PROTECTING AND RESTORING QUEENSLAND'S COASTAL WETLANDS: IS A NEW LEGISLATIVE APPROACH REQUIRED?

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Coastal wetlands provide vital ecosystem services, including nutrient cycling, disaster risk reduction, and habitat for biodiversity, including shorebirds, seabirds, turtles and fish. How we design and implement policy approaches for the conservation of coastal wetlands and these ecosystem services matters enormously. This article joins a growing trend of literature that seeks to not only identify the importance of coastal wetlands, but also to consider how best to devise policy measures for their protection and restoration. The article focuses on Queensland's coastal wetlands and suggests that the state has a real opportunity to become a national leader in wetland restoration. For that to occur, new legislative measures may be required to address issues such as tenure, land access, planning and risk management.

I INTRODUCTION

Coastal wetlands are an integral part of the Australian landscape. They are vital for both biodiversity and human health. For birds, fish and aquatic plant life (especially mangroves and seagrass) they provide critical habitat and refuge; and for humans, they are a source of flood control,[1] carbon sequestration[2] and cultural heritage.[3] Often considered the 'poor cousins' of the landscape,[4] wetlands require

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1 Xiaoguang Ouyang et al, 'Spatially-Explicit Valuation of Coastal Wetlands for Cyclone Mitigation in Australia and China' (2018) 8 *Scientific Reports* art 3035.

2 Catherine Lovelock, Fernanda Adame and Matthew A Hayes, 'Contemporary Rates of Carbon Sequestration through Vertical Accretion of Sediments in Mangrove Forests and Saltmarshes of South East Queensland, Australia' (2014) 37(3) *Estuaries and Coasts* 763.

3 John C Ryan and Li Chen, *Australian Wetland Cultures: Swamps and the Environmental Crisis* (Lexington Books, 2019).

4 Richard T Kingsford, Alberto Basset and Leland Jackson, 'Wetlands: Conservations Poor Cousins' (2016) 26(5) *Aquatic Conservation: Marine and Freshwater Ecosystems* 892.

both protection and restoration.[5] Pollution, over-exploitation, climate change and land conversion have damaged Australian wetland environments, as they have in many other nations.[6] Many coastal and intertidal areas in Queensland are now at risk from sediment, nutrients, chemicals and litter,[7] as well as population growth, climate change, overfishing and coastal development.

In seeking new or improved policy approaches to halting and reversing wetland declines, governments may need to look beyond static or 'passive' models of legal protectionism that focus primarily on regulating the impacts of 'development'. Forward-looking legislative measures that directly tackle issues such as risk assessment, land tenure and land access could potentially support wetland restoration by providing certainty and clarity for relevant stakeholders. Environmental offsets, despite their many shortcomings,[8] are a potential component of this approach, but they are by no means the only part. In other words, it may be necessary to consider how environmental law[9] can not only be restrictive in terms of mitigating the impacts of future development, but also supportive in terms of promoting positive interventions into the landscape to make good past damage.[10] A legislative backing for coastal wetland restoration may provide confidence for 'blue finance' investment in 'blue capital' projects across the state to bolster the increasing attention of the 'blue economy',[11] including using restoration as a tool for managing the impacts of sea level rise and

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5 Sasha Alexander and Robert McInnes, *The Benefits of Wetland Restoration: Ramsar Scientific and Technical Briefing Note 4* (Ramsar Convention Secretariat, 2012).

6 Royal Gardner and Max Finlayson, *Global Wetland Outlook: State of the World's Wetlands* (Report, Ramsar Secretariat, 2018).

7 See Queensland Government, *State of the Environment Report, Biodiversity: Estuarine and Marine Ecosystems* (Report, 2017) <https://www.stateoftheenvironment.des.qld.gov.au/biodiversity/estuarine-and-marine-ecosystems>. Wetlands in the catchments of the Great Barrier Reef ('GBR') are reported to be generally 'well protected', but they still face threats from 'water pollution, invasive species, changes in hydrology, and increasing temperature and salinity resulting from climate change' See Maria Fernanda Adame et al, 'Managing Threats and Restoring Wetlands within Catchments of the Great Barrier Reef, Australia' (2019) 29(5) *Aquatic Conservation: Marine and Freshwater Ecosystems* 829, 829.

8 See the concerns about offsets in Martine Maron et al, 'Taming a Wicked Problem: Resolving Controversies in Biodiversity Offsetting' (2016) 66(6) *BioScience* 489.

9 In this article, we refer mainly to statutory frameworks for environmental protection and the sustainable use of nature within Queensland's wetland environments.

10 As Cliquet remarks, 'new legislation is one of the possible ways to advance ecological restoration in the Anthropocene'. See An Cliquet, 'Ecological Restoration as a Legal Duty in the Anthropocene' in Michelle Lim (ed), *Charting Environmental Law Futures in the Anthropocene* (Springer, 2019) 59. Another view is that broader governance changes may be required, for example to corporations law and taxation law. See Benjamin J Richardson and Ted Lefroy, 'Restoration Dialogues: Improving the Governance of Ecological Restoration' (2016) 24(5) *Restoration Ecology* 668.

11 Michelle Voyer et al, *The Blue Economy in Australia: Conceptualising the Blue Economy, Its Relationship with Maritime Security and Its Role in Australian Oceans Governance* (Royal Australian Navy, 2017) <http://www.navy.gov.au/media-room/publications/sea-power-series-blue-economy-australia>.

climate change.[12] Indeed, as a recent interim report on Australia's national environmental law has found:

> There is an opportunity to provide the policy settings to better leverage private interest in investing in the environment as well as drive down the cost of restoration.[13]

Exploring whether environmental law can be 'prohibitive' as well as 'facilitative' seems today to be an urgent task.[14] Since colonisation, the Australian landscape has been highly modified by land uses such as agriculture, infrastructure and mining, and there are few, if any, 'untouched areas' left across the nation.[15] Current legal frameworks for the conservation of biodiversity based solely on regulating the impacts of development do not appear to be working effectively.[16] For this and a variety of other reasons, commentators have labelled Australia's environmental laws as 'broken', suggesting that a significant overhaul is required,[17] including an improved focus on restoration.[18]

At the international level, the degradation of the environment has been widely acknowledged with the United Nations ('UN') declaring 2021–2030 the decade of ecosystem restoration.[19] At the same time, the UN has highlighted the urgent need to protect the world's marine and coastal environments.[20] At the local level, Queensland has also recognised the importance of restoration, including for coastal wetlands, through the establishment of a $500 million Land Restoration Fund ('LRF').[21] The LRF aligns with the carbon-reduction objectives of the Commonwealth Government's Emissions Reduction Fund ('ERF'), and is further

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12 Kerrylee Rogers et al, 'The State of Legislation and Protecting Australia's Mangrove and Salt Marsh and Their Ecosystem Services' (2016) 72 *Marine Policy* 139.

