In the Planning and Environment Court	Appeal No 137 of 2020				
Held at: Brisbane					
Between: Graeme Ashley Hoffmann and Chuda Kaewmongkhon Hoffmann Drilling Pty Ltd Superannuation Fund	Appellant				
Gold Coast City Council	Respondent				
Catherin Ceris Ash	First Co-Respondent by Election				
Australian Rainforest Conservation Society Inc.	Second Co-Respondent by Election				
Gecko Environment Council Association	Third Co-Respondent by Election				
Bernie Winter	Fourth Co-Respondent by Election				
Charles Colin Alex Orsini	Sixth Co-Respondent by Election				
WORLD HERITAGE JOINT EXPERT REPORT					

Dr. Robert Kooyman	Wayne Moffitt
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Briefed by solicitors for the Second Co-Respondent by Election	Briefed by solicitors for the Appellant
Date of Report: ** April 2021	L

Statement to the Court

Appeal: P&E Appeal No. 137 of 2020 Hoffmann Drilling Pty Ltd Superannuation Fund v Gold Coast City Council & Ors

Participant Expert: Dr Robert Kooyman (RK); Mr. Wayne Moffitt (WM).

A copy of our curriculum vitae is provided in **Appendix 1**.

Paragraphs within this Joint Expert Report (**JER**) reflect the known or identified matters of concern related to World Heritage values, and include points of agreement and disagreement.

Area of Expertise: World Heritage

Commencement Date: RK and WM commenced the process of developing the World Heritage JER on 11 March 2021.

We acknowledge that we have been instructed to assist the Planning & Environment Court by investigating and reporting on World Heritage matters in this appeal.

We verify that our instructions have included the Planning and Environment Court Rules 2018 and the Uniform Civil Procedures Rule 1999 which we have read and understood. These Rules and procedures require that:

- i. a witness giving evidence (by report, or otherwise) in a proceeding as an expert has a duty to assist the Court; and
- ii. the duty overrides any obligation the witness may have to any party to the proceeding or to any person who is liable for the expert's fee or expenses.

We verify that we understand and have complied with this duty, and that we have not received any instructions to adopt, or reject, any particular opinion in preparing the joint report.

BACKGROUND AND PURPOSE OF WORLD HERITAGE REPORT

- This Report relates to an appeal to the Planning and Environment Court against the refusal by the Respondent of an application for a development permit for a material change of use for extractive industry (commercial groundwater extraction) on land located at 263 Repeater Station Road, Springbrook, described as Lot 36 on RP139816. The locality of the Site is shown by Figure 1. The Site's more immediate setting is shown by Figure 2. Relevantly, World Heritage Areas (WHA) are shown. Figure 3 shows the Site's immediate locality and boundaries.
- 2. The Respondent's stated reasons for Refusal of the proposed development that are of relevance to this report on World Heritage values are:
 - a. It has not been demonstrated that the proposed development will not have unacceptable impacts on matters of National, State and Local environmental significance (hereinafter referred to as MNES, MSES and MLES respectively) that are known to occur within the site and surrounding locality, including:
 - *(i) impacts associated with the transportation of extracted groundwater upon the safe movement of native fauna and vegetation which will need to be cleared;*
 - (ii) impacts associated with the reduction in the availability of groundwater resources on the site and in surrounding areas;
 - b. The proposed development is not consistent with the purpose of the Planning Act 2016 in that it has not been demonstrated that it would result in the achievement of ecological sustainability.
- 3. The purposes of this report on World Heritage are to:
 - a. consider the material submitted in support of the development application and any other relevant information concerning:
 - (i) the listed World Heritage property areas that occur in close proximity and locally and regionally to the Site locality and surrounding areas;

- (ii) the potential impact of the proposed development, alone or in combination with related environmental factors, on those World Heritage areas.
- b. consider whether the nature and scale of adverse impacts associated with the proposed development could impact on World Heritage values;
- c. form and express our relevant expert opinions regarding whether the potential impacts of the proposed development on the World Heritage areas warrant refusal of the proposed development.

THE SUBJECT LAND, ITS CONTEXT AND THE PROPOSED DEVELOPMENT

4. We are both parties to the Ecology JER submitted concurrently with this World Heritage JER. The Subject land, its context and the proposed development are adequately described by that report.

WORLD HERITAGE VALUES

5. The following is provided by RK

- 6. The proposed development has the potential to have direct and indirect adverse impacts on matters of national, state and local environmental significance that are known to occur within the Site and surrounding locality, including impacts associated with a reduction in the availability of groundwater resources that may play an important role in sustaining the long-term viability of matters of national, state and local environmental significance (Groundwater JER paragraph 8; Ecology JER points of agreement), including the outstanding universal values of the World Heritage areas (Hunter 2003).
- In relation to point 6, reference should therefore be made to the Operational Guidelines for World Heritage Protection and Management (UNESCO 2019) that provide guidance on assessing matters that might impact on the WHGRA.

- 8. World Heritage (WH) and National Heritage listings are based on assessment in relation to a range of values and criteria. The focus for the WHGRA is on a subset of the criteria and values. Specifically WH values (viii) to be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features; (ix) to be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals; and (x) to contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation (**Appendix 2** this report provides a synopsis of the outstanding universal values of the WHGRA; full details in Hunter 2003).
- 9. National Heritage criteria include: (a) the place has outstanding heritage value to the nation because of the place's importance in the course, or pattern, of Australia's natural or cultural history; (b) the place has outstanding heritage value to the nation because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history; (c) the place has outstanding heritage value to the nation because of the nation because of the place's potential to yield information that will contribute to an understanding of Australia's natural or cultural history; (d) the place has outstanding heritage value to the nation because of the nation because of the place's importance in demonstrating the principal characteristics of:
- (6) a class of Australia's natural or cultural places; or(ii) a class of Australia's natural or cultural environments.
- 10. The nomination (Australian Government 1985, 1992) and subsequent listing of the Gondwana Rainforests of Australia (2007) as World Heritage is confirmation of their global significance and importance. More recent research into the paleo-Antarctic history and biogeography of component lineages and assemblages of these rainforests have further confirmed and clarified their global significance (Kooyman et al. 2014, 2019; Merkhofer et al. 2015).

- 11. The World Heritage Gondwana Rainforest of Australia (WHGRA) include parts of the Springbrook Plateau and Springbrook National Park (NP) (Figure 1).
- 12. The outstanding universal values identified for the nomination of parts of the Springbrook Plateau as World Heritage (Australian Government 1992), and management guidelines to protect those values (UNESCO 2019), are further described in the more recent periodic reports prepared by state agencies (QPWS, NSW NPWS) and the Australian Government (2002), the 2020 State of Conservation Report following the 2019-2020 fires (Anonymous 2020), the synopsis of universal outstanding values in Appendix 2 attached to this report, and in Hunter (2003).
- 13. The IUCN World Heritage Outlook 3 (2020) lists the Gondwana Rainforests of Australia as of Significant Concern (i.e., threatened by a number of factors). That report shows a continuing decline in the outstanding universal values and a continuation of threats to the WHGRA.
- 14. As noted in paragraph 8 of the Groundwater JER "The groundwater that would be extracted by the production bores at 263 Repeater Station Road would otherwise flow (via groundwater discharge from seeps and springs) to surface water sites at lower elevations, including any existing GDEs, as well as Twin Falls and Cave Creek, which are sites of considerable environmental and regional tourism significance." Twin Falls and Cave Creek are part of the Springbrook National Park and the WHGRA.
- 15. The points of agreement in the Joint Expert Report for Climate Change (JER_CC) suggest that it is relevant to consider climate change impacts on the area's groundwater. Specifically the JER_CC includes point [3] "Australia, south east Queensland and the Springbrook Plateau are characterized by seasonal rainfall and high variability in year-to-year rainfall, especially in winter (Figure 12) and severe droughts (Figure 13). Furthermore, a long-term drying trend it now evident based on the observed rainfall records" (Figure 14).
- 16. The JER Ecology provides ecological information relevant to the evaluation of interactions between groundwater, climate change projections, potential impacts on vegetation function and the persistence of rainforest and forest

species and assemblages in the area of the Site, the adjacent lands, the National Park, and in the World Heritage area.

