THE UNIVERSITY OF WESTERN AUSTRALIA | Centre for Environmental Economics & Policy

Biodiversity & Conservation

CAPABILITY STATEMENT

UWA's Centre for Environmental Economics and Policy addresses complex, multi-faceted environmental problems through quality multidisciplinary research, engagement and training. Our Centre specialises in providing socio-economic research and policy analysis, including for: biodiversity of flora & fauna, threatened species conservation, pest plants & animals, and mitigation of adverse environmental outcomes.

Measuring community values within an economic framework is a key component of our work.

WHY CHOOSE US?

1. We have established collaborations with researchers from leading universities and partnerships with research institutes.
2. We have more than 20 years' experience working on nationally funded research programs, industry projects and providing consulting services.
3. Our internationally recognised experts can support your organisation by:
   a. Conducting quality research, policy analysis and state-of-the-art bio-economic modelling.
   b. Developing and applying economic tools and frameworks to improve decision-making processes.
   c. Delivering customised training and activities to build capacity among your staff and key stakeholders.

SKILLS AND SERVICES

- Interdisciplinary research
- Bio-economic modelling of environmental issues
- Economic evaluation, investment choice and prioritisation frameworks
- Design and evaluation of environmental policies
- Valuation of non-market benefits, and conducting benefit transfer
- Informing adoption of environmental practices
- Environmental decision support tools
- Business case development / Benefit: Cost Analysis
- Questionnaire / survey design and analysis
- Focus group facilitation & semi-structured interview techniques
- Multi-stakeholder project management
- Tailored training packages, including workshops and knowledge-sharing activities.

OUR PARTNERSHIPS

- NESP Threatened Species Recovery Hub
- NESP Resilient Landscapes Hub
- NESP Northern Australian Environmental Resources
- WA Biodiversity Science Institute
- WA Department of Biodiversity, Conservation & Attractions
- ARC's Centre of Excellence for Environmental Decisions (CEED)
- Australian Department of Agriculture, Water and Environment


Photo Credit: Murray Vanderveer

OUR PEOPLE

Our centre consists of highly qualified academic staff, senior research fellows and postgraduate research students. Our **Biodiversity & Conservation team** is led by:

DR ABBIE ROGERS

Dr Rogers' specialisation is in promoting systematic integration of social and environmental values in evidence-based decision making for natural resource managers and policy makers. Her research work is highly applied with significant experience in delivering stakeholder activities, including training, workshops and seminars.

DR RAM PANDIT

Dr Pandit's key areas of research includes economics of threatened species conservation, impacts of protected area policies and valuation of urban green space and ecosystem services. He is an expert in (spatial) econometrics, hedonic modelling, and survey-based data analysis. He is also an IPBES expert contributing to ecosystem services assessments and policy.

RECENT OUTPUTS

- INFFER - is a tool to apply economic analysis in environmental management. https://www.inffer.com.au
- Valuing multiple threatened species and ecological communities in Australia, including a Values Database.
- Improved budgetary planning for threatened species and ecological community recovery plans
- PhD Project: Using non-market valuation and cost-benefit analysis to prioritise introduced predator control strategies for threatened species' recovery.
- IPBES-IPCC co-sponsored workshop report on biodiversity and climate change.
- Prioritising threatened species and threatening processes across northern Australia.
- Multi-objective planning in Northern Australia: co-benefits and trade-offs between environmental, economic, and cultural outcomes.
- Conservation opportunities on uncontested lands.
- Predicting the effectiveness of community anti-poaching patrols for conserving threatened wildlife in Lao.
- Understanding and promoting adoption of conservation practices by rural landholders.
- Applying governance principles to systematic conservation decision-making in Queensland.
- Learnings from Agri-environmental schemes in Australia - access to our team's outputs related to the design and implementation of effective schemes is available at: https://www.resources4aes.net/
- Benefits and costs of non-market valuation for environmental management.
- Determining optimal spatial distribution of investment in land restoration to enhance biodiversity.
- Global extent of degraded farm lands and their conservation potential.
- Environmental costs of using poor decision metrics to prioritise environmental projects.
- Blog posts focussing on environmental economics: https://www.pannelldiscussions.net/

CONTACT US

For enquiries, potential collaborations or new partnerships, contact:

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Biodiversity & Conservation

RELEVANT PUBLICATIONS

Bryan, B.A., Runting R.K., Capon, T., Perring, M.P., Cunningham, S.C, Kragt, M.E., Nolan, M., Law, E.A., Renwick, A., Eber, S., Christian, R. & Wilson, K. (2016). Designer policy for carbon and biodiversity co-benefits under global change. Nature Climate Change, 6: 301–305.

Burton, M., Rogers, A. and Richert, C. (2017). Community acceptance of biodiversity offsets: evidence from a choice experiment. Australian Journal of Agricultural and Resource Economics, 61(1): 95-114.