13 Graeme Samuel, *Independent Review of the EPBC Act — Interim Report* (Department of Agriculture, Water and the Environment, 2020) 90 <https://epbcactreview.environment.gov.au/resources/interim-report>.

14 See similar arguments we have developed in the case of protecting shorebird habitat at Moreton Bay: Evan Hamman, Revel Pointon and Jemma Purandare, 'Protecting Coastal Wetland Habitat for Migratory Shorebirds: Is Australian Law Doing Enough?' (2020) 37(4) *Environmental and Planning Law Journal* 477.

15 Australia is one of only a few places said to have true 'wilderness' remaining, namely, the desert. See James EM Watson et al, 'Protect the Last of the Wild' (2018) 563(7729) *Nature* 27.

16 Samuel (n 13).

17 Stephanie Dalzell, 'Auditor-General's Review of EPBC Act Finds Severe Deficiencies in Environment Department's processes', *ABC News* (online, 25 June 2020) <https://www.abc.net.au/news/2020-06-25/auditor-general-severe-deficiencies-environmental-protection/12393780#:~:text=The%20Australian%20Conservation%20Foundation's%20James,%22extinction%20and%20climate%20crises%22>.

18 See Samuel (n 13).

19 Nathan Waltham et al, 'UN Decade on Ecosystem Restoration 2021–2030—What Chance for Success in Restoring Coastal Ecosystems?' (2020) 7 *Frontiers in Marine Science* 71.

20 UNESCO, *United Nations UN Decade for Ocean Sciences (2021–2030)* (Web Page) <https://en.unesco.org/ocean-decade>.

21 Queensland Government, *Land Restoration Fund* (Web Page) <https://www.qld.gov.au/environment/climate/climate-change/land-restoration-fund>.

supported by the $1 billion National Landcare program. These initiatives, individually and combined, represent an important juncture at which to pause and consider the policy underpinnings of coastal wetland restoration. A critical component of that, we suggest, is the role of law in supporting and bringing about positive change.[22]

As other scholars have noted, it seems reasonable to distinguish between those projects that seek to build upon (or take away from) wetland environments (ie traditional forms of 'development'), and those that seek to give back or to 'restore' ecological values.[23] From this position, two important questions arise:

1. By focusing primarily on regulating the impacts of 'development', are Queensland laws hindering restoration activities for coastal wetlands?
2. What role could law play in facilitating and/or supporting restoration of coastal wetland environments in Queensland (and other degraded environments for that matter)?

While we do not seek to definitively answer those questions in this article, we suggest that they are nevertheless pertinent questions for Queensland policy-makers to grapple with. The role of law in promoting and supporting ecological restoration is a relatively understudied area.[24] Much of the literature on ecological restoration focuses, understandably, on the 'hard science' of methods and management, and how best to determine the indicators of restoration 'success'.[25]

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[22] Law is indeed not the only part of 'governance', but it is an important part to consider. On governance aspects of restoration, see Richardson and Lefroy (n 10), as well as Paul Martin, 'Ecological Restoration of Rural Landscapes: Stewardship, Governance, and Fairness' (2016) 24(5) *Restoration Ecology* 680.

[23] There are subtle but important differences in all interventions into the landscape. As Palmer and Ruhl write, in the United States context: 'many unintended consequences could be avoided if ecological restoration were clearly defined and distinguished from other forms of environmental intervention'. See Margaret A Palmer and JB Ruhl, 'Aligning Restoration Science and the Law to Sustain Ecological Infrastructure for the Future' (2015) 13(9) *Frontiers in Ecology and the Environment* 512.

[24] Exceptions include: Palmer and Ruhl (n 23); Anastasia Telesetsky, 'Ecoscapes: The Future of Place-Based Ecological Restoration Laws' (2013) 14 *Vermont Journal of Environmental Law* 493; Anastasia Telesetsky, An Cliquet and Afshin Akhtar-Khavari, *Ecological Restoration in International Environmental Law* (Routledge, 2017); K Suding et al, 'Committing to Restoration: Efforts Around the Globe Need Legal and Policy Clarification' (2015) 350(6235) *Science* 9; Benjamin J Richardson, 'The Emerging Age of Ecological Restoration Law' (2016) 25(3) *Review of European, Comparative & International Environmental Law* 277; and Afshin Akhtar-Khavari and Benjamin J Richardson (eds). *Ecological Restoration Law: Concepts and Case Studies* (Routledge, 2019).

[25] See, eg, Brett N Abbott et al, 'Bund Removal to Re-Establish Tidal Flow, Remove Aquatic Weeds and Restore Coastal Wetland Services — North Queensland, Australia' (2020) 15(1) *PLOS One* e0217531 <https://doi.org/10.1371/journal.pone.0217531>; Hanabeth Luke et al, 'Ecological Restoration of a Severely Degraded Coastal Acid Sulfate Soil: A Case Study of the East Trinity Wetland, Queensland' (2017) 18(2) *Ecological Management & Restoration* 103; Dominic McAfee et al 'The Value and Opportunity of Restoring Australia's Lost Rock Oyster Reefs' (2020) 28(2)

But, as Baker and Eckerberg have remarked, 'ecological restoration is best seen not only as a technical task, but as a social and political project [as well]'.[26] Accordingly, the aim of this article is to unpack some of the hurdles and opportunities that Queensland law presents in terms of coastal wetland restoration.