- 17. The points of agreement (under 4.1 Points of Agreement) in the JER Ecology identify that the lack of detail (in the development proposal and Groundwater JER) in relation to the hydro-geological processes of the area limit our capacity to quantify and evaluate the potential impacts of groundwater extraction on ecological processes; and (**RK**) the outstanding universal values of the WHGRA.
- 18. **RK** is of the opinion that the Appellant has not provided sufficient detail concerning:
 - (a) the location and nature of matters of World Heritage significance that may potentially be adversely impacted by the proposed development;
 - (b) the nature, magnitude, duration and likelihood of potential adverse impacts to the World Heritage areas and their outstanding universal values including consideration of the cumulative impacts of the proposal and:
 - (i) climate change; and
 - (ii) other existing ground water extraction operations in the Site locality;
 - (c) the nature and likely effectiveness of measures that would be taken to avoid to the greatest extent practicable the potential for adverse impacts on the WHGRA and their outstanding universal values; and
 - (d) the likely nature, magnitude and duration of any unavoidable residual impacts to the WHGRA and their values (UNESCO 2012, 2020).
- 19. **RK** is of the opinion that, in the absence of evidence to the contrary, the proposed development will likely have adverse impacts, including a reduction in groundwater and water flow to key features, and the nature and scale of those impacts are likely to significantly and negatively impact on the outstanding universal values of the WHGRA.

- 20. **RK** is of the opinion that consistent with the "precautionary principle" and point 18. above (IUCN 2020) the proposed development should be refused as there is a lack of scientific certainty concerning the potential for serious, irreversible, and cumulative impacts on the World Heritage areas and WHGRA values from the extraction of groundwater.
- 21. RK is of the opinion that the proposed development ought to be refused, based on the likelihood of potential negative impacts on the outstanding universal values of the WHGRA (Hunter 2003), and the identified, ongoing, and cumulative threats to the WHGRA (IUCN 2020).

22. The following is provided by WM:

- 23. I acknowledge **RK's** assessment of World Heritage values, and accept that these are the values to be considered by an impact assessment;
- 24. I accept that there is insufficient information on groundwater extraction impacts to make an informed assessment of impacts to WHAs;
- 25. I note that the WHAs do not directly adjoin the subject land. While it is evident that groundwater extraction must reduce flows to the WHAs to some extent, I believe that there will be a diminution of impact with progression away from the site because the affected spring's contribution to overall stream flow is diminished by other contributing catchments. The mitigating effect of contributing catchments should be considered further by the groundwater experts.
 - 26. At this point in time these information gaps do not allow for informed debate on impacts to the WHAs. It may be the case that more detailed investigations establish that the proposed development has unacceptable impacts and should not be approved. Conversely, the investigations may establish that the proposed development could be approved subject to strict conditions that establish an acceptable level of impact and risk. It is reasonable to afford the Appellant an opportunity to conduct these investigations, and for the experts to reconvene to consider their findings in a future JER.

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Dr. Robert Kooyman	Wayne Moffitt

REFERENCES

Anonymous 2020. Gondwana Rainforests of Australia State of Conservation update. QPWS and NSW NPWS.

Australian Federal Government. 1992. Nomination of Central Eastern Rainforests of Australia for World Heritage listing.

Australian Federal Government. 2002. Periodic Report 2002 - Section II Central Eastern Rainforest Reserves of Australia.

DECC NSW. 2010. Border Ranges Rainforest Biodiversity Management Plan. https://www.environment.gov.au/system/files/resources/4249147f-26eb-416b-ae78e982a7099e4f/files/brrb-management-plan.pdf

Hunter R.J. 2003. (revised 2004) World Heritage and associative natural values of the Central Eastern Rainforest Reserves of Australia. NSW NPWS.

IUCN. 1985. World Heritage Nomination. IUCN Summary. New South Wales Rainforests, Australia.

IUCN. 1993. World Heritage Nomination. IUCN Summary. Central Eastern Rainforests of Australia – extension.

IUCN. 2020. IUCN World Heritage Outlook 3:

Osipova, E., Emslie-Smith, M., Osti, M., Murai, M., Åberg, U., Shadie, P. (2020). IUCN World Heritage Outlook 3: A conservation assessment of all natural World Heritage sites, November 2020. Gland, Switzerland: IUCN. x + 90pp.

Kooyman, R.M., Rossetto M., Sauquet, H. and Laffan, S.W. 2013. Landscape patterns in rainforest phylogenetic signal: isolated islands of refugia or structured continental distributions? PLoS ONE 8(12): e80685. doi:10.1371/journal.pone.0080685

Kooyman, R.M., Wilf, P., Barreda, V.D., Carpenter, R.J., Jordan, G.J., Sniderman, J.M.K., Allen, A., Brodribb, T.J., Crayn, D., Feild, T.S., Laffan, S.W., Lusk, C.H., Rossetto, M., Weston, P.H. 2014. Paleo-Antarctic Rainforest into the Modern Old World Tropics: the Rich Past and Threatened Future of the 'Southern Wet Forest Survivors' *American Journal of Botany* 101:2121-2135.

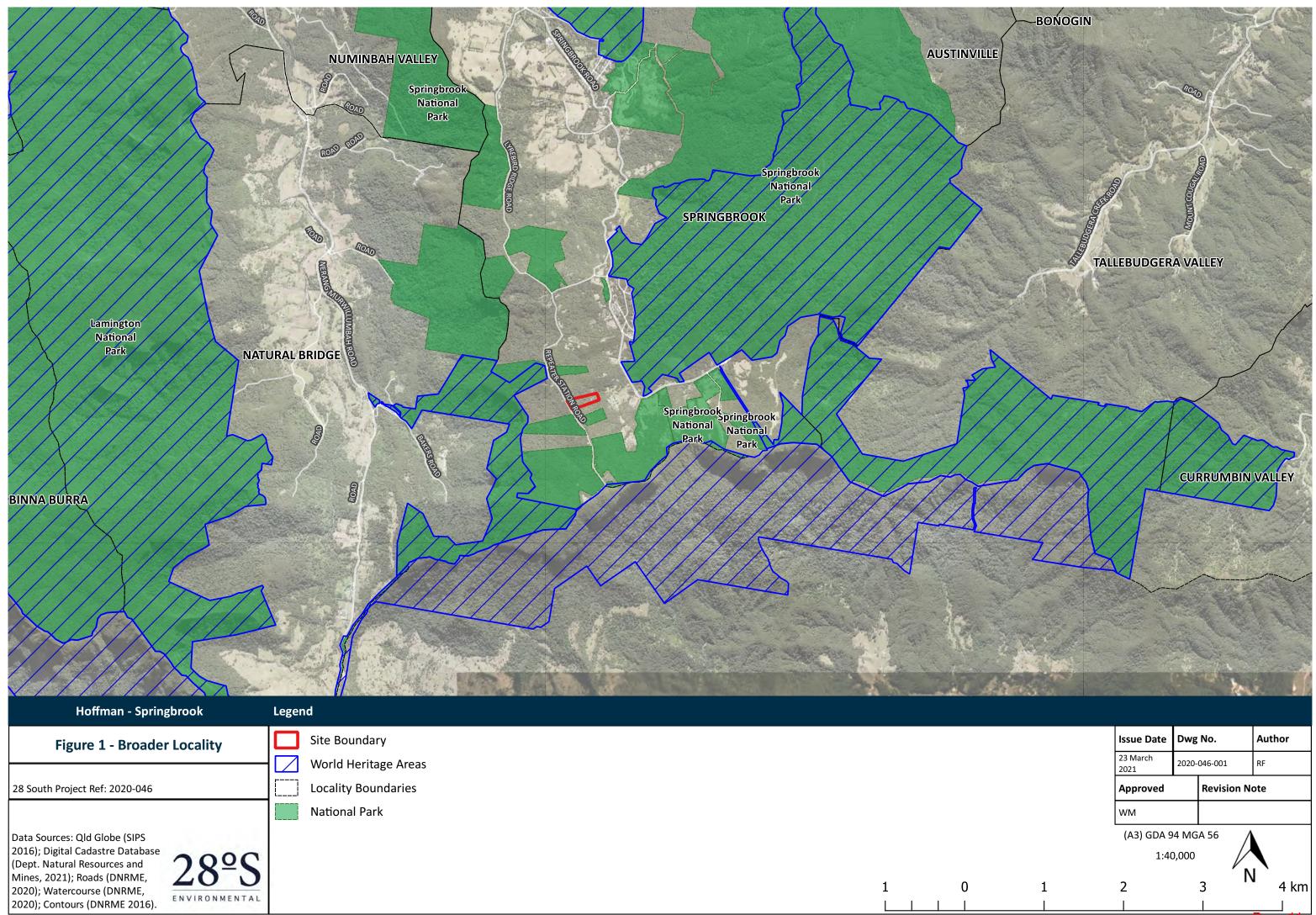
Kooyman RM, Morley RJ, Crayn DM, Joyce EM, Rossetto M, Slik JWF, Strijk JS, Su T, Yap J-Y S, Wilf P. 2019. Origins and Assembly of Malesian Rainforests. *Annual Review of Evolution, Ecology and Systematics* 50:119–143. https://doi.org/10.1146/annurev-ecolsys-110218-024737

Merkhofer, L., Wilf, P., Haas, M.T., Kooyman, R.M., Sack, L., Scoffoni, C. and Cúneo, N.R. 2015. Resolving Australian analogs for an Eocene Patagonian paleorainforest using leaf size and floristics. *American Journal of Botany* 102: 1160-1173.