Chalak, M. and Pannell, D.J. (2015). Optimal integrated strategies to control an invasive weed. Canadian Journal of Agricultural Economics 63(3), 381-407.

Chalak, M., Polyakov, M. and Pannell, D. (2017). Economics of controlling invasive species: a stochastic optimization model for a spatial-dynamic process. American Journal of Agricultural Economics 99 (1): 123-139.

Estifanos, T., Polyakov, M., Pandit, R., Hailu, A. and Burton, M. (2020). Managing conflicts between local land use and the protection of the Ethiopian wolf: Residents' preferences for conservation program design features. Ecological Economics 169.

Estifanos, T., Polyakov, M., Pandit, R., Hailu, A. and Burton, M. (2021). What are tourists willing to pay for securing the survival of a flagship species? The case of protection of the Ethiopian wolf. Tourism Economics 27(1), 45-69.

Garnett, S. T., Luck, L., Zander, K. K., Pandit, R., Gunawardena, A., & Pannell, D. (2019). Improved budgetary planning for threatened species and ecological community recovery plans. Retrieved from Canberra:

Gibson, F.L., Rogers, A.A., Smith, A.D.M., Roberts, A., Possingham, H., McCarthy, M. and Pannell, D.J., (2017). Factors influencing the use of decision support tools in the development and design of conservation policy. Environmental Science and Policy 70, 1-8.

Gunawardena, A., Burton, M., Pandit, R., Garnett, S.T., Zander, K.K., and Pannell, D. (2020). Valuing multiple threatened species and ecological communities in Australia. Final report to the National Environment Science Program, Department of Agriculture, Water and the Environment, Brisbane. 15 December 2020.

Iftekhar, M.S. and Pannell, D.J. (2015). 'Biases' in adaptive natural resource management. Conservation Letters 8(6), 388-396.

Iftekhar, S., Pannell, D.J. and Hawkins, J. (2019). Costs of conservation offset activities: A case study of state of publicly available information in Australia. Sustainability 11 (19), 5273.

Kragt, M.E., Scheufele, G., Bennett, J., Hay, E. & Renton, M. (2019). Predicting the effectiveness of community anti-poaching patrols for conserving threatened wildlife in the Lao PDR. Journal of Applied Ecology, 75(2): 320–330

Legge, S., Woinarski, J.C.Z., Burbidge, A.A., Palmer, R., Ringma, J., Radford, J.Q., Mitchell, N., Bode, M., Wintle, B., Baseler, M., Bentley, J., Copley, P., Dexter, N., Dickman, C.R., Gillespie, G.R., Hill, B., Johnson, C.N., Latch, P., Letnic, M., Manning, A., McCreless, E.E., Menkhorst, P., Morris, K., Moseby, K., Page, M., Pannell, D. Tuft, K. (2018). Havens for threatened Australian mammals: the contributions of fenced areas and offshore islands to the protection of mammal species susceptible to introduced predators. Wildlife Research 45(7), 627-644.

Mamouni Limnios,E., , Schilizzi,S., Burton,M., Ong,A., Hynes,N. (2016). Willingness to pay for product ecological footprint: Organic vs non-organic consumers? Technological Forecasting & Social Change 111: 338-348.

Matzek, V., Kragt, M.E. & Wilson, K. (2019). Mainstreaming of ecosystem services as a rationale for ecological restoration in Australia. Ecosystem Services, 35: 79–86.

Pandit, R., Subroy, V., Garnett, S. T., Zander, K. K., & Pannell, D. (2015). A review of non-market valuation studies of threatened species and ecological communities. Report to the National Environmental Science Programme.

Pandit, R., Parrotta, J.A., Kumar Chaudhary, A., Karlen, D.L., Luis Mascia Vieira, D., Anker,Y., Chen, R., Morris, J., Harris, J and Ntshotsho, P. (2020). A framework to evaluate land degradation and restoration responses for improved planning and decision-making. Ecosystems and People, 16, 1-18.

Pandit, Ram. (2018). REDD+ adoption and factors affecting respondents' knowledge of REDD+ goal: Evidence from household survey of forest users from REDD+ piloting sites in Nepal. Forest Policy and Economics, 91:107-115.

Pandit, R., P. Neupane, and B. H. Wagle. (2017). Economics of carbon sequestration in community forests: Evidence from REDD+ piloting in Nepal. Journal of Forest Economics, 26: 9-29.

Pandit, R., Dhakal, M and Polyakov, M. (2015). Valuing Access to Protected Areas in Nepal: The Case of Chitwan National Park. Tourism Management, 50(October): 1-12.

Pannell, D., Gibson, F. (2016). The environmental cost of using poor decision metrics to prioritize environmental projects. Conservation Biology, 30, 2, pp. 382-391.