The article is structured in three substantive parts. In Part II, we provide an overview of Queensland's coastal wetlands (their extent, their threats, etc). We include in our definition mangrove forests, saltmarsh, seagrass, shellfish reefs, intertidal mudflats and coral reefs. In Part III, we discuss the current regulatory and non-regulatory approaches for restoration and conservation of coastal wetlands in Queensland; and, in Part IV, we examine whether a new legislative approach might be warranted, and explore how such an approach might sit alongside other planning mechanisms at the state level. In the end, our conclusions are tentative and we argue that further empirical work is required, particularly of a qualitative nature, to determine in what ways Queensland law inhibits or supports coastal wetland restoration efforts.

II Queensland's Coastal Wetlands: Ecology and Significance

Coastal wetlands provide an ecological and hydrodynamic transition between land-based freshwater systems and the ocean. They provide significant ecosystem services,[27] including coastal protection, fisheries, biodiversity and amenity, and are often utilised for primary industries and tourism. The ecological significance of wetlands has been recognised in international law through the establishment of the *Convention on Wetlands* ('*Ramsar Convention*'),[28] as well as the inclusion of many natural coastal ecosystems within World Heritage designations. They provide roosting, breeding and feeding grounds for many important migratory bird species (especially shorebirds), as well as nurseries for some marine mammal and fish species. The significance of wetlands in providing coastal protection has been recognised by the Atlas of Ocean Wealth, where wetlands and associated services have been valued not only in terms of

Restoration Ecology 304; and Nele Svenia Wendländer et al, 'Assessing Methods for Restoring Seagrass (*Zostera muelleri*) in Australia's Subtropical Waters' (2019) 71(8) *Marine & Freshwater Research* 996.

26 Susan Baker and Katarina Eckerberg, 'A Policy Analysis Perspective on Ecological Restoration' (2013) 18(2) *Ecology and Society* 17.

27 Willian J Mitsch, Blanca Bernal and Maria E Hernandez, 'Ecosystem Services of Wetlands' (2015) 11(1) *International Journal of Biodiversity Science, Ecosystem Services & Management* 1.

28 *Convention on Wetlands of International Importance especially as Waterfowl Habitat*, opened for signature 2 February 1971, 996 UNTS 246 (entered into force 21 December 1975) ('*Ramsar Convention*').

biodiversity and ecological importance, but also in terms of Gross Domestic Product (tourism and primary industry).[29] Furthermore, coastal protection in terms of insurance reduction has also seen some traction in recent years.[30] In recent studies,[31] the financial value of coastal wetlands with respect to storm surge and flood protection has been quantified and, in some cases, has become accepted as an insurance mitigation measure.[32] In more recent years, the value of coastal wetlands to absorb and store carbon, known as 'blue carbon', has become better understood and widely recognised as having significant potential in the management and mitigation of climate change.[33]

Queensland's coastal wetlands are vast and diverse, ranging from seagrass beds and rocky reefs in the south of the state, to the vast coral reefs and mangrove forests in the north.[34] These coastal wetlands play a significant role in Queensland's economy, particularly in tourism and commercial fisheries,[35] and are of significant cultural and social importance.[36] The most widely studied and best known of Queensland's coastal wetlands are those of the Great Barrier Reef ('GBR'). The GBR comprises the world's largest coral barrier reef, covering an area 348,000 square kilometres[37] stretching down the majority of the Queensland coast, from Cape York in the north, to Gladstone in the south. The GBR hosts significant biological diversity, including extensive coral reef ecosystems, seagrass and mangroves, and saltmarsh, and is recognised for its global value through World Heritage status. The catchment of the GBR comprises 35 river systems that drain approximately 424,000 square kilometres of coastal

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29 Emily Landis, Mark Spalding and Robert D Brumbaugh, *Atlas of Ocean Wealth* (The Nature Conservancy, 2016).

30 Siddharth Narayan et al, 'The Value of Coastal Wetlands for Flood Damage Reduction in the Northeastern USA' (2017) 7 *Scientific Reports* art 9463. For an Australian context, see Justine Bell and Catherine E Lovelock, 'Establishing a Legal Basis for the Insurance of Mangrove Forests for Their Role in Mitigating Coastal Erosion and Storm Surge' (2013) 33(2) *Wetlands* 279.

31 Curt D Storlazzi et al, *Rigorously Valuing the Role of US Coral Reefs in Coastal Hazard Risk Reduction: Open-File Report 2019–1027* (2019) 42 <https://doi.org/10.3133/ofr20191027>; and Pelayo Menéndez et al, 'The Global Flood Protection Benefits of Mangroves' (2020) 10 *Scientific Reports* art 4404.

32 Ouyang et al (n 1).

33 Linwood Pendleton et al, 'Estimating Global "Blue Carbon" Emissions from Conversion and Degradation of Vegetated Coastal Ecosystems' (2012) 7(9) *PloS ONE* e43542.

34 Queensland Government, Department of Environment and Science, *Queensland Wetland Program* (Web Page) <https://wetlandinfo.des.qld.gov.au/wetlands/about-us/qld-wetland-program.html>.

35 Sally Kirkpatrick, *The Economic Value of Natural and Built Coastal Assets — Part 1: Natural Coastal Assets* (NCCARF, 2011) <https://www.nccarf.edu.au/sites/www.nccarf.edu.au.settlements-infrastructure/files/file/ACCARNSI_Economic%20Value%20of%20Natural%20Coastal%20Assets.pdf>.

36 Ryan and Chen (n 3).

37 Commonwealth of Australia, *Reef 2050 Long-Term Sustainability Plan* (July 2018) <http://www.environment.gov.au/system/files/resources/35e55187-b76e-4aaf-a2fa-376a65c89810/files/reef-2050-long-term-sustainability-plan-2018.pdf>.

Queensland. The GBR provides significant coastal protection to Queensland's central and north coasts through the buffering of wave energy, in particular that caused by cyclones, which are most common along the northern and central areas of the GBR.