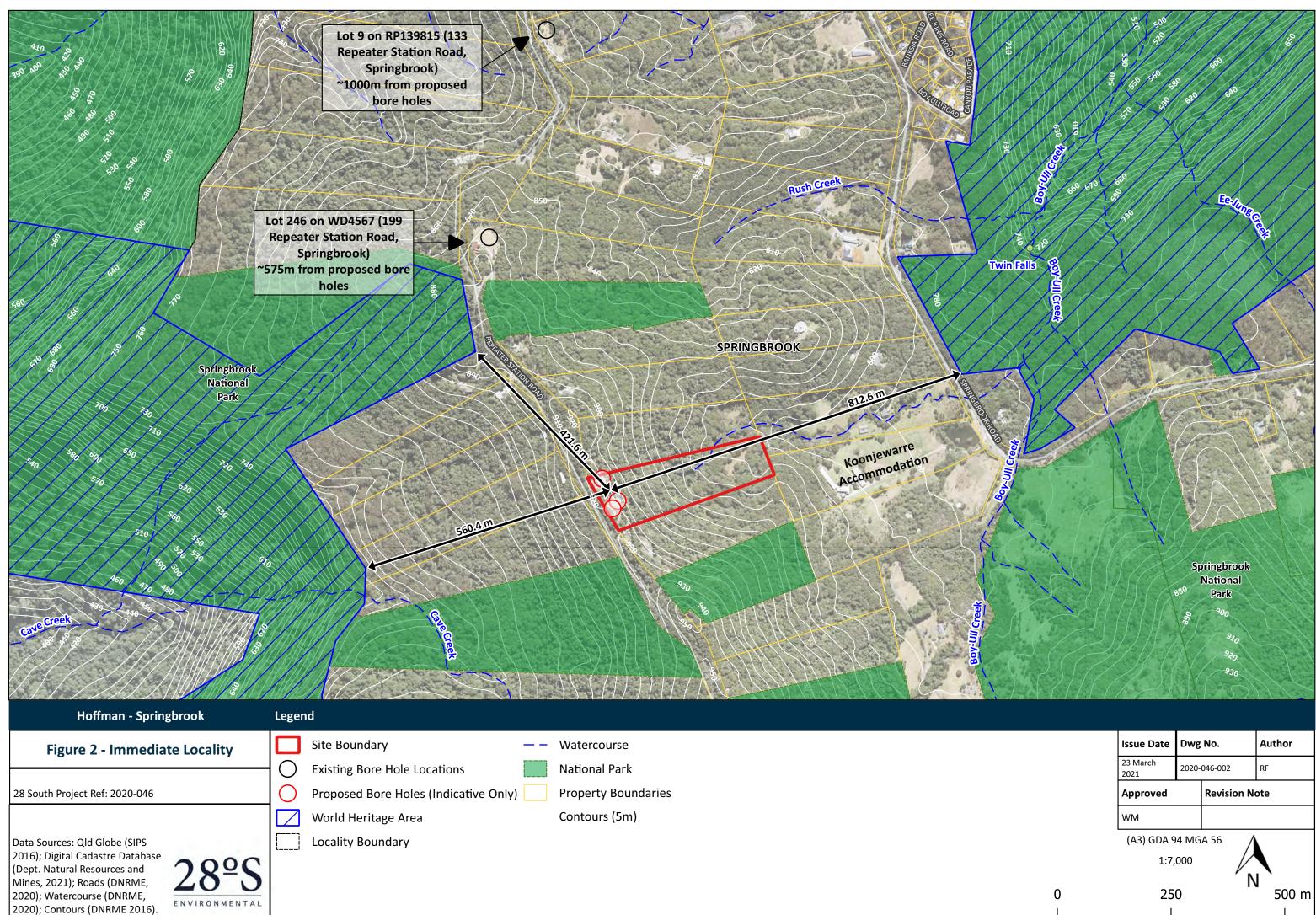
Rossetto M, Kooyman RM. 2021. Conserving refugia – what are we protecting and why? *Diversity* 13, 67. https://doi.org/10.3390/d13020067

UNESCO. 2012. Adoption of Statements of Outstanding Universal Value (WHC-12/36.COM/19), as presented in the Annex of Document WHC-12/36.COM/8E. Gondwana Rainforests of Australia.

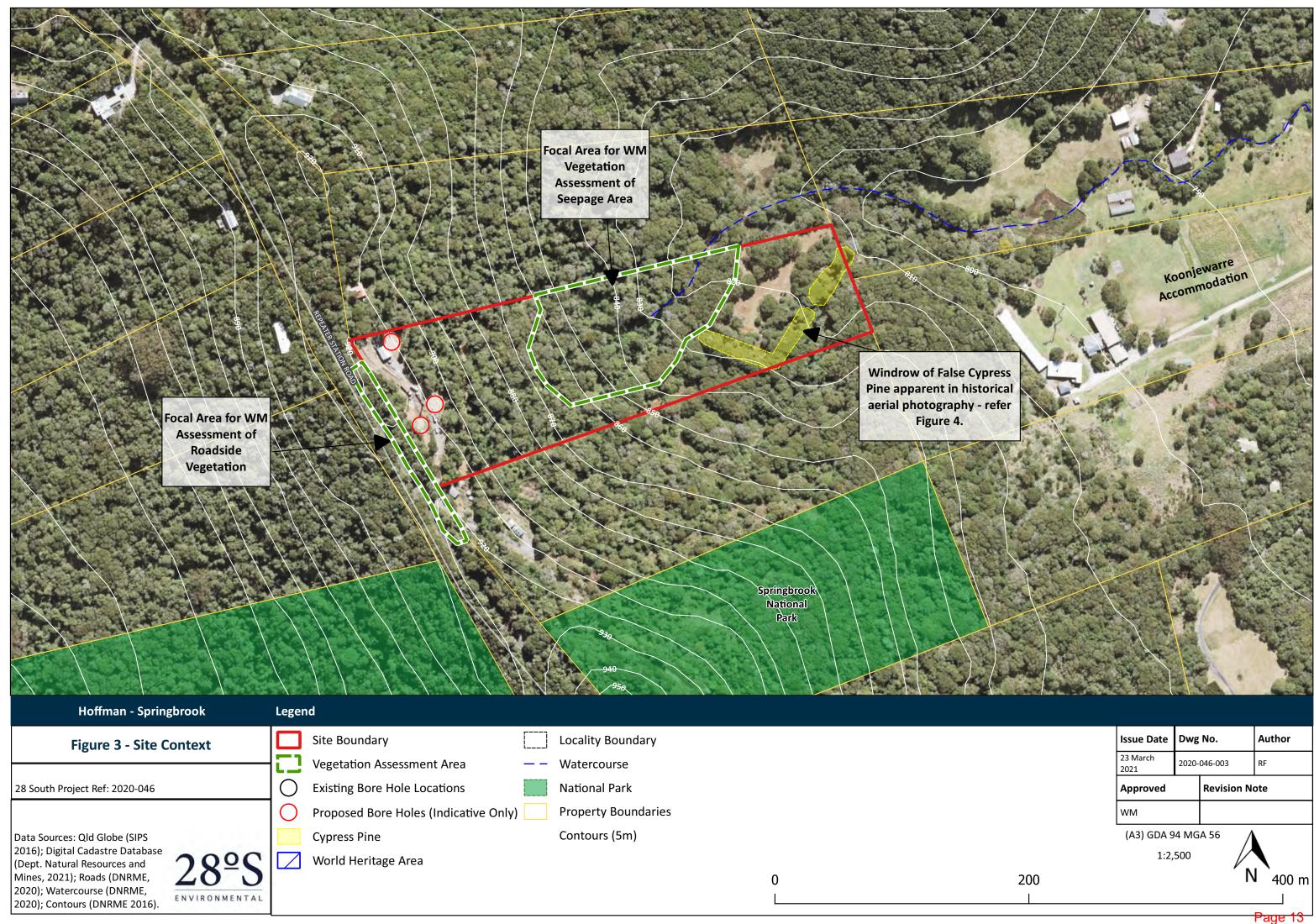
UNESCO. 2019. Operational Guidelines for the Implementation of the World Heritage Convention. UNESCO World Heritage Centre, France.



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APPENDIX 1 – CURRICULA VITAE

CV for: Robert Michael Kooyman (PhD)

220 Dingo Lane, Myocum. NSW 2481 Australia Email: robert.kooyman@mq.edu.au

QUALIFICATIONS

- Ph.D (2011) Comparative Ecology Lab, Department of Biological Sciences, Macquarie University. Australian Rainforest Ecology on the Basis of Species Traits.
- Master of Science (MSc) (2005) by research through University of New England (Botany). A study of the rainforest habitat and population biology and ecology of the endangered rainforest tree *Uromyrtus australis* A.J. Scott.
- Graduate Certificate (Forest Science), Melbourne University.