Pannell, D.J., Tillie, P., Rodriguez-Cerezo, E., Ervin, D. and Frisvold, G.B. (2016). Herbicide resistance: economic and environmental challenges, AgBioForum 19(2), 136-155.

Pannell, D.J., Alston, J.M., Jeffrey, S., Buckley, Y.M., Vesk, P., Rhode, J.R., McDonaldMadden, E., Nally, S., Gouche, G. and Thamo, T. (2018). Policy-oriented environmental research: What is it worth? Environmental Science and Policy 86, 64-71.

Pascual, Unai, Patricia Balvanera, Sandra Díaz, György Pataki, Eva Roth, Marie Stenseke, Robert T. Watson, Esra Başak Dessane, Mine Islar, Eszter Kelemen, Virginie Maris, Martin Quaas, Suneetha M. Subramanian, Heidi Wittmer, Asia Adlan Mohamed, Yousef S. AlHafedh, Stanley T. Asah, Pam Berry, Adem Bilgin, Sara J. Breslow, Craig Bullock, Daniel Cáceres, Christopher Golden, Erik Gómez-Baggethun, David González-Jiménez, Joël Houdet, Hans Keune, Ritesh Kumar, Peter H. May, Aroha Mead, Patrick O'Farrell, Ram Pandit, Walter Pengue, Ramón Pichis-Madruga, Florin Popa, Susan Preston, Diego Pacheco-Balanza, Heli Saarikoski, Bernardo B. Strassburg, Madhu Verma, and Noboyuki Yagi. (2017). Valuing nature's contributions to people: the IPBES approach. Current Opinion in Environmental Sustainability, 26 (Open issue, part II): 7-16.

Polyakov, M., Chalak, M., Iftekhar, S., Pandit, R., Tapsuwan, S., Zhang, F. and Ma, C. (2018). Authorship, collaboration, topics, and research gaps in Environmental and Resource Economics 1991-2015. Environmental and Resource Economics, 71(1): 217-239.

Polyakov, M. , Pannell, D.J., Chalak, M., Park, G., Roberts, A., and Rowles, A. (2015). Restoring native vegetation in an agricultural landscape: spatial optimization for woodland birds. Land Economics 91(2), 252-271.

Polyakov, M., Pannell, D.J., Pandit, R., Tapsuwan, S., and Park, G. (2015). Capitalized amenity value of native vegetation in a multifunctional rural landscape. American Journal of Agricultural Economics 97(1), 299–314.

Pörtner, H.O., Scholes, R.J., Agard, J., Archer, E., Arneth, A., Bai, X., Barnes, D., Burrows, M., Chan, L., Cheung, W.L., Diamond, S., Donatti, C., Duarte, C., Eisenhauer, N., Foden, W., Gasalla, M. A., Handa, C., Hickler, T., Hoegh-Guldberg, O., Ichii, K., Jacob, U., Insarov, G., Kiessling, W., Leadley, P., Leemans, R., Levin, L., Lim, M., Maharaj, S., Managi, S., Marquet, P. A., McElwee, P., Midgley, G., Oberdorff, T., Obura, D., Osman, E., Pandit, R., Pascual, U., Pires, A. P. F., Popp, A., ReyesGarcía, V., Sankaran, M., Settele, J., Shin, Y. J., Sintayehu, D. W., Smith, P., Steiner, N., Strassburg, B., Sukumar, R., Trisos, C., Val, A.L., Wu, J., Aldrian, E., Parmesan, C., Pichs-Madruga, R., Roberts, D.C., Rogers, A.D., Díaz, S., Fischer, M., Hashimoto, S., Lavorel, S., Wu, N., Ngo, H.T. (2021). IPBES-IPCC co-sponsored workshop report on biodiversity and climate change; IPBES and IPCC.

Rakatama, A., Iftekhar, S., and Pandit, R. (2020). Perceived benefits and costs of REDD+ projects under different forest management regimes in Indonesia. Climate and Development, 12 (5): 481-493.

Rakatama, A., Pandit, R., Ma, C. and Iftekhar, S. (2020). Policy forum: Improving the acceptability of REDD+ projects among local households in Indonesia. Forest Policy and Economics, 116.

Rakatama, A., and Pandit, R. (2020). Reviewing social forestry schemes in Indonesia: Opportunities and challenges. Forest Policy and Economics, 111.

Rakatama, A., Pandit, R., Ma, C. and Iftekhar, S. (2018). How to design more effective REDD+ projects - the importance of a targeted approach in Indonesia. Journal of Forest Economics, 33: 25-32.

Rakatama, A., Pandit, R., Iftekhar, S. and Ma, C. (2018). Heterogeneous public preference for REDD+ projects under different forest management regimes. Land Use Policy, 78: 266-277.