In addition to the GBR, Moreton Bay at the southern end of the Queensland coast provides numerous significant coastal wetlands, including seagrass beds that support marine mammal and fish species, such as the Dugong (*Dugong dugon*), which is listed as vulnerable under Queensland legislation[38] and are globally threatened.[39] Moreton Bay's coastal wetlands have been designated under the *Ramsar Convention* as being wetlands of international importance for migratory bird species and are a major stopover for 37 migratory shorebird species along the East Asian-Australasian Flyway. At the northern end of Moreton Bay, historical oyster reefs can be found in Pumicestone Passage, which, having been over-exploited in the early 1900s, are gradually being restored and regenerated, providing increasing habitat for fish species, as well as shellfish.[40]

Queensland's coastal wetlands are under increasing threat from development, land use change, water quality and soil degradation, over-exploitation and climate change.[41] Some of the key threats include:

1. Nutrient and sediment run-off from agricultural and other deforested areas within the catchment, which degrades the water quality, reducing light penetration and oxygen availability, and increases the potential for eutrophication;
2. Climate change, including warming ocean temperatures, ocean acidification, increased storm intensities, and rising sea levels;
3. Over-exploitation of natural resources, such as overfishing and depleting fish stocks; and
4. Land use change of coastal areas, such as cane farming, grazing and the conversion of wetlands to agriculture, and urbanisation (including changes to hydrological regimes in the coastal zone).[42]

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38 *Nature Conservation (Animals) Regulation 2020* (Qld) sch 1.

39 IUCN Red List of Threatened Species 'Dugong': (Web Page) <iucnredlist.org>.

40 Ben K Diggles, 'Annual Pattern of Settlement of Sydney Rock Oyster (*Saccostrea glomerata*) Spat in Pumicestone Passage, Moreton Bay' (2017) 122 *Proceedings of the Royal Society of Queensland* 17.

41 Carla Wegscheidl et al, *Queensland's Salt Marsh Habitats: Values, Threats and Opportunities to Restore Ecosystem Services* (TropWATER Report No 15/54, October 2015). See also Adame et al (n 7).

42 Examples include Adame et al (n 7) and Abbott et al (n 25).

The Queensland and Commonwealth Governments have introduced both regulatory and non-regulatory measures for the protection and 'rehabilitation'[43] of coastal wetlands. Some of the more important of these are discussed in the next part.

III Current Regulatory and Policy Initiatives

A *Planning and Protection for Coastal Wetlands*

In terms of the protection and management of coastal wetlands, the Queensland government has, it seems, done an extraordinary job of bringing together an improved management approach. Much has been achieved through the establishment of the Queensland Wetlands Program ('QWP') in 2003, which, among other things, lays claim to an impressive educational website, a mapping and classification methodology, an intertidal and subtidal ecosystem classification scheme, handbooks, case studies and many other online interactive tools for wetland management.[44] There are guidelines for preparing a Wetland Management Plan for grazing properties,[45] as well as a Wetland Projects Search Tool,[46] and Wetland Buffer Planning Guidelines.[47]

The work of the QWP was first evaluated in 2009 and found to be largely effective, the authors concluding:

> Other Australian jurisdictions lack such a comprehensive programme with similar levels of mapping, inventory, information and guidance to support effective wetlands management.[48]

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43 The language of rehabilitation appears to be most often used by the Queensland Government, at least in the context of wetlands. See Queensland Government, Department of Environment and Science, *Wetlands Management and Rehabilitation* (Web Page) <https://wetlandinfo.des.qld.gov.au/wetlands/management/rehabilitation/>. There is a key difference between restoration and rehabilitation, which we discuss below.

44 Queensland Government (n 34).

45 Queensland Government, Department of Environment and Science, *Guidelines and Template for Preparing a Wetland Management Plan for Primary Producers (Grazing, Dryland Cropping) in Queensland's Inland Catchments* (Guidelines, November 2012) <https://wetlandinfo.des.qld.gov.au/resources/static/pdf/resources/reports/guidelines-template-for-preparing-wetland-management-plan-21-1-13.pdf>.

46 Queensland Government, Department of Environment and Science, 'Wetlands Projects Search Tool' <https://wetlandinfo.des.qld.gov.au/wetlands/resources/tools/wetland-project/>.

47 Queensland Government, *Wetland Buffer Planning Guideline* (Guidelines, March 2011) <https://wetlandinfo.des.qld.gov.au/resources/static/pdf/resources/reports/buffer-guide/wetland-buffer-guideline-14-04-13.pdf>.

48 Halcrow Pacific Pty Ltd and Institute for Sustainable Futures (UTS), *Queensland Wetlands Programme Evaluation* (Final Report, 2009) viii <https://wetlandinfo.des.qld.gov.au/

At the time the QWP was, however, not without its weaknesses, with one of the main limitations being a lack of progress towards a 'regulatory regime' for improved wetland protection[49] — something that has since been at least partially rectified.[50]

For coastal wetlands of the GBR there is a comprehensive Management Strategy ('the GBR Strategy') focusing on a 'whole of system' approach, acknowledging the interaction between wetlands, coastal ecosystems and upstream land uses.[51] The GBR Strategy supports the Reef 2050 Water Quality Improvement Plan,[52] which aims to tackle water pollution caused by, among other things, sugarcane cultivation and cattle grazing in the GBR catchments. Importantly, the GBR Strategy highlights the key role of multiple actors in the protection, management and rehabilitation of wetlands on both public and private land, such as local and Commonwealth agencies, private freehold and leasehold landowners, traditional owners, natural resource management ('NRM') organisations and private citizens.[53] In more recent years, cumulative impacts have also become integrated into the GBR Strategy, and impact assessment in general, which is beginning to develop a broader view of impacts to wetlands, as well as how they should be strategically protected.[54] The GBR Strategy is spread across five key themes or goals including: (1) improvement of information about wetlands; (2) establishment and maintenance of wetland planning arrangements; (3) on-ground actions to rehabilitate and protect

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resources/static/pdf/resources/reports/final-qwp-evaluation-report-kmwhar-issue1-rev2-apr09.pdf>. The Queensland Wetlands Program ('QWP') was evaluated again by the Biodiversity Strategy Unit within the (then) Department of Environment and Heritage Protection in 2013, which recommended that areas for improvement were establishing and maintaining partnerships (eg with the Commonwealth Government) and increasing funding and resourcing. See Queensland Government, *Queensland Wetlands Program Phase 2* (Strategic Management Audit, May 2013) 4.

