murdoch University:

Tutor, Indigenous Tutorial Assistance Scheme 2014–2015

Provide one-on-one weekly tutoring to a number of Murdoch students in a number of units including, Statistical Data Analysis (MAS183) and Protected Area Management and Planning (ENV246).

Other Employment

Always Electrical, Western Australia:

Licensed Electrical Mechanic

1999–2006

Installation and maintenance of residential, commercial and industrial high voltage electrical work. Key responsibilities included training and supervising apprentices, and communicating with, invoicing, and receiving payment from commercial, residential and industrial clients.