AFFILIATIONS

- Hon. Research Associate National Herbarium of NSW (Royal Botanic Gardens and Domain Trust, Sydney).
- Research Fellow, Comparative Ecology Lab, Department of Biological Sciences, Macquarie University, Sydney.
- Hon. Research Associate Missouri Botanical Garden, Missouri, USA.

MEMBERSHIPS

Ecological Society of Australia Ecological Society of America Botanical Society of America (including paleobotanical group) Association for Tropical Biodiversity and Conservation International Society for Conservation Biology

CURRENT POSITION

2020 Hon. Research Fellow - Macquarie University Department of Biological Sciences

PREVIOUS POSITION

Conservation Ecologist with the Evolutionary Ecology Unit at the National Herbarium of NSW (Royal Botanic Gardens and Domain Trust, Sydney).

BACKGROUND

Robert has undertaken extensive field work and research and surveys for a broad range of flora and fauna species. He has substantial experience in research on endangered and threatened species, communities, and ecosystems; and more than 40 years involvement with native vegetation management and ecosystem restoration activities, fauna habitat assessment and rehabilitation, and 'landscape' scale approaches to ecosystem and habitat management. He has accumulated an extensive knowledge of the forest ecosystems and flora and fauna of Australia, and has worked in the rainforests of New Zealand, the South Pacific, Southeast Asia, tropical and temperate South and Central America, and Madagascar. Robert spent more than 10 years doing pre- and post-logging surveys and impact assessments with State Forests of NSW. With the National Herbarium of NSW (Royal Botanic Gardens and Domain Trust), Sydney, he completed the threatened flora component of bio-regional recovery planning for the Border Ranges Biodiversity Management Plan for southeast Qld and northeast NSW. He has undertaken the planning and implementation of large-scale restoration actions in rainforest and sclerophyll communities (for example, the North Washpool Rehabilitation in NSW); and the planning and implementation of species recovery actions under the Threatened Species Act. He is currently working in Madagascar with Missouri Botanical

Garden on large-scale rainforest restoration projects, including mine sites on ultramafic and white sand soils.

Publications

Scholarly book chapters

- Rossetto, M. and Kooyman, R.M. (2011) Predicting distributions by analysing evolutionary, functional and environmental information – a review of population genetic studies on the Australian rainforest flora. In: (ed. J.A. Daniels) Chapter 11, Advances in Environmental Research, Volume 9. Nova Science Publishers, Inc., pp. 305-322.
- Kanowski, J., Kooyman, R.M. and Catterall, C.P. (2009) Dynamics and restoration of Australian subtropical and tropical rainforests. In: (eds. R. Hobbs and K. Suding) New Models for Ecosystem Dynamics and Restoration. Island Press. Washington DC. USA.

Published refereed peer-reviewed journal articles

- Daniel Falster et al. 2021. AusTraits a curated plant trait database for the Australian flora. bioRxiv preprint doi: https://doi.org/10.1101/2021.01.04.425314; this version posted January 7, 2021. (pre-print)
- Ward M, Tulloch AIT, Radford JQ, Williams BA, Reside AE, Macdonald SL, Mayfield HJ, Maron M, Possingham HP, Vine SJ, O'Connor JL, Massingham EJ, Greenville AC, Woinarski JCZ, Garnett ST, Lintermans M, Scheele BC, Carwardine J, Nimmo DG, Lindenmayer DB, Kooyman RM, Simmonds JS, Sonter LJ, Watson JEM. 2020. Impact of 2019–2020 mega-fires on Australian fauna habitat. *Nature Ecology and Evolution* https://doi.org/10.1038/s41559-020-1251-1
- Muscarella R, Emilio T, Phillips OL, et al. 2020. The global abundance of tree palms. *Global Ecology and Biogeography* https://doi.org/10.1111/geb.13123
- Lindenmayer DB, **Kooyman** RM, Taylor C, Ward M, Watson JEM. 2020. Recent Australian wildfires made worse by logging and associated forest management. *Nature Evolution and Ecology* 4:898-900. https://doi.org/10.1038/s41559-020-1195-5
- Kooyman RM, Watson J, Wilf P. 2020. Protect Australia's Gondwana Rainforests. *Science* 367: Issue 6482: 1083. DOI: 10.1126/science.abb2046
- Delmas C, **Kooyman** RM, Rossetto M. 2020. Evolutionary constraints and adaptation shape the size and colour of rainforest fruits and flowers at continental scale. *Global Ecology and Biogeography* 29: 830-841. DOI: 10.1111/geb.13065
- Kooyman RM, Morley RJ, Crayn DM, Joyce EM, Rossetto M, Slik JWF, Strijk JS, Su T, Yap J-Y S, Wilf P. 2019. Origins and Assembly of Malesian Rainforests. Annual Reviews of Evolution, Ecology and Systematics 50:119–143. https://doi.org/10.1146/annurev-ecolsys-110218-024737
- Rutherford S, van der Merwe M, Wilson PG, **Kooyman** RM and Rossetto M. 2019. Managing the risk of genetic swamping of a rare and restricted tree. *Conservation Genetics* https://doi.org/10.1007/s10592-019-01201-4

- Slik et al. 2018. Phylogenetic classification of the world's tropical forests. *Proceedings of the National Academy of Sciences, U.S.A.* www.pnas.org/cgi/doi/10.1073/pnas.1714977115
- Yap, J-Y., Rossetto, M., Costion, C., Crayn, D., Kooyman, R.M., Richardson, J. and Henry, R. 2018. Filters of floristic exchange: how traits and climate shape the invasion of Sahul from Sunda. *Journal of Biogeography* DOI: 10.1111/jbi.13143
- Wright, I.J., Dong, N., Maire, V., Prentice, I.C., Westoby, M., Díaz, S., Gallagher, R.V., Jacobs, B.F., Kooyman, R.M., Law, E.A., Leishman, M.R, Niinemets, Ü., Reich, P.B., Sack, L., Villar, R., Wang, H., Wilf, P. 2017. Global Climatic Drivers Of Leaf Size. Science 357: 917–921.
- Sams, M.A., Lai, H.R., Vesk, P.A., Bonser, S.P., Kooyman, R.M., Metcalfe, D.J., Morgan, J.W. and Mayfield, M.M. 2017. Land use history explains changes in the functional diversity of recovering forests better than climate or species richness. *Global Ecology* and Biogeography 26: 1165–1176.
- Bokhorst, S., Kardol, P., Bellingham, P.J., Kooyman, R.M., Richardson, S.J., Schmidt, S. and Wardle, D.A. 2017. Responses of communities of soil organisms and plants to soil aging for two contrasting long-term chronosequences. *Soil Biology and Biochemistry* 106: 69-79.
- Kooyman, R.M., Laffan, S.W. and Westoby, M. 2016. The incidence of low phosphorus soils in Australia. *Plant and Soil* DOI 10.1007/s11104-016-3057-0 Issue 412(1): 143-150.
- Costion, C.M., Lowe, A.J., Rossetto, M., Kooyman, R.M., Breed, M.F., Ford, A., Crayn, D.M. 2016. Building a plant DNA barcode reference library for a diverse tropical flora: an example from Queensland, Australia. *Diversity* 8, 5; doi:10.3390/d8010005
- Georges Kunstler, David A. Coomes, Daniel Falster, Francis Hui, Robert M. Kooyman, Daniel C. Laughlin, Lourens Poorter, Mark Vanderwel, Ghislain Vieilledent, Joseph S. Wright, Masahiro Aiba, Christopher Baraloto, John Caspersen, J. Hans C. Cornelissen, Sylvie Gourlet-Fleury, Marc Hanewinkel, Bruno Herault, Jens Kattge, Hiroko Kurokawa, Yusuke Onoda, Josep Penuelas, Hendrik Poorter, Maria Uriarte, Sarah Richardson, Paloma Ruiz-Benito, I-Fang Sun, Goran Ståhl, Nathan Swenson, Jill Thompson, Bertil Westerlund, Christian Wirth, Miguel A. Zavala, Hongcheng Zeng, Jess Zimmerman, Niklaus E. Zimmermann, and Mark Westoby. 2016. Plant functional traits have globally consistent effects on competition. *Nature* doi:10.1038/nature16476
- Rossetto, M., Kooyman, R.M., Yap, J-Y.S., Laffan, S. 2015. From ratites to rats: the size of fleshy fruits shapes species distributions and continental rainforest assembly. *Proceedings of the Royal Society* Biology B 282: 20151998 (electronic)
- Rossetto, M., McPherson, H., Siow, J., Kooyman, R., van der Merwe, M. and Wilson, P.D. 2015. Where did all the trees come from? A novel multispecies approach reveals the impacts of biogeographical history and functional diversity on rain forest assembly. *Journal of Biogeography* 42: 2172-2186. doi:10.1111/jbi.12571
- Merkhofer, L., Wilf, P., Haas, M.T., Kooyman, R.M., Sack, L., Scoffoni, C. and Cúneo, N.R. 2015. Resolving Australian analogs for an Eocene Patagonian paleorainforest using leaf size and floristics. *American Journal of Botany* 102: 1160-1173.