49 Ibid xiv.

50 Wetlands are protected through the regulation of impacts on development (see below), including strengthened GBR wetland protections from agricultural and other forms of pollution in ch 4A of the *Environmental Protection Act 1994* (Qld).

51 Queensland Government, *Wetlands in the Great Barrier Reef Management Strategy 2016–21* (Report, June 2016) <https://wetlandinfo.des.qld.gov.au/resources/static/pdf/management/policy/wetlands-gbr-strategy2016-21v13.pdf>.

52 Commonwealth Government and Queensland Government, *Reef 2050 Water Quality Improvement Plan 2017–2022* (2018) <https://www.reefplan.qld.gov.au/___data/assets/pdf_file/0017/46115/reef-2050-water-quality-improvement-plan-2017-22.pdf>.

53 Queensland Government (n 51) 9.

54 Queensland Government, 'Cumulative Impact Management Policy: Queensland's Implementation Plan' <https://www.qld.gov.au/___data/assets/pdf_file/0021/69024/cumulative-impact-mgment-policy-qld-implemntation-plan.pdf>. See the discussion of the development of this policy and its link to the Strategic Environmental Assessment for the GBR (2012–14) in Evan Hamman, Karen Vella and Umberto Baresi, 'Cumulative impact Assessment and Management for the Great Barrier Reef' in Jill Blakely and Daniel M Franks (eds), *Handbook of Cumulative Impact Assessment* (Edward Elgar, forthcoming).

wetlands; (4) education and capacity-building around wetlands; and (5) monitoring, evaluation and reporting.

The introduction of a landscape-scale approach to the wetlands of the GBR is a positive step. This is especially the case given the long history of wetland loss across the rest of Australia, and the fact that much of the loss was identified but not always quantified.[55] The focus on information and capacity-building in the GBR Strategy acknowledges a historically weak understanding of values and benefits of coastal wetlands to the State.[56] It seems clear that wetlands and their values have now been elevated by the QWP to be regarded as important components of the State's planning framework. The Queensland State Planning Policy ('SPP'), for instance, lists coastal wetlands as forming part of the 'state interest' of the coastal environment, which provides a requirement upon state and local government to conserve wetlands in the coastal management district.[57] The SPP also seeks to protect wetlands in multiple ways as 'matters of state environmental significance', for example where they are in high ecological value waters, in a wetland protection area, are mapped as a wetland of high ecological significance, or for vegetation within a specified area of a wetland as regulated under the *Vegetation Management Act 1999* (Qld).[58]

The importance of wetland 'values', in terms of planning and protection, is further highlighted by the *Environmental Protection Policy (Water and Wetland Biodiversity) Policy 2019* ('EPP'). The EPP sets out 'environmental values' for wetlands, with the purpose of the policy identified in s 5(2) as, among other things, to identify the values for wetlands that need to be enhanced or protected.[59] Thereafter, s 7 defines the environmental values for wetlands across Queensland, noting they are akin to the 'qualities of a wetland that support and maintain the biodiversity of the wetland'. This can include, for instance, its ecosystems, its natural state and biological integrity, its natural hydrological cycle, and the interaction between the wetlands with other ecosystems, including other wetlands. A 'values-based' approach to protecting and managing Queensland's wetlands is in line with international best practice, specifically the *Ramsar Convention*,[60] and is also consistent with other terrestrial conservation measures

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55 Max Finlayson, 'Loss and Degradation of Australian Wetlands' (Conference Paper, LAWASIA Conference, Environmental Law in the Asia-Pacific Region, 2000).

56 Ibid.

57 Queensland Government, *State Planning Policy* (Report, July 2017) 41 ('State Interest — Coastal Environment', (1)(b)) <https://dilgpprd.blob.core.windows.net/general/spp-july-2017.pdf>.

58 Ibid 71 (Glossary — 'Matters of State Environmental Significance (MSES)' — see items (e), (f) and (l)(vi)).

59 The reference to 'enhanced' (rather than protected) seems a positive step and may provide a basis on which to explore closer integration with legislative mechanisms for restoration.

60 See the discussion of the evolution of the Ramsar regime, including the interrelationship between ecosystem services, wetland values and wise use, in Max Finalyson and Nick C Davidson, 'The

being undertaken in Queensland, for example the values-based approach towards the management of national parks.[61]

In terms of further protection for Queensland wetlands,[62] reg 40 of the *Environmental Protection Regulation 2019* (Qld) provides a prohibition on releasing water or waste to wetlands for treatment if there is a possibility that the wetland may be destroyed or reduced in size, or if there may be another impact upon the 'biological integrity' of the wetland. Moreover, State code 9 of the State Development Assessment Provisions, against which development applications are assessed, provides guidance on the planning approach for the protection of wetlands in the catchments of the GBR.[63] While the guidelines are not a 'statutory document', they provide advice for 'high impact earthworks' development in a GBR wetland protection area under the *Planning Regulation 2017* (Qld).[64] Further detail on what 'high impact earthworks' activities include is provided for in the guidelines. Notably, agricultural activities such as cropping and grazing, constructing and maintaining fences, and establishing and maintaining firebreaks will not trigger planning assessment. The guidelines further provide that development must not be carried out in a wetland protection area, and if development is to be carried out outside of that area, then an adequate buffer must be provided.[65] The buffer is considered to be necessary in order to 'maintain the wetland's ecosystems functions and environmental value'.[66]

In addition to local councils, which also assess impacts on wetlands under their planning schemes, there are a variety of other legislative instruments that seek to regulate 'development or disturbance with coastal [wetland] habitat'.[67]

Ramsar Convention and Ecosystem-Based Approaches to the Wise Use and Sustainable Development Wetlands' (2011) 14(3) *Journal of International Wildlife Law and Policy* 176.

