Curriculum Vitae

David J. PANNELL

Professor of Agricultural and Resource Economics, UWA School of Agriculture and Environment, University of Western Australia, Crawley WA 6009, Australia.

Co-Director, Centre for Environmental Economics and Policy, UWA.
UWA Public Policy Institute Fellow.

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Degrees

B.Sc.(Agric) (H1), University of Western Australia, 1984.
B.Ec., University of Western Australia, 1989.
Ph.D, University of Western Australia, 1991.

Awards and Recognition

2020 Ranked at #25 out of 4873 researchers globally in the category "Agricultural Economics and Policy" based on citations.[*]
2019 INFFER project assessed as High for Impact and High for Approach to Impact in the ARC's 2018 Engagement and Impact Assessment.
2019 Best poster, Australian Agricultural and Resource Economics Society annual conference, with Maksym Polyakov, Sayed Iftekhar, Asha Gunawardena and James Fogarty
2018 Best poster, Australian Agricultural and Resource Economics Society annual conference, with Maksym Polyakov and Fiona Gibson
2015 Vice Chancellor's Award in Research Mentorship, University of Western Australia.
2015 Australian Agricultural and Resource Economics Society, Quality of Research Communication award for paper on marine protected areas (with co-authors).
2014 Vice-Chancellor's Senior Research Award, University of Western Australia
2014 Australian Agricultural and Resource Economics Society, Quality of Research Communication award for paper on non-market valuation use in policy (with co-authors).
2013 INFFER project selected as one 24 "best" for impact (out of 165 submissions) in 'Excellence in Innovation for Australia' trial, by the Group of Eight (Go8) and Australian Technology Network of Universities (ATN) universities.
2012 Elected as a Fellow of the Academy of Social Sciences in Australia

[*]Ioannidis, J.P.A., Boyack, K.W. and Baas, J. (2020). Updated science-wide author databases of standardized citation indicators. *PLoS Biol* 18(10): e3000918. https://doi.org/10.1371/journal.pbio.3000918

2012 Included in journal article identifying the 100 most 'influential authors in the field of environmental and ecological economics (2000-2009)'[†]

2012 Best paper of the year authored by researchers of the Department of Primary Industries, Victoria.

2012 Pest Management Council of the Philippines, best paper award (weed science category), at Annual Scientific Conference

2012 Australian Agricultural and Resource Economics Society, Quality of Research Communication award for www.PannellDiscussions.net blog

2011 Distinguished Fellow of the Australian Agricultural and Resource Economics Society

2009 ARC Eureka Prize for Excellence in Interdisciplinary Research

2009 Australian Agricultural and Resource Economics Society, Quality of Research Discovery award

2009 Australian Agricultural and Resource Economics Society, Quality of Research Communication award

2008 UWA award: Higher Degree by Research Achievement to student Graeme Doole, for Doole and Pannell (2008) *Journal of Agricultural Economics* 59(1): 188-206.

2008 Finalist, Eureka Prize for Environmental Research

2007 Australian Research Council Federation Fellowship

2007 Invited by the Gates Foundation to *RoundTable* and a meeting of *HarvestChoice* to advise on analysis for agricultural research priorities for the poor

2007 Australian Agricultural and Resource Economics Society, Best article in *Connections: Farm, Food and Resource Issues*.

2007 Award of "Distinction" granted by UWA to PhD student Graeme Doole under my supervision.

2007 Outstanding journal reviewer for 2006, *Agricultural Systems*

2007 Australian Agricultural and Resource Economics Society, Prize for best PhD thesis in Australia or New Zealand awarded to my student, Graeme Doole.

2006 Australian Agricultural and Resource Economics Society, AARES Fellowship to attend IAAE 2006 conference.

2005 Named as one of 500 "Western Australian Leaders" by the Sunday Times newspaper.

2004 National Dryland Salinity Program, W.E. Wood Award for Excellence in Salinity Research and Development.

2004 Finalist, Eureka Prize for Research to Improve the Environmental Sustainability of Graingrowing (GRDC).

2004 Australian Agricultural and Resource Economics Society, Prize for best PhD thesis in Australia or New Zealand awarded to my student, Rick Llewellyn.