- Slik, F. et al. 2015. An estimate of the number of tropical tree species. *Proceedings of the National Academy of Sciences, U.S.A.* doi/10.1073/pnas.1423147112
- Kooyman, R.M., Wilf, P., Barreda, V.D., Carpenter, R.J., Jordan, G.J., Sniderman, J.M.K., Allen, A., Brodribb, T.J., Crayn, D., Feild, T.S., Laffan, S.W., Lusk, C.H., Rossetto, M., Weston, P.H. (2014) Paleo-Antarctic Rainforest into the Modern Old World Tropics: the Rich Past and Threatened Future of the 'Southern Wet Forest Survivors' *American Journal of Botany* 101:2121-2135.
- Wilf, P., Escapa, I.H., Cúneo, N.R., Kooyman, R.M., Johnson, K.R. and Iglesias, A. (2014) First South American Agathis (Araucariaceae), Eocene of Patagonia. American Journal of Botany 101(1): 156-179.
- Cornwell, W.K., Westoby, M., Falster, D.S., FitzJohn, R.G., O'Meara, B.C., Pennell, M.W., McGlinn, D.J., Eastman, J.M., Moles, A.T., Reich, P.B., Tank, D.C., Wright, I.J., Aarssen, L., Beaulieu, J.M., Kooyman, R.M., Leishman, M.R., Miller, E.T., Niinemets, Ü., Oleksyn, J., Ordonez, A., Royer, D.L., Smith, S.A., Stevens, P.F., Warman, L., Wilf, P. and Amy E. Zanne (2014) Functional distinctiveness of major plant lineages. *Journal of Ecology* 102: 345-356.
- Kooyman, R.M., Rossetto M., Sauquet, H. and Laffan, S.W. (2013) Landscape patterns in rainforest phylogenetic signal: isolated islands of refugia or structured continental distributions? PLoS ONE 8(12): e80685. doi:10.1371/journal.pone.0080685
- Kooyman, R.M., Zanne, A., Gallagher, R.V., Cornwell, W., Rossetto, M., O'Connor, P., Parkes, E.A., Catterall, C.F., Laffan, S.W. and Lusk, C.H. (2013) Effects of growth form and functional traits on response of woody plants to fragmentation of subtropical rain forest. *Conservation Biology* 27(6): 1468-1477.
- **Kooyman**, R.M., Rossetto, M. and Laffan, S. (2012) Using Australian Virtual Herbarium data to find all the woody rain forest plants in Australia. *Cunninghamia* 12(3): 177-180.
- **Kooyman**, R.M. (2012) Traits and gradients influence the canopy position of small-statured rain forest trees. *Australian Journal of Botany* 60: 735-742.
- **Kooyman**, R.M., Rossetto, M., Allen, C. and Cornwell, W. (2012) Australian tropical and sub-tropical rainforest: phylogeny, functional biogeography and environmental gradients. *Biotropica* 44: 668-679.
- Kooyman, R.M., Rossetto, M., Cornwell, W. and Westoby, M. (2011) Phylogenetic tests of community assembly across regional to continental scales in tropical and sub-tropical rainforests. *Global Ecology and Biogeography* 20: 707-716.
- Lusk, C.H., Sendall, K. and **Kooyman**, R. (2011) Latitude, solar elevation angles, and gapregenerating rainforest pioneers. *Journal of Ecology* 99: 491-502.
- **Kooyman**, R.M., Cornwell, W. and Westoby, M. (2010) Plant functional traits in Australian sub-tropical rain forest: partitioning within community from cross-landscape variation. *Journal of Ecology* 98: 517-525.
- Lusk, C.H., Onoda, Y., Kooyman, R.M. and Gutie´rrez-Giro´n, A. (2010). Reconciling species-level vs plastic responses of evergreen leaf structure to light gradients: shade leaves punch above their weight. *New Phytologist* doi: 10.1111/j.1469-8137.2010.03202.x

- Kooyman, R.M. and Westoby, M. (2009) Costs of height gain in rainforest saplings: main stem scaling, functional traits and strategy variation across 75 species. *Annals of Botany* 104: 987-993.
- Royer, D.L., Kooyman, R.M., Little, S.A. and Wilf, P. (2009) Ecology of leaf teeth: a multisite analysis from an Australian sub-tropical rainforest. *American Journal of Botany* 96: 738-750.
- Kooyman, R.M. and Rossetto, M. (2008) Definition of plant functional groups for informing implementation scenarios in resource-limited multi-species recovery planning. *Biodiversity and Conservation* 17: 2917-2937.
- Maynard, D., Crayn, D., Rossetto, M., **Kooyman**, R. and Coode, M. (2008) *Elaeocarpus sedentarius* sp. nov. (Elaeocarpaceae) – morphometric analysis of a new, rare species from eastern Australia. *Australian Systematic Botany* 21: 192-200.
- Rossetto, M., **Kooyman**, R.M., Sherwin, W. and Jones, R. (2008) Dispersal limitations rather than bottlenecks or habitat specificity can restrict the distribution of rare and endemic rainforest trees. *American Journal of Botany* 95: 321-329.
- **Kooyman**, R.M. and Rossetto, M. (2006) Factors influencing species selection for littoral rainforest restoration: Do environmental gradients matter? *Ecological Restoration and Management* 7: 113-122.
- Kariuki, M., Kooyman, R.M., Brooks, L., Smith, R.G.B. and Vanclay J.K. (2006) Modelling growth, recruitments and mortality to describe and simulate dynamics of subtropical rainforests following different levels of disturbance. Forest Biometry, Modelling and Information Sciences 1: 22-46. http://www.fbmis.info/A/6_1_KariukiM_1
- Kariuki, M., Rolfe, M., Smith, R.G.B., Vanclay, J.K. and Kooyman, R.M. (2006) Diameter growth performance varies with species functional-group and habitat characteristics in subtropical rainforests. *Forest Ecology and Management* 225: 1-14.
- Kariuki, M. and **Kooyman**, R.M. (2005) Floristic changes and regeneration patterns for a 12year period during the 3rd and 4th decades following selection logging in a subtropical rainforest. *Austral Ecology* 30: 844-855.
- Rossetto, M. and **Kooyman**, R.M. (2005) The tension between dispersal and persistence regulates the current distribution of rare palaeo-endemic rainforest flora: a case study. *Journal of Ecology* 93: 906-917.
- Weston, P. and **Kooyman**, R.M. (2002a) Systematics of *Eidothea* (Proteaceae), with the description of a new species, *Eidothea hardeniana*, from the Nightcap Range, north-eastern New South Wales. *Telopea* 9: 821-832.
- Weston, P. and **Kooyman**, R.M. (2002b) *Eidothea hardeniana*: botany and ecology of the 'Nightcap Oak'. *Australian Plants* 21: 342-344.
- Catling, P.C., Burt, R.J. and **Kooyman**, R.M. (1997) A Comparison of Techniques Used in a Survey of the Ground-dwelling and Arboreal Mammals in Forests in North-eastern New South Wales. *Wildlife Research* 24: 417-432.

Some Conference submissions (invited presentations and abstracts)

Kooyman, R.M. (2019) Tropical rainforest assembly: evolution, ecology and biogeography. In symposium titled: Restoration of Tropical Forests: lessons from Madagascar and beyond. ATBC Conference Antananarivo, Madagascar, July-August 2019.

- Kooyman, R.M. and Wilf, P. (2017) Palaeo-Antarctic Plant Lineages in Rainforests of Australasia and Southeast Asia: Diversity, Abundance and Ecology. SAGE Conference, Symposium 'Origins of the SE Asian Rainforest'. Bogor, Java, Indonesia.
- Kooyman, R.M., Yap, S., Rossetto, M., Costion, C., Crayn, D. (2017) Filters of floristic exchange: how traits and climate shaped the invasion of Sahul from Sunda. SAGE Conference, Symposium 'Origins of the SE Asian Rainforest'. Bogor, Java, Indonesia.
- **Kooyman**, R.M., Rossetto, M., Cornwell, W. and Westoby, M. (2011) Australian rain forest community assembly: some functional and phylogenetic perspectives. Ecological Society of Australia Conference, Hobart, Tasmania.
- **Kooyman**, R.M., Rossetto, M., Cornwell, W., Allen, C. and Westoby, M. (2011) Australian tropical and sub-tropical rainforest community assembly: functional traits and phylogenetic history. International Botanical Congress, Melbourne.
- **Kooyman**, R.M., Rossetto, M., Cornwell, W. and Westoby, M. (2010) Phylogenetic tests of community assembly across regional to continental scales in tropical and sub-tropical rainforests. Association for Tropical Biology and Conservation Conference, Bali, Indonesia.
- **Kooyman**, R.M., Rossetto, M., Cornwell, W. and Westoby, M. (2010) Untangling southern origins and northern connections. Australian rainforest community assembly. Southern Connections Congress, Bariloche, Argentina.
- **Kooyman**, R.M., Rossetto, M., Cornwell, W. and Westoby, M. (2009) Plant functional traits, phylogenetic structure, and community assembly: emerging patterns in community ecology. INTECOL (International Ecological Conference), Brisbane.
- Kooyman, R.M. (2003). Rainforest rehabilitation: building an evolutionary future from the remnants of the past. In: *Plant Conservation: approaches and techniques from an Australian perspective*. ANPC. Canberra. Based on a presentation given in Lismore (SCU), NSW.