61 Queensland Government, Department of Environment and Science, *Values-Based Park Management Framework* (Web Page) <https://parks.des.qld.gov.au/management/plans-strategies/values-based-framework>.

62 For a broader review of law and policy relevant to mangrove and wetland protection in Australia, see Justine Bell-James, Tessa Boardman and Rose Foster, 'Can't See the (Mangrove) Forest for the Trees: Trends in the Legal and Policy Recognition of Mangrove and Coastal Wetland Ecosystem Services in Australia' (2020) 45 *Ecosystem Services* 101148; and with respect to Queensland, see Justine Bell-James, 'Integrating the Ecosystem Services Paradigm into Environmental Law: A Mechanism to Protect Mangrove Ecosystems?' (2019) 31(2) *Journal of Environmental Law* 291.

63 Queensland Government, *State Development Assessment Provisions* ('SDAP'), <https://dsdmipprd.blob.core.windows.net/general/sdap-version-2.5.pdf>. For coastal wetlands, more generally, there are other State codes in the SDAP that may be relevant for assessing development, including: State code 8 (Coastal development and tidal works); State code 11 (Removal, destruction or damage of marine plants); State code 12 (Development in a declared fish habitat area); State code 17 (Aquaculture); and State code 18 (Constructing or raising waterway barrier works in fish habitats).

64 SDAP, State code 9, ibid.

65 Ibid.

66 Ibid.

67 Nathan Waltham et al, 'Lost Floodplain Restoration and Efforts to Restore Connectivity, Habitat, and Water Quality Settings on the Great Barrier Reef' (2019) 6 *Frontiers in Marine Science* 71.

Neither the local nor state measures, however, provide a comprehensive statutory framing for the restoration of coastal wetlands. They are primarily concerned, it seems, with assessing and restricting inappropriate development impacting upon coastal wetland environments. For example, removal of native vegetation within or adjacent to a coastal wetland may be considered 'assessable development' due to the combined operation of the *Planning Act 2016* (Qld) and *Vegetation Management Act 1999* (Qld). Likewise, development within one of Queensland's three marine parks (which includes the intertidal area from the highest astronomical tide, seawards) requires approval under the *Marine Park Act 2004* (Qld).[68] Removal of marine plants (including mangroves) is similarly regulated under the *Fisheries Act 1994* (Qld),[69] and the *Nature Conservation Act 1992* (Qld) controls activities in protected areas (eg national parks), as well as interference with animal or plant species, which may include wetland areas.[70]

Dredging in coastal areas is also highly regulated, and approval (for dredging and/or quarrying of material) must be obtained pursuant to the *Coastal Protection and Management Act 1995* (Qld), the *Planning Act 2016* (Qld), and the *Environmental Protection Act 1994* (Qld).[71] Moreover, development in a Priority Port Development Area along the Queensland coastline is further restricted by the *Sustainable Ports Development Act 2015* (Qld) — a legislative control that was introduced in response to concerns from the World Heritage Committee about the rate of coastal development impacting the GBR.[72]

Finally, additional approvals at the Commonwealth level may be required for the protection of coastal wetlands, especially in the case of development impacting the 'outstanding universal value' of the GBR, or the 'ecological character' of a Ramsar wetland (such as Moreton Bay or Shoalwater/Corio Bays) under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) ('EPBC Act'). Impacts on migratory and marine species are also likely to trigger referral and assessment under the EPBC Act, for example impacts upon dugong, turtle or shorebird habitat. Dredging and dumping affecting coastal wetlands of

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68 See, eg, *Marine Park Act 2004* (Qld) s 15, regarding reclamation of tidal land.

69 See also the standards for restoration and rehabilitation of fisheries habitat under the SDAP, State code 11 (n 63).

70 *Nature Conservation Act 1992* (Qld) ss 62, 88 and 89.

71 Different procedures can apply if wetland development occurs within a Priority Development Area ('PDA') declared under the *Economic Development Act 2012* (Qld). See, eg, the declaration of a PDA for Toondah Harbour and the proposed removal of shorebird habitat discussed in Hamman et al (n 14). Development within State Development Areas ('SDAs') declared under the *State Development and Public Works Organisation Act 1971* (Qld) are also treated differently. Under both PDAs and SDAs, a 'development scheme' controls all development within the area.

72 See World Heritage Committee Decision 39 COM 7B.7 <https://whc.unesco.org/en/soc/3234>. See also *Sustainable Ports Development Act* (2015) s 2. Dumping of dredged material in the GBR Marine Park was also banned. See *Great Barrier Reef Marine Park Regulations 1983* (Cth) reg 88RA, and the analysis of the sea dumping litigation set out in Evan Hamman, 'Save the Reef! Civic Crowdfunding and Public Interest Environmental Litigation' (2015) 15(1) *QUT Law Review* 159.

the GBR must also comply with the *Great Barrier Reef Marine Park Act 1975* (Cth) and the *Environment Protection (Sea Dumping) Act 1981* (Cth).

All of the measures outlined above are aimed at the protection of coastal wetlands and integrate with the planning regime in Queensland primarily through the assessment and approvals process for proposed development. However, it is clear that legislative frameworks for restorative interventions for improving coastal wetland values are largely lacking, despite a desire of the Queensland government to rehabilitate wetland environments, especially for the GBR. The next section of this article discusses some of the policy mechanisms that relate to coastal wetland restoration in Queensland.

B *Restoration and Rehabilitation of Coastal Wetlands*

The phrase 'ecological restoration' is defined by the Society of Ecological Restoration ('SER') as the initiation or acceleration of ecosystem recovery following damage, degradation or destruction.[73] Where ecosystems are significantly degraded so that the damage is irreversible, or ambient conditions have changed to a point that the original, historical ecosystem biodiversity cannot be achieved, 'rehabilitation' can assist in repairing the ecosystem, but not restoring it. In the marine environment, and particularly relevant to wetlands, restoration can be challenging where species are dependent on specific sets of conditions that can change at a regional or global scale, and therefore cannot be restored easily (eg sea level rise impacting water depths where species are dependent on intertidal conditions, or increases in water temperatures that occur as a result of global warming).