2003 Landcare Research Award (Western Australia), awarded by the National Landcare Program.

2003 American Agricultural Economics Association, Outstanding Journal Article in the *Review of Agricultural Economics* for 2002, for "Farm-Level Modeling for Bigger Issues," with Alfons Weersink and Scott Jeffrey.

2001 Canadian Agricultural Economics Society, outstanding journal article award for 2000, for "The economics of crop hail insurance," with Jim Vercammen.

1998. Australian Agricultural and Resource Economics Society, Prize for best masters thesis in Australia or New Zealand awarded to my student, Sally Marsh.

[†] Hoepner, A.G.F., Kant, B., Scholtens, B. and Yu, P.-S. (2012). Environmental and ecological economics in the 21st century: An age adjusted citation analysis of the influential articles, journals, authors and institutions, *Ecological Economics* 77: 193–206.

1997. Australian Agricultural and Resource Economics Society, Best Article in the *Review of Marketing and Agricultural Economics* during 1996: “Debugging mathematical programming models: Principles and practical strategies.”
1996. University of Western Australia "Excellence in Postgraduate Supervision" (Commendation).
1994. University of Western Australia "Excellence in Teaching" award. One of eight awards made by the University for undergraduate teaching.
1992. Australian Agricultural Economics Society PhD Thesis Prize, for best PhD thesis in agricultural and resource economics in Australia and New Zealand, 1990-1991.
1990. PhD Thesis passed with "special congratulations" (awarded to about 5 percent of successful PhDs at UWA) and with no amendments.
1990. Agricultural Economics Society (UK) Prize Essay Competition. "Responses to risk in weed control decisions under expected profit maximisation".

Research

Affiliations with research centres

CRC for Water-Sensitive Cities (2012-20)
ARC Centre of Excellence for Environmental Decisions (2011-2018)
National Environmental Science Program – Threatened Species Recovery Hub (2015-2020)
National Environmental Science Program – Northern Australia Environmental Resources Hub (2015-2020)
Bushfire and Natural Hazards CRC (2013-2020)
Bushfire CRC (2012-13)
National Environmental Research Program – Environmental Decisions Hub (2011-14)
National Environmental Research Program – Marine Biodiversity Hub (2011-14)
National Centre for Groundwater Research and Training (2010-14)
Future Farm Industries CRC (2007-14)
CRC for Plant-Based Management of Dryland Salinity (2001-07)
CRC for Legumes in Mediterranean Agriculture (1992-97)

Research areas

(a) *Resource and environmental economics and policy:* policy design; policy evaluation; Benefit: Cost Analysis; project prioritisation; policy mechanism selection; bio-economic modelling of management options; economics of monitoring sustainability indicators. Issues covered include urban water, green infrastructure, biodiversity, water quality, groundwater, dryland salinity, environmental pests, herbicide resistance, climate change. Tools: INFFEWS, INFFER, SIF3, Public: Private Benefits Framework.
(b) *Risk and uncertainty:* tactical responses to risk; risk in weed management; risk and uncertainty in farmer’s adoption decisions. Tools: Risky Business.
(c) *Adoption and diffusion of innovations:* understanding and predicting drivers of adoption and diffusion and related policy. Tools: ADOPT.
(d) *Evaluation and prioritisation of research:* the balance between basic and applied agricultural research; estimation of farm-level benefits of research; the value of information generated in research.

(e) *Farming systems economics:* rotation selection; legumes in the farming system; economics of perennials; technology evaluation. Tools: MIDAS.
(f) *Economics of weed management:* three times invited to present reviews at international conferences and three times to the Australian Weed Science Society. Tools: RIM.
(g) *Mathematical programming:* book, "Introduction to Practical Linear Programming"; journal articles on methods and practical application of MP.