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Wayne Moffitt DIRECTOR AND PRINCIPALECOLOGIST

With twenty-seven years of experience as an environmental manager and ecologist in Queensland, New South Wales and Victoria, Wayne Moffitt has an in depth understanding of the unique qualities of these regions, their complex land management issues and the regulatory framework that affords them protection.

Wayne has led assessment in a wide range of environments and development settings and has advised clients in both the public and private sector on matters including: ecological assessment and management; threatened species management; vegetation and rehabilitation management plans; ecological monitoring; sensitive area development; and statutory compliance. He is very familiar with the statutory approval processes for urban, tourism, infrastructure, rural, and resource development; and has coordinated approvals for many high-profile projects.

Wayne is regularly called upon to provide expert evidence on ecology and environmental planning issues in merits appeals, land clearing prosecution matters, and *highest and best use* valuation and compensation claims. He has appeared in the Queensland Planning and Environment Court, the Queensland Land Court and the New South Wales Land and Environment Court and has significant experience in delivery of documentary and oral evidence. Wayne is familiar with the rigors of the expert process, including the applicable court rules and procedures.

This CV outlines Wayne's legal experience.

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QUEENSLAND

Ongoing Matters

LAND COURT OF QUEENSLAND MATTER MER708-19

Denis Campbell Conway & Ors v Australia Pacific LNG CSG Transmissions Pty Ltd: Ecological Advice in Relation to Constraint Mapping of land, Tecoma: Instructing Solicitor, Alroe Somers & O'Sullivan Solicitors

POTENTIAL LAND COURT OF QUEENSLAND MATTER

Ambertone Pty Ltd v Brisbane City Council: Ecological Advice in Relation to Resumption of land, Kholo: Instructing Solicitor, Ruddy Legal Pty Ltd

LAND COURT OF QUEENSLAND MATTER AQL 012-19

Colin Mellish v Redland City Council: Ecological Advice in Relation to Resumption of land, Thornlands: Instructing Solicitor, Redland City Council

PLANNING AND ENVIRONMENT COURT APPEAL 3720 OF 2019

Sandstom & Ors v Sunshine Coast Council and Anor. Proposed Surfrider Clubhouse, Currimundi: Instructing Solicitor, McCarthy Durie Lawyers

PLANNING AND ENVIRONMENT COURT APPEAL 3829 OF 2019

Sutgold Pty Ltd. V Redland City Council. Proposed Residential Development, Thornlands: Instructing Solicitor, Anderssen Lawyers

PLANNING AND ENVIRONMENT COURT MATTER 1409 OF 2019

YQ Property Pty Ltd v Brisbane City Council: Proposed Townhouse Development, Holland Park: Instructing Solicitor, MacDonnells Law

PLANNING AND ENVIRONMENT COURT APPEAL 771 of 2019

Laurence Lancini v Sunshine Coast Regional Council. Proposed establishment of a rural dam: Instructing Solicitor, Keir Steele Waldron Lawyers

PLANNING AND ENVIRONMENT COURT MATTER 239 OF 2019

Paul Boudar v Moreton Bay Regional Council: Conditions Appeal Proposed Storage Facility and Transport Depot, Deception Bay: Instructing Solicitor, Moreton Bay Regional Council.

PLANNING AND ENVIRONMENT COURT MATTER 4526 of 2018

GTH Resorts No 5 Pty. Ltd v Gold Coast City Council: Proposed Aged Care Facility, Gold Coast: Instructing Solicitor, Thomson Geer

PLANNING AND ENVIRONMENT COURT APPEAL 4457 OF 2018

Weyba Pty Ltd v Ipswich City Council, Proposed Residential Development, Goodna: Instructing Solicitor, HWL Ebsworth

PLANNING AND ENVIRONMENT COURT MATTER 4225 OF 2018

YM Private Pty Ltd. V Brisbane City Council: Proposed Townhouse Development and Childcare Facility, Chapel Hill: Instructing Solicitor, HWL Ebsworth

PLANNING AND ENVIRONMENT COURT APPEAL D152 OF 2018

Kenilworth Camping Pty Ltd v Sunshine Coast Regional Council, Proposed Change of Use to Nature Based Tourism, Kenilworth: Instructing Solicitor, p&e Law

PLANNING AND ENVIRONMENT COURT MATTER 61 of 2018

Washington Andres Gabarrin v Noosa Council: Proposed Residential Development, Lake Weyba: Instructing Solicitor Wakefield Sykes

PLANNING AND ENVIRONMENT COURT MATTER 3709 OF 2015

(Braxdan Pty Ltd v Brisbane City Council & REPA): Proposed Residential Development, Moggill: Instructing Solicitor, Connor O'Meara.

PLANNING AND ENVIRONMENT COURT MATTER 196 OF 2015

(Chief Executive of the Department of Infrastructure, Local Government and Planning ats Knuth (ATF The Burdekin Downs Pastoral Trust): Assessment of application for High Value Agriculture under the VM Act: Instructing Solicitor, Corrs Chambers Westgarth.

QUEENSLAND

Resolved Matters

PLANNING AND ENVIRONMENT COURT APPEAL 1810 OF 2019

DFC (Project Management) Pty Ltd v Brisbane City Council, Proposed Residential Development, Nundah: Instructing Solicitor, Thomson Geer

PLANNING AND ENVIRONMENT COURT APPEAL 745 OF 2019

Emily Wilson v Brisbane City Council & Ors, Proposed Residential Development, The Gap: Instructing Solicitor, Connor O'Meara.

PLANNING AND ENVIRONMENT COURT APPEAL 4350 OF 2018

Micallef v Moreton Bay Regional Council, Landholder Representation Regarding the Proposed Establishment of an NBN Tower; Instructing Solicitor, Gerard Batt Lawyers

PLANNING AND ENVIRONMENT COURT MATTER 4244 OF 2018

Business Property Brokers v Gold Coast City Council: Conditions Appeal for Proposed Shopping Centre Expansion, Nerang: Instructing Solicitor, HWL Ebsworth

PLANNING AND ENVIRONMENT COURT MATTER 2317 of 2018

Opus Constructions Pty Ltd v Brisbane City Council: Proposed Multi-unit development, The Gap, Brisbane City: Instructing Solicitor, Connor O'Meara

PLANNING AND ENVIRONMENT COURT MATTER 2908 of 2018

Valley View Heights Management Services v Gold Coast City Council: Proposed residential development, Gold Coast. Instructing Solicitor, Hopgood Ganim

PLANNING AND ENVIRONMENT COURT MATTER 1483 of 2018

Cadmium Holding FW Pty Ltd v Council of the City of Gold Coast: Proposed Residential Development, Coomera, Gold Coast City: Instructing Solicitor, Thomson Geer

PLANNING AND ENVIRONMENT COURT MATTER 694 OF 2018

Australian National Homes v Moreton Bay Regional Council & BGM Projects Pty Ltd – Proposed Shopping Centre: Instructing Solicitor, McCullough Robertson

PLANNING AND ENVIRONMENT COURT MATTER 509 OF 2018

(Bovey v Brisbane City Council & 906 Hamilton Projects Pty Ltd) – Resident action against adjoining townhouse development: Instructing Solicitor, Clinton Mohr Lawyers

PLANNING AND ENVIRONMENT COURT MATTER 340 OF 2018

Murphy v Moreton Bay Regional Council & BGM Projects Pty Ltd – Proposed Shopping Centre: Instructing Solicitor, McCullough Robertson

PLANNING AND ENVIRONMENT COURT MATTER 165 of 2018

SCEC v SH Coolum and Sunshine Coast Regional Council: Proposed Mixed Use Tourist Facility, Sunshine Coast: Instructing Solicitor, Sunshine Coast Regional Council

PLANNING AND ENVIRONMENT COURT MATTER 4646 of 2017

Tricare (PT Vernon) Pty Ltd v Brisbane City Council: Proposed expansion of an aged care facility: Instructing Solicitor, Connor O'Meara

PLANNING AND ENVIRONMENT COURT MATTER 2662 OF 2017

Urbex Pty Ltd v Logan City Council: Proposed Residential Development, Logan Estate, Logan City: Instructing Solicitor, Holding Redlich.