The focus on repairing the state of wetlands (whether through restoration or rehabilitation), in a policy sense, is not necessarily a new phenomenon. The Queensland Wetlands Conservation and Management Implementation Plan 2004, for example, highlighted the need for both conservation and restoration of wetlands.[74] Shortly thereafter, in 2008, wetland 'rehabilitation' guidelines for the GBR were developed, but concerns over a lack of integration with other wetland programs meant that they were delayed.[75] The rehabilitation guidelines were initially intended to provide 'practical and specific guidance about how to rehabilitate different wetland types in the GBR'.[76] While those guidelines have

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73 Society for Ecological Restoration, 'What is Ecological Restoration?' (Web Page) <https://www.ser-rrc.org/what-is-ecological-restoration/>.

74 Halcrow Pacific (n 48) 139.

75 Ibid 69.

76 Ibid 52.

since been released,[77] there are currently no standard guidelines for the 'restoration of coastal wetlands' that are supported by the State Government. The Nature Conservancy, in conjunction with the SER, recently released *Restoration Guidelines for Shellfish Reefs*,[78] but these are not endorsed in any formal policy sense.

There are other policy and guidance measures provided by the Queensland Government that relate to the restoration of coastal wetlands, but these are mainly in the context of rehabilitating habitat following the impacts of development. For example, the *Planning Act 2016* (Qld) framework allows for restoration or rehabilitation of disturbed marine plants and fisheries habitat.[79] The objective is 'to encourage fish habitats and fisheries resource values to naturally regenerate'.[80] The Department of Agriculture and Fisheries has a 'self-assessable code' for proponents conducting 'low impact' rehabilitation works for fish habitat,[81] as well as guidelines for fish habitat restoration and rehabilitation.[82] There are also policies around transportation of marine plants for rehabilitation purposes,[83] but, again, these measures primarily relate to controlling the post-impact practices of development, rather than facilitating strategic restoration in its own right.

There are also other guidelines for primary producers (grazing and dryland cropping) that allow for wetland restoration to occur, but those are focused on inland river systems and are generally not transferable to the coastal zone.[84] The *Marine Parks Act 2004* (Qld) also provides for restoration of tidal and marine areas

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77 Queensland Government (n 41).

78 James Fitzsimons et al (eds), *Restoration Guidelines for Shellfish Reefs* (The Nature Conservancy, 2019).

79 SDAP, State code 11 (n 63).

80 Ibid.

81 Queensland Government, Department of Agriculture and Fisheries, *Code for Self-Assessable Development: Minor Impact Works in a Declared Fish Habitat Area or Involving the Removal, Destruction or Damage of Marine Plants* (Code No: MP06, January 2013) <https://www.daf.qld.gov.au/___data/assets/pdf_file/0010/73927/MP06-minor-new-works-June2012.pdf>.

82 Queensland Government, Department of Agriculture and Fisheries, *Restoration of Fish Habitats: Fisheries Guidelines for Marine Areas* (FHG 002) <https://www.daf.qld.gov.au/___data/assets/pdf_file/0018/62820/FHG002-Fish-Habitat-Guideline.pdf>. The guidelines provide 'methods for restoration or rehabilitation of disturbed or degraded marine areas for fisheries purposes, useful during the planning stages of restoration projects'. See Queensland Government, Department of Agriculture and Fisheries, *Habitat Guidelines* <https://www.daf.qld.gov.au/business-priorities/fisheries/habitats/policies-guidelines/habitat-guidelines>.

83 Queensland Government, Department of Fisheries and Agriculture, *Management and Protection of Marine Plants and Other Tidal Fish Habitats (FHMOP001)* <https://www.daf.qld.gov.au/___data/assets/pdf_file/0010/56359/FHMOP001-Fish-Hab-Manage.pdf>.

84 Queensland Government (n 45).

in certain instances of environmental damage,[85] and there are also options to declare a 'restricted area' for the purposes of restoration of a marine park.[86] Under the *Coastal Protection and Management Act 1995* (Qld) framework, there is a requirement to restore after certain tidal works are undertaken,[87] and dredged material from completed tidal works can also be used 'beneficially' in beach nourishment and for restoration or rehabilitation of wetlands.[88]

In the context of the GBR, recent amendments to the *Environmental Protection Act 1994* (Qld), under pt 5, allow for water quality 'offsets' (discussed further below) to be carried out in order to counterbalance damaging impacts upon the GBR catchment. This may be considered restoration, although it is more likely to be seen as rehabilitation, as pre-degradation impacts, such as ocean warming, cannot be reversed, and therefore pre-degradation conditions cannot be achieved. The legislation makes it clear that a GBR 'water quality offset' may include, for example, rehabilitating a degraded riverbank or constructing an artificial wetland on a property.[89] The offsets are underpinned by a Point Source Water Quality Offsets Policy.[90] That policy provides for diffuse source offsets to be made available, in which case developers can apply for an offset to achieve a 'net improvement' in water quality in the receiving environment, for example by constructing or remediating wetlands in the catchment.[91] Allied to this is the *Environmental Offsets Act 2014* (Qld) and the accompanying Environmental Offsets Policy in Queensland.[92] Despite claims by the Queensland Government that the legislation would simplify and increase efficiencies in the provision of offsets across the state,[93] concerns still exist with the scientific validity, accountability and transparency that is recognised in a review that is currently underway by the Queensland Government to seek to ameliorate its deficiencies.[94]

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85 *Marine Parks Act 2004* (Qld) ss 109, 114, 139. For a similar provision allowing the State to take action to restore or rehabilitate land, waters, marine waters or fish habitat, see the *Fisheries Act 1994* (Qld) s 124.

86 *Marine Parks Regulation 2017* (Qld) reg 121(1)(c)(ii).

87 *Coastal Protection and Management Regulation 2017* (Qld) sch 3 pt 3 Column 1 Performance Outcome 7.3. See also *Coastal Protection and Management Act 1995* (Qld) ss 59, 60.