Publications

Books (authored or edited), major reports	8
Articles and notes in journals	208
Book chapters	44
Invited conference papers	35
Contributed conference papers: published	35
Contributed conference papers: unpublished	77
Book reviews	6
Other	40

Citations

- Scopus.com, based on 192 of my publications, records 5,616 citations, *h* index = 38 (as of 15/01/21).
- Web of Science, based on 190 of my publications, 4,977 citations, *h* index = 35 (as of 15/01/21). ResearcherID is B-4476-2008
- Google Scholar (as of 15/01/2021) http://scholar.google.com/citations?user=6l6eii8AAAAJ&h

	All	Since 2016
Citations	14,090	5,224
h-index	58	33
i10-index	202	107

H-index and citation rankings of economists working at Australian universities

Economist	**H-Index**	**Rank H**	**Citations**	**Rank Cites**
Paresh K Narayan, Deakin U	35	1	4854	2
Knox Lovell, U Queensland	32	2	7916	1
John Geweke, UTS	30	3	3183	7
David Pannell, UWA	28	4	2862	9
David Stern, ANU	27	5	4262	4
Russell Smyth, Monash U	27	5	3031	8
Clem Tisdell, U Queensland	27	5	2652	10
John Quiggin, U Queensland	26	8	3210	6
Jan van Ours, U Melbourne	26	8	1929	17
Ronald Masulis, UNSW	25	10	3797	5

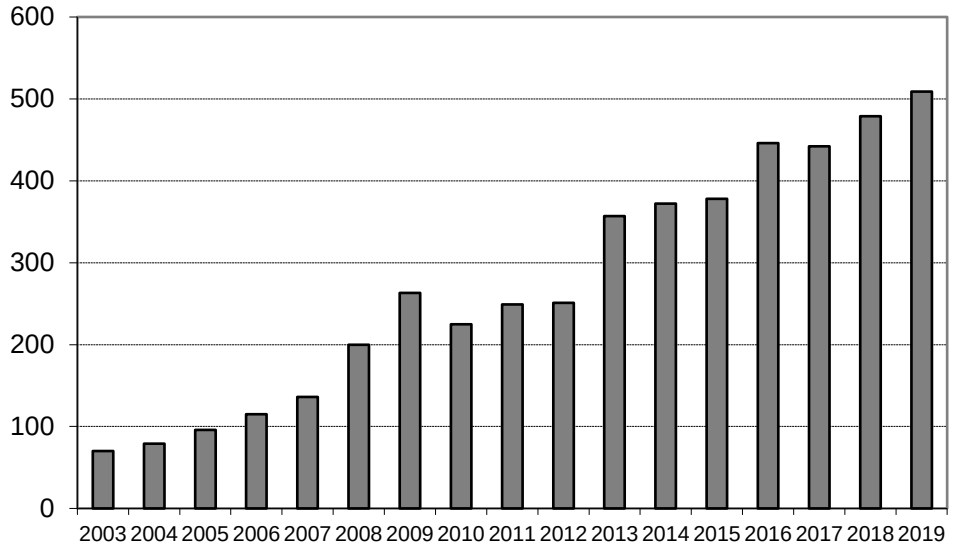
Table constructed on April 4 2016 by compiling statistics from Scopus.com for the top 50 Australian economists as ranked by RePEc.

Most-cited papers in particular journals (based on Scopus.com)

Ranking	**Journal**	**Published-in time-frame**	**Out of # papers***	**Paper**	**# of citations**	**As of**
Most cited	*Land Economics*	2006-2016	516	Pannell (2008)	95	4/04/16
Most cited	*Australian Journal of Experimental Agriculture*	Ever (1990-2008)	2,348	Pannell et al. (2006)	364	4/04/16
10th most cited	*Australian J. Agricultural and Resource Economics*	Ever (1997-2016)	576	Pannell (2001)	65	4/04/16
12th most cited	*Review of Agricultural Economics*	Ever (2004-2009)	329	Pannell (2006)	55	4/04/16
9th most cited	*Agricultural Economics*	Ever (1986-2016)	1527	Pannell (1997)	128	4/04/16
21st most cited	*Agricultural Economics*	Ever (1986-2016)	1527	Pannell et al. (2000)	94	4/04/16
30th most cited	*Agricultural Economics*	Ever (1986-2016)	1527	Abadi Ghadim and Pannell (1999)	81	4/04/16
30th most cited	*Agricultural Systems*	Ever (1976-2016)	2880	Marra et al. (2003)	130	4/04/16

*Total number of papers published in that journal over the time-frame.