PLANNING AND ENVIRONMENT COURT MATTER 1262 OF 2017

F.W Estate Pty Ltd & Ors v Logan City Council: Proposed Residential Development, Jimboomba: Instructing Solicitor, Minter Ellison.

PLANNING AND ENVIRONMENT COURT MATTER 997 OF 2017

(MLSM v Moreton Bay Regional Council): Dispute regarding bushland habitat under the Koala SPRP: Instructing Solicitor, Legal Services Department, Moreton Bay Regional Council.

PLANNING AND ENVIRONMENT COURT MATTER 4807 OF 2016

(IVL Group Pty Ltd and Lanrex Pty Ltd v Redland City Council): Amendment to a Development Permit (convenience retail centre): Instructing Solicitor, MacDonnells Law

PLANNING AND ENVIRONMENT COURT MATTER 4389 OF 2016

(Ahern v Brisbane City Council: Dispute regarding development approval conditions relating to encroachment into a mapped waterway corridor: Instructing solicitor, Walker Lawyers, and Anderssen Lawyers

PLANNING AND ENVIRONMENT MATTER 4087 OF 2016

(De Luchi v Moreton Bay Regional Council) – Assessment of Illegal Clearing: Instructing Solicitor, Moreton Bay Regional Council

PLANNING AND ENVIRONMENT COURT MATTER 4041 OF 2016

(Two Tops Pty Ltd v Brisbane City Council) – Permissible Change Application arising from previous Court approval: Instructing Solicitor, Thomson Geer

PLANNING AND ENVIRONMENT COURT MATTER 3882 OF 2016

Bigini v Brisbane City Council & Ors: Proposed Multi-unit dwelling, Toowong. Instructing Solicitor, McPherson Kelley

LAND COURT OF QUEENSLAND MATTER NO. AQL 017/16

Richardson (nee Sinathamby) v Brisbane City Council – Proposed Land Resumption for environmental purposes, Eight Mile Plains: Instructing Solicitor, Marcus Johnston Legal.

PLANNING AND ENVIRONMENT COURT MATTER 3075 OF 2016

(Redland City Council v Webb) – Enforcement proceedings regarding alleged illegal clearing: Instructing Solicitor, Hopgood Ganim.

PLANNING AND ENVIRONMENT COURT MATTER 1146 OF 2016

(Raelene Gayle Donovan v Brisbane City Council and Nicholas Andrew Buckle and Margaret Helen Jose-Buckle): Dispute regarding the removal of an environmental covenant: Instructing Solicitor, Pan & Partners Lawyers.

PLANNING AND ENVIRONMENT COURT MATTER 3796 OF 2015

(Tamborine Mountain Progress Association Inc v Scenic Rim Regional Council & Ors: Proposed Outdoor Sports, Recreation and Entertainment Facility (mountain bike trails and zip line park): Instructing Solicitor, Norton Rose Fulbright.

PLANNING AND ENVIRONMENT COURT MATTER 3621 OF 2015

(Brisbane City Council ats Harvest Asset Management Services) – Proposed residential development, The Gap: Instructing Solicitor, Thomson Geer.

PLANNING AND ENVIRONMENT COURT MATTER 3191 OF 2015

(Varsani v Brisbane City Council) – Proposed Residential Development, Moggill: Instructing Solicitor, Thomson Geer.

PLANNING AND ENVIRONMENT COURT MATTER 1631 OF 2015

(Tingalpa Central Holdings v Brisbane City Council) – Proposed commercial development, Tingalpa: Instructing Solicitor, Synkronos Legal.

PLANNING AND ENVIRONMENT COURT MATTER BD651 OF 2015

(Kinka Beach Pty Ltd v Livingstone Shire Council & Ors). Proposed Residential Development, Kinka Beach: Instructing Solicitor, King & Company.

PLANNING AND ENVIRONMENT COURT MATTER 4191 OF 2014

(Application by Villa World Developments Pty Ltd seeking a Permissible Change for the East Ridge development, Thornlands); Instructing Solicitor, Hickey Lawyers

PLANNING AND ENVIRONMENT COURT APPEAL NO. 1446 OF 2013

(JAB Gravel and Earthworks v Brisbane City Council & Ors) – Proposed Sand and Gravel Extraction Project, Bald Hills; Instructing Solicitor, SS Lawyers

PLANNING AND ENVIRONMENT COURT APPEAL NO. 4890 OF 2012

(Karalee Land Partners v Ipswich City Council) – Proposed residential development, Ipswich: Instructing Solicitor, Hopgood Ganim

PLANNING AND ENVIRONMENT COURT APPEAL NO. 4842 OF 2012

(Brisbane City Council ats Sarri Developments Pty. Ltd & Anor: Instructing Solicitor, Norton Rose.

PLANNING AND ENVIRONMENT COURT APPEAL NO. 3933 OF 2012

(Chong v Logan City Council) – Compensation Claim under section 705 of the Sustainable Planning Act 2009" Instructing Solicitor, Corrs Chambers Westgarth

PLANNING AND ENVIRONMENT COURT APPEAL BD3001 OF 2012

(Traspunt No. 4 Pty. Ltd v Moreton Bay Regional Council) – Assessment of the validity of a "critical habitat" designation under the Nature Conservation Act, Rothwell: Instructing Solicitor, Hallett Legal

LAND COURT OF QUEENSLAND MATTER NO. AQL206-11

(Silveressence Pty Ltd trading as Murrarie Landfill – v - Brisbane City Council – Proposed land resumption, Brisbane: Instructing Solicitor, Nicholsons.

PLANNING AND ENVIRONMENT COURT APPEAL NO. 2981 OF 2010

(Brisbane City Council –ats- Philip Usher Constructions) – Proposed Residential Development, Groth Road Boondall: Instructing Solicitor, Robert Milne Legal

PLANNING AND ENVIRONMENT COURT APPEAL NO. 2606 OF 2010

(Westlink Pty. Ltd as Trustee for the Westlink Industrial Trust - v – Lockyer Valley Regional Council & Ors) – Westlink Power Project, Gatton: Instructing Solicitor, McInnes Wilson Lawyers

PLANNING AND ENVIRONMENT COURT APPEAL NO. 2675 OF 2009

(Wigan v Redland City Council) – Proposed residential development, Thornlands; Instructing Solicitor, Milne Legal

PLANNING AND ENVIRONMENT COURT APPEAL 2271 OF 2009

(John Graham Clissold (as trustee) - v – Redland City Council) – Proposed Childcare Centre, Russell Island: Instructing Solicitor, Robert Milne Legal

PLANNING AND ENVIRONMENT COURT APPEAL NO. 1963 OF 2009

(George v Redland City Council) - Proposed residential development, Thornlands; Instructing Solicitor, Hickey Lawyers

PLANNING AND ENVIRONMENT COURT APPEAL BD1050 OF 2009

(Gold Coast City Council ats Heck): Instructing Solicitor, McInnes Wilson Lawyers

PLANNING AND ENVIRONMENT COURT APPEALS BD 2084 AND 2085 OF 2008

(Sunnygold International Pty. Ltd and Brisbane City Council and Ors ats HTWCG and Smith) – Proposed Residential Development, Tingalpa: Instructing Solicitor, DLA Phillips Fox

PLANNING AND ENVIRONMENT COURT APPEAL BD 3411 OF 2008

(Krajniw and Ors v Brisbane City Council and Ors) – Proposed Golf Course and Residential Development (Cannon Hill Community Links), Cannon Hill: Instructing Solicitor Deacons

PLANNING AND ENVIRONMENT COURT APPEAL 2481 OF 2008

(Buildev Developments (Qld) Pty. Ltd v Gold Coast City Council) – Proposed Industrial Development, Yatala: Instructing Solicitor: Deacons

PLANNING AND ENVIRONMENT COURT APPEAL BD 1880 OF 2008

(Heritage Properties and Anor v Redland Shire Council and Ors) - Proposed Residential Development, Thornlands: Instructing Solicitor, HWL Ebsworth Lawyers

PLANNING AND ENVIRONMENT COURT APPEAL BD 1968 OF 2006

(Blue Care v Brisbane City Council and Ors) – Proposed Aged Care Facility, Cannon Hill: Instructing Solicitor – Deacons

PLANNING AND ENVIRONMENT COURT APPEAL NO. 1497 OF 2006

(Jack's Property Developments v Ipswich City Council) – Proposed Relocatable Home Park, Ipswich: Instructing Solicitor Mallesons Stephens Jacques)

PLANNING AND ENVIRONMENT COURT APPEAL 4622 OF 2004

(Keilar Fox & McGee Pty. Ltd v Brisbane City Council) – Proposed Residential Development, The Gap: Instructing Solicitor, DLA Phillips Fox

PLANNING AND ENVIRONMENT COURT APPEALS 376 AND 377 OF 2003

(Barnes and Gold Coast City Council –ats- O'Shea and Gecko) – Proposed Expansion of an Ecotourism Facility, Springbrook): Instructing Solicitor, DLA Phillips Fox

PLANNING AND ENVIRONMENT COURT APPEAL 4859 OF 2000

(Stradbroke Island Management Organisation Inc IA6856 and Ors v. Redland Shire Council & Ors) - Redevelopment of Stradbroke Island Beach Hotel: Instructing Solicitor DLA Phillips Fox

PLANNING AND ENVIRONMENT COURT APPEAL 49 OF 199

7 (Noosa Shire Council –ats- Robert Brothers Holdings) – Proposed Residential Development, Cooroy: Instructing Solicitor, Robert Milne Legal

NEW SOUTH WALES



Ongoing Matters

Ongoing investigations for the New South Wales Office of Environment and Heritage in relation to alleged illegal land clearing on the western slopes of NSW.