Rakamata, A., R. Pandit, C. Ma, and S. Iftekhar. (2017). A review of costs and benefits of REDD+. Forest Policy and Economics, 75:103-111.

Rogers, A.A., Burton, M.P., Cleland, J.A., Rolfe, J., Meeuwig, J.J. and Pannell, D.J. (2020). Expert judgements and community values: preference heterogeneity for protecting river ecology in Western Australia. Australian Journal of Agricultural and Resource Economics, 64 (2).

Rogers, A., Kragt, M., Gibson, F., Burton, M., Petersen, E., Pannell, D. (2015). Non-market valuation: usage and impacts in environmental policy and management in Australia. The Australian Journal of Agricultural and Resource Economics, 59, 1, pp. 1-15.

Rogers, A.A. and Burton, M.P. (2017). Social preferences for the design of biodiversity offsets for shorebirds in Australia. Conservation Biology, 31(4): 828-836.

Sabiha, N., Salim, R., Rahman, S. and Rola-Rubzen, M.F. (2016). Measuring environmental sustainability in agriculture: A composite environmental Impact Index approach. Journal of Environmental Management, 166 (January), 84–93.

Subroy, V., Rogers, A. & Kragt, M.E. (2018). To bait or not to bait: A discrete choice experiment on public preferences for native wildlife and conservation management in Western Australia. Ecological Economics, 147: 114–122.

Subroy, V., Gunawardena, A., Polyakov, M., Pandit, R. and Pannell, D.J. (2019). The worth of wildlife: A meta-analysis of global non-market values of threatened species. Ecological Economics, Volume 164, 106374.

Voinov A.A., Kolagani, N., McCall, M., Kragt, M.E., Glynne, P.D., Pierce, S.A. & Ostermann, F.O. (2016). Modelling with stakeholders – next generation. Environmental Modelling & Software, 77: 196–220.

Wallace, K., Kim, M., Rogers, A. and Jago, M. (2020). Classifying human wellbeing values for planning the conservation and use of natural resources. Journal of Environmental Management, 256.

Willemen, L., N.N. Barger, B. ten Brink, M. Cantele, B.F.N. Erasmus, J. L. Fisher, T. Gardner, T. G. Holland, F. Kohler, J. S. Kotiaho, G. Von Maltitz, G. Nangendo, R. Pandit, J. A. Parrotta, M. D. Potts, S. D. Prince, M. Sankaran, A. Brainich, L. Montanarella and R. Scholes, (2020). How to halt the global decline of lands. Nature Sustainability 3, 164 – 166.

Wilson, K., Davis, K., Matzek, V. & Kragt, M.E., (2019) Concern about threatened species and ecosystem disservices underpin public willingness to pay for ecological restoration. Restoration Ecology, 27(3): 513–519

Xie, Z., Phinn, S.R., Game, E.T., Pannell, D.J., Hobbs, R.J., Briggs, P.R. and McDonald-Madden, E. (2019). Using Landsat observations (1988-2017) and Google Earth Engine to detect vegetation cover changes in rangelands - a first step towards identifying degraded lands for conservation. Remote Sensing of Environment, 232, 111317.

Xie, Z., Game, E.T., Hobbs, R.J., Pannell, D.J., Phinn, S.R., and McDonald-Madden, E. (2020). Conservation opportunities on uncontested lands. Nature Sustainability 3, 9–15.

BOOKS & BOOK CHAPTERS

Garnett, S.T., Latch, P., Lindenmeyer, D.B., Pannell, D.J., Woinarski, J.C.Z. (2018). More than hope alone: factors influencing the successful recovery of threatened species in Australia, Recovering Australian Threatened Species, CSIRO Publishing, Clayton Vic, pp. 315-323. Here

Adenle, A.A., Chertow, M.R., Moors, E.H.M. and Pannell, D.J. (eds) (2020). Science, Technology and Innovation for Sustainable Development Goals: Insights from Agriculture, Health, Environment and Energy, Oxford University Press. Here.

Adenle, A.A., Chertow, M.R., Moors, E.H.M. and Pannell, D.J. (2020). What Can Science, Technology and Innovation Offer in the Achievement of Sustainable Development Goals? In: Adenle, A.A., Chertow, M.R., Moors, E.H.M. and Pannell, D.J. (eds) (2020). Science, Technology and Innovation for Sustainable Development Goals: Insights from Agriculture, Health, Environment and Energy, Oxford University Press. Here.

Adenle, A.A., Chertow, M.R., Moors, E.H.M. and Pannell, D.J. (2020). Conclusions and Future Policies for Meeting the Sustainable Development Goals, In: Adenle, A.A., Chertow, M.R., Moors, E.H.M. and Pannell, D.J. (eds) (2020). Science, Technology and Innovation for Sustainable Development Goals: Insights from Agriculture, Health, Environment and Energy, Oxford University Press. Here.