Citations (Scopus.com)



Internet downloads

- 65,000 page views on my professional web site in 2017.
- 5,000 hits on INFFER web pages in 2017
- 46,000 downloads for a single paper in 2017: Pannell, D.J. (1997). Sensitivity analysis of normative economic models: Theoretical framework and practical strategies, *Agricultural Economics* 16: 139-152.
- All-time most downloaded paper in *Australian Journal of Experimental Agriculture* out of 2348 published by the journal (was no. 1 from May 2008 until they ceased publishing the ranking in 2011): Pannell et al. (2006).
- 12th most downloaded paper of all time in *Australian Journal of Experimental Agriculture* (as of 14 Feb 2010): Ridley and Pannell (2005).

- 12th most downloaded paper in *Australian Journal of Experimental Agriculture* over past 12 months (as of August 2007): Marsh, Burton and Pannell (2006).
- 6th most downloaded paper in *Agricultural Economics* for 2000: Pannell, Malcolm and Kingwell (2000)
- 6th most downloaded paper in *Canadian Journal of Agricultural Economics* (as of 10 July 2007), John, Pannell and Kingwell (2005).
- 9th most downloaded paper in *Land Economics* (June 2008): Pannell (2008) Public: private benefits framework.
- 12th most downloaded paper in *Australian Journal of Agricultural and Resource Economics* (as of Dec 2006): Pannell (2001). Dryland salinity …
- 4th most downloaded paper in *Agricultural Systems* (as of 17 May 2012): Marra et al. (2003).

Editorial duties

- Co-editor of *Australian Journal of Agricultural and Resource Economics* (2004-2007).
- Special issue co-editor for *Applied Economic Perspectives and Policy* (2018-2020)
- Special issue co-editor for *Environmental Science and Policy* (2008-2009).
- Special issue co-editor for *Ecological Economics* (2012-13)
- Editorial board member for *Applied Economic Perspectives and Policy* (2009-2013, 2015-present).
- Editorial board member for *Journal of Agricultural and Applied Economics* (2010-2012).
- Editorial board member for *Agricultural Systems* (2003-present).
- Editorial board member for *Canadian Journal of Agricultural Economics* (2004-2012).
- Editorial board member for *Land Use Policy* (2010-present).
- Editorial Council member for *Journal of Agricultural and Resource Economics* (2015-2017)
- Editorial board member for *Australian Journal of Agricultural and Resource Economics* (2003-2004, 2014-present).

Research funding and research leadership

- $22 million of external funding in 55 projects since 1983.
- Chief Investigator on successful proposal for ARC Centre of Excellence for Environmental Decisions, $11.9 million over 7 years, 2011-17.
- Chief Investigator on successful proposal for NESP Hub for Threatened Species Recovery, $30 million over 7 years, 2015-2021
- Chief Investigator on successful proposal for NESP Hub for Northern Australia Environmental Resources Recovery, $24 million over 7 years, 2015-2021
- Chief Investigator on successful proposal for NERP Hub for Environmental Decisions, $11 million over 3.5 years, 2011-2014
- Established and led Centre for Environmental Economics and Policy at UWA, 2008-
- Named investigator in CRC for Water Sensitive Cities, $30 million over 9 years, 2012-2020.
- Co-developed the successful proposal for $34 million for the Future Farm Industries Cooperative Research Centre, 2007-2014.

- Co-developed the successful proposal for $25 million for the Cooperative Research Centre for Plant-Based Management of Dryland Salinity, 2001-2007 and the successful "Supplementary Bid" for $5 million expansion of the CRC in 2003-2006.
- Leader of the Economic Modelling program of CLIMA (Cooperative Research Centre for Legumes in Mediterranean Agriculture), 1992-1997.
- Obtained a large grant from GRDC for project "Sustainability and Economics in Agriculture" (SEA), 1997-2002. Built and led a team of 5 core researchers in the project, with numerous external collaborators.