NEW SOUTH WALES

Matters Resolved

NSW LAND AND ENVIRONMENT COURT NO 50659 AND 50660 OF 2014

(Topview Brisbane Pty. Ltd v Office of Environment and Heritage) - Landholder Representation regarding Illegal Clearing Matter: Instructing Solicitor, Mills Oakley Lawyers

NSW LAND AND ENVIRONMENT COURT NO. 11095 OF 2012

(Grayson-v-Office of Environment and Heritage) – Landholder Representation regarding Illegal Clearing Matter: Instructing Solicitor, Hannigans Solicitors

SUPREME COURT CLAIM NO. S9495 OF 1999

(Richmond River Shire Council and Ors–ats- Iron Gates (in liquidation) and Anor) – Defense of Claim for Compensation – Proposed Iron Gates development, Evans Head: Instructing Solicitor: Hannigans Solicitors

NSW LAND AND ENVIRONMENT COURT CLASS 1 PROCEEDINGS NO 10087 OF 2009

(Ballina Shire Council –ats- Doojoo Pty. Ltd) - Proposed Hard Rock Quarry, Ballina: Instructing Solicitor, Walters Solicitors

NSW LAND AND ENVIRONMENT COURT NO. 10226 OF 2006

(Richmond Valley Council –ats- Newton Denny Chapelle) – Proposed Poultry Farm, Richmond Valley NSW: Instructing Solicitor, Hannigans Solicitors

NSW LAND AND ENVIRONMENT COURT CASE NUMBERS 50028 AND 50029 OF 2009

(Sommerville and Iaana –ats- Department of Environment and Climate Change) - Landholder Representation in Regard to Illegal Clearing Matter: Instructing Solicitor, Hannigans Solicitors

COMMONWEALTH (EPBC ACT)

LANDHOLDER REPRESENTATION REGARDING ALLEGED OFFENCES UNDER EPBC ACT

- Impact on the Natural Grassland TEC: Instructing Solicitor, Mills Oakley Lawyers

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APPENDIX 2 – RK SYNOPSIS OF WHGRA VALUES

Appendix 2: Gondwana Rainforests of Australia - Statement of Outstanding Universal Value

A detailed compilation of the outstanding universal values of the World Heritage Gondwana Rainforests of Australia is provided in:

Hunter R.J. 2003 (revised 2004). World Heritage and associative natural values of the Central Eastern Rainforest Reserves of Australia. NSW NPWS.

Gondwana Rainforests of Australia State of Conservation update - April 2020

Brief synthesis

The Gondwana Rainforests of Australia is a serial property comprising the major remaining areas of rainforest in southeast Queensland and northeast New South Wales. It represents outstanding examples of major stages of the Earth's evolutionary history, ongoing geological and biological processes, and exceptional biological diversity. A wide range of plant and animal lineages and communities with ancient origins in Gondwana, many of which are restricted largely or entirely to the Gondwana Rainforests, survive in this collection of reserves. The Gondwana Rainforests also provides the principal habitat for many threatened species of plants and animals.

Criterion (viii) to be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features:

The Gondwana Rainforests provides outstanding examples of significant ongoing geological processes. When Australia separated from Antarctica following the breakup of Gondwana, new continental margins developed. The margin which formed along Australia's eastern edge is characterised by an asymmetrical marginal swell that runs parallel to the coastline, the erosion of which has resulted in the Great Divide and the Great Escarpment. This eastern continental margin experienced volcanicity during the Cenozoic Era as the Australian continental plate moved over one of the planet's hot spots. Volcanoes erupted in sequence along the east coast resulting in the Tweed, Focal Peak, Ebor and Barrington volcanic shields. This sequence of volcanos is significant as it enables the dating of the geomorphic evolution of eastern Australia through the study of the interaction of these volcanic remnants with the eastern highlands.

The Tweed Shield erosion caldera is possibly the best preserved erosion caldera in the world, notable for its size and age, for the presence of a prominent central mountain mass (Wollumbin/Mt Warning), and for the erosion of the caldera floor to basement rock. All three stages relating to the erosion of shield volcanoes (the

planeze, residual and skeletal stages) are readily distinguishable. Further south, the remnants of the Ebor Volcano also provides an outstanding example of the ongoing erosion of a shield volcano.

Criterion (ix) to be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals:

The Gondwana Rainforests contains outstanding examples of major stages in the Earth's evolutionary history as well as ongoing evolutionary processes. Major stages represented include the 'Age of the Pteridophytes' from the Carboniferous Period with some of the oldest elements of the world's ferns represented, and the 'Age of Conifers' in the Jurassic Period with one of the most significant centres of survival for Araucarians (the most ancient and phylogenetically primitive of the world's conifers). Likewise the property provides an outstanding record of the 'Age of the Angiosperms'. This includes a secondary centre of endemism for primitive flowering plants originating in the Early Cretaceous, the most diverse assemblage of relict angiosperm taxa representing the primary radiation of dicotyledons in the mid-Late Cretaceous, a unique record of the evolutionary history of Australian rainforests representing the 'golden age' of the Early Tertiary, and a unique record of Miocene vegetation that was the antecedent of modern temperate rainforests in Australia. The property also contains an outstanding number of songbird species, including lyrebirds (Menuridae), scrub-birds (Atrichornithidae), treecreepers (Climacteridae) and bowerbirds and catbirds (Ptilonorhynchidae), belonging to some of the oldest lineages of passerines that evolved in the Late Cretaceous. Outstanding examples of other relict vertebrate and invertebrate fauna from ancient lineages linked to the break-up of Gondwana also occur in the property.

The flora and fauna of the Gondwana Rainforests provides outstanding examples of ongoing evolution including plant and animal taxa which show evidence of relatively recent evolution. The rainforests have been described as 'an archipelago of refugia, a series of distinctive habitats that characterise a temporary endpoint in climatic and geomorphological evolution'. The distances between these 'islands' of rainforest represent barriers to the flow of genetic material for those taxa which have low dispersal ability, and this pressure has created the potential for continued speciation.

Criterion (x) to contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation:

The ecosystems of the Gondwana Rainforests contain significant and important natural habitats for species of conservation significance, particularly those associated with the rainforests which once covered much of the continent of Australia and are now restricted to archipelagos of small areas of rainforest isolated by sclerophyll vegetation and cleared land. The Gondwana Rainforests provides the principal habitat for many species of plants and animals of outstanding universal value, including more than 270 threatened species as well as relict and primitive taxa.

Rainforests covered most of Australia for much of the 40 million years after its separation from Gondwana. However, these rainforests contracted as climatic conditions changed and the continent drifted northwards. By the time of European settlement rainforests covered only 1% of the landmass and were restricted to refugia with suitable climatic conditions and protection from fire. Following European settlement, clearing for agriculture saw further loss of rainforests and only a quarter of the rainforest present in Australia at the time of European settlement remains.

The Gondwana Rainforests protects the largest and best stands of rainforest habitat remaining in this region. Many of the rare and threatened flora and fauna species are rainforest specialists, and their vulnerability to extinction is due to a variety of factors including the rarity of their rainforest habitat. The Gondwana Rainforests also protects large areas of other vegetation including a diverse range of heaths, rocky outcrop communities, forests and woodlands. These communities have a high diversity of plants and animals that add greatly to the value of the Gondwana Rainforests as habitat for rare, threatened and endemic species. The complex dynamics between rainforests and tall open forest particularly demonstrates the close evolutionary and ecological links between these communities.

Species continue to be discovered in the property including the re-discovery of two mammal species previously thought to have been extinct: the Hastings River Mouse (*Pseudomys oralis*) and Parma Wallaby (*Macropus parma*).