Teaching

Undergraduate teaching in the Faculty of Agriculture at the University of Western Australia in the areas of agricultural policy, farm management, mathematical programming, farming systems, environmental economics, resource economics, extension and communication.

University of W.A. "Excellence in Teaching" award (1994).

Nominated for the UWA "Excellence in Postgraduate Supervision" award (1996).

Research students: 21 undergraduate student projects, 2 Postgraduate Diplomas, 2 Masters of Science in Natural Resource Management, 3 Masters of Science and 22 PhDs.

Service

Within the University

CRC for Plant-Based Management of Dryland Salinity, 2001-2007.
- Member of Management Committee
- Chair of Research Evaluation Committee
- Program Leader, People, Land and Water
- Sub-program Leader, Economic and Social Assessment

Member of Management Committee and Sub-program Leader, CLIMA, 1993-1997.

Future Farm Industries CRC, 2007-2010.
- Program Leader 2007-2008
- Chair of Project Evaluation Committee 2007-2010

Outside the University

Established web-based newsletter *SEA News* (http://welcome.to/seanews) as a communication vehicle to industry, the community and other researchers. Nineteen issues distributed 1998-2006. 1000 subscribers. Over 50,000 hits per year.

Since 2004 I have written regular "Pannell Discussions" – brief articles on issues and ideas in economics, science, the environment, natural resource management, politics, people, and agriculture – similar to a blog. 283 articles published on line. Around 1100 followers and around 75,000 web site hits per year.

Served on 15 government committees and boards in Australia related to natural resource management.

Member of the Research Advisory Committee, Alberta Land Institute, University of Alberta, Canada.

Contributor to a number of research funding bodies and R&D Corporations nationally, most notably through being a Director on the Board of Land and Water Australia, 2002-2005. Also have contributed to the National Dryland Salinity Program, the Joint Venture Agroforestry Program, the Social and Institutional Research Program of LWA, Rural Industries Research and Development Corporation, and Grains Research and Development Corporation, providing advice on the economics of research and on technology transfer/adoption of innovations.

Served on organising committees for two international conferences, five national conferences, an international workshop, and seven national symposia and workshops.

Contribution to the Australian Agricultural and Resource Economics Society (AARES) through the following roles.

- President-Elect, President, Past-President, 1999-2001.
- Member of National Council, representing WA, 1993-1998, 2017.
- President, AARES (WA), 1996-1998.
- Secretary, AARES (WA), 1992-1994.
- Treasurer, AARES (WA), 2009.
- Chair of Masters Thesis Prize assessment Committee, 1998 and 1999.
- Nominations Committee (for Distinguished Fellowships, and President-Elect), 2000-01.
- Member of Local Organising Committee for national conferences: 1996, 2003, 2012.

Contributions to Policy for the Environment and Natural Resource Management

Based on integration of latest science and economics, my research has provided a strong and influential critique of existing policies on land degradation, particularly by dryland salinity, and a constructive diagnosis of new policy needs. The findings have been influential at the national level and in all states. The peak national policy committee in this area prepared recommendations to ministers for policy changes based on my research. The following quotes from policy makers (from the final report for my project "Sustainability and Economics in Agriculture" (SEA) indicate the degree of influence achieved.

- "Your research provided the sound economic and social principles that underpin the State's Salinity Investment Framework, that has recently been endorsed by Cabinet. … Your articulate and powerful presentations to the State Salinity Council were instrumental in achieving the necessary shift in policy thinking that will enable more strategic, cost-effective investment." Dr Paul Vogel, Director, Environmental Policy Unit, Dept Premier and Cabinet, WA.
- "You provided the committee with a big-picture view of the issues which was challenging but at the same time easily understood. … Your input will be a significant contribution to the Committee's parliamentary report." Hon. Pam Allen MP,

Chairman, NSW Parliamentary Select Committee, Salinity.

- "The work was influential at the highest levels of policy as well as with natural resource managers in the field. Overall, the SEA Project was one of the most successful that I have ever known." Dr Don McFarlane, Director, Resource Management, Water and Rivers Commission, WA.
- "New South Wales Treasury has found the work published under this project, by yourself and others, extremely valuable in developing our thinking on natural resource management issues. The SEA Project has injected much needed objectivity, practicality and realism into the discussion. The project has been particularly successful in conveying the available scientific, economic and social information on these issues together with associated policy implications in a manner that is readily accessible to decision makers." Mr Kevin Cosgriff, Executive Director, Resource Allocation, NSW Treasury.
- "Your wise counsel while participating in innovative policy development committees and inquiries for Government and community action will have a long-term impact on salinity management and Natural Resource Management in Western Australia." Mr Garry English, WA Farmers Federation (also State Salinity Council, NRM Council).
- "I have no doubt that your group, through the SEA Project, has influenced not only industry attitudes towards sustainability, but also national policy agendas, particularly with respect to dryland salinity." Mr Richard Price, National Manager, National Dryland Salinity Program.

Usage of Tools

The following are practical tools I developed or co-developed that have been widely used.

MIDAS (Model of an Integrated Dryland Agricultural System). Developed in 1983. Still in active use in multiple versions around Australia (WA, SA, Vic and NSW). Used in three Cooperative Research Centres (CLIMA, Salinity CRC, Future Farm Industries CRC) to evaluate technologies and guide research and extension. Inspired development of models in Portugal and Syria. Key reference: Kingwell, R.S. and Pannell, D.J. (Eds) (1987). *MIDAS, A Bioeconomic Model of a Dryland Farm System*, Pudoc, Wageningen.

RIM (Resistance and Integrated Management): Released in 1999. Almost 2,000 copies sold to farmers. Over 1,000 farmers attended RIM workshops. Re-launched in 2013. Versions developed for South Africa and The Phillipines. Key reference: Pannell, D.J., Stewart, V., Bennett, A., Monjardino, M., Schmidt, C. and Powles, S.B. (2004). RIM: A Bioeconomic Model for Integrated Weed Management of *Lolium rigidum* in Western Australia. *Agricultural Systems* 79(3): 305-325.

SIF3 (Salinity Investment Framework III). Developed in 2004. Used by several Catchment Management Bodies in WA and Victoria. Influential on salinity policy makers. Senate Committee Report (2006): "The Committee was particularly impressed by SIF3, which appears to offer a sound framework for making informed, objective and transparent investment decisions in a systematic way." (p. 205). Key reference: Ridley, A., and Pannell, D.J. (2005). The role of plants and plant-based R&D in managing dryland salinity in Australia, *Australian Journal of Experimental Agriculture* 45: 1341-1355.

INFFER (Investment Framework for Environmental Resources). Developed in 2008. Trialled or used by more than 20 environmental management bodies in Australia: regional NRM bodies, private consultants, NGOs and government departments. Has been instrumental in securing major funding for some projects. Influential on government policies and programs in Victoria and Canberra. Applied in Italy, New Zealand and Canada. Key reference: Pannell, D.J., Roberts, A.M., Park, G., Alexander, J., Curatolo, A. and Marsh, S. (2012). Integrated assessment of public investment in land-use change to protect environmental assets in Australia, *Land Use Policy* 29(2): 377-387.

ADOPT (Adoption and Diffusion Outcome Prediction Tool). Developed 2010-13. 700 downloads to Oct 2014. ACIAR funding to develop a developing-country version. Key reference: Kuehne, G., Llewellyn, R.S., Pannell, D.J., Wilkinson, R., Dolling, P. and Ewing, M.A. (2011). ADOPT: a tool for predicting adoption of agricultural innovations, Paper presented at the 55th Annual Conference of the Australian Agricultural and Resource Economics Society, Melbourne, 8-11 February 2011.

Risky Business. First developed in 1992. Training tool on risk in farm management. Delivered to 2100 people around Australia 1992-2014, including university students, farmers and government agencies. Adapted to Future Farm Business, incorporating sustainability aspects. Key reference: Stewart, V., Marsh, S., Kingwell, R., Pannell, D., Abadi, A. and Schilizzi, S. (2000). Computer games and fun in farming systems education? : A case study. *Journal of Agricultural Education and Extension* 7(2): 117-128.