88 SDAP, State code 8 (n 63).

89 *Environmental Protection Act 1994* (Qld) s 87(3).

90 Queensland Government, *Point Source Water Quality Offsets Policy 2019* <https://environment.des.qld.gov.au/___data/assets/pdf_file/0033/97845/point-source-wq-offsets-policy-2019.pdf >.

91 Ibid 5.

92 Queensland Government, *Queensland Environmental Offsets Policy* (Version 1.8, February 2020) <https://environment.des.qld.gov.au/___data/assets/pdf_file/0018/102834/offsets-policyv1-8.pdf>.

93 Explanatory Notes, Environmental Offsets Bill 2014 (Qld) 1–2 <https://www.legislation.qld.gov.au/view/pdf/bill.first.exp/bill-2014-1791>.

94 See Queensland Government, *A Review of Queensland's Environmental Offsets Framework: A Discussion Paper* (February 2019) <https://www.qld.gov.au/___data/assets/pdf_file/0018/94131/qld-enviro-offsets-framework-discuss-paper.pdf>.

Finally, the LRF also provides the opportunity for landholders to seek funds for restoration-based activities that can be connected to a carbon offsets project and can provide for co-benefits. Wetland restoration is a designated co-benefit under the LRF Co-Benefits Standard,[95] and is being considered for 'blue carbon' sequestration options as part of the Commonwealth' ERF initiatives.[96] The Queensland Government has currently committed $500 million for the LRF; however, only $100 million has been provided to date.

III Is a New Legislative Model Needed?

A *From Conservation to Restoration*

There are numerous challenges facing policy-makers and other stakeholders involved in coastal wetland restoration in Queensland. Contested or underdeveloped science is a part of the problem,[97] as is the need for funding, establishing and maintaining partnerships, and securing expertise to assess and conduct restoration projects.[98] Waltham et al have also written about the difficulties of conducting coastal wetland restoration 'at scale'.[99] While the law is not a panacea for all of these complex dilemmas, it is nevertheless important to consider the potential regulatory roadblocks and opportunities it can provide for restorative efforts.[100]

Broadly speaking, for environmental law to 'work', it must assist in avoiding, resolving or at least contributing to the resolution of environmental problems. It is important to note, however, that environmental law is broader than simply environmental impact regulation.[101] Trading schemes, offsets, freedom of

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95 Queensland Government, *Land Restoration Fund Co-Benefits Standard* (Version 1.2, 28 January 2020) 11 s 4.3.3 <https://www.qld.gov.au/___data/assets/pdf_file/0025/116548/lrf-co-benefits-standard-exposure.pdf>.

96 Commonwealth Government, Department of Agriculture, 'Wetlands Australia 31: Australian Government Initiatives for Blue Carbon' <https://www.environment.gov.au/water/wetlands/publications/wetlands-australia/national-wetlands-update-february-2019/govt-initiatives-blue-carbon>.

97 There have historically been 'critical gaps in the knowledge base' in Queensland. See Halcrow Pacific (n 48) 69.

98 Funding and collaborations were one of the issues to be focused on in 2013 for the QWP. See Queensland Government (n 48).

99 Waltham et al (n 67).

100 In the same vein, see the legal analysis presented in Justine Bell-James and Catherine E Lovelock, 'Legal Barriers and Enablers for Reintroducing Tides: An Australian Case Study in Reconverting Ponded Pasture for Climate Change Mitigation' (2019) 88 *Land Use Policy* 104192.

101 More broadly, on the difference between 'law' and 'regulation', see Julia Black, 'Critical Reflections on Regulation' (2002) 27 *Australian Journal of Legal Philosophy* 1.

information registries and stewardship programs are all non-regulatory mechanisms that can be supported, to varying extents, by statutory frameworks. Although each of these examples may have regulatory components (eg rules around abiding by conditions, etc), the overarching purpose is to establish the foundations for a non-regulatory behavioural mechanism.

The key question we arrive at, then, is what role can law play in facilitating or supporting restoration of coastal wetland environments (and other environments for that matter)? One option is for law to provide the framework for restoration to occur, for example by outlining statutory processes for obtaining tenure and/or land access to priority sites. As with Queensland resources legislation, the State could potentially institute a tender system for restoration projects over land.[102] The framework could also establish a process for risk assessment and management, as well as measures to protect the rights of First Nations Peoples and private landholders. An alternative approach, and one that has been adopted in Japan, is to establish a legislative framework that allows for the creation of multi-stakeholder committees responsible for identifying, sponsoring and ultimately overseeing restoration projects.[103]

The point is that legislative frameworks can be used for restoration and rehabilitation of degraded coastal wetlands, in addition to conservation and protection. The concepts of protection, restoration and mitigation are not mutually exclusive, and, indeed, a more sophisticated planning framework for Queensland's coastal areas may need to facilitate a better balance between both protection and restoration (ie *integrate* them through the SPP, regional plans, local planning schemes, etc). As with the conservation of protected areas (eg Ramsar sites), legislation can provide a supportive base for restorative action. The next section of the article explores why the current framework for assessing and approving restoration in Queensland may not be fit for purpose.

B *Restoration and Development Assessment*

Traditionally in Queensland, the restoration of coastal wetlands has been conducted relatively ad hoc, predominantly driven by research projects specific to universities, land and water impacts management by local governments, NRM groups or smaller-scale community group projects. The GBR Restoration and Adaptation Program ('RRAP')[104] is perhaps the first coordinated, strategic

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102 See, eg, the state tender process for exploration of coal seam gas (petroleum) tenures under the *Petroleum and Gas (Production) Act 2004* (Qld). The framework allocates access rights to the deposits, while environmental impacts on underground aquifers and the surrounding environment are assessed (and approved) under the *Environmental Protection Act 1994* (Qld).

103 For analysis of the Japanese restoration law, see Evan Hamman, 'Wetland Restoration in Japan: What's Law Got to Do with It?' (2019) 11 *New Voices in Japanese Studies* 47.

104 Reef Restoration and Adaptation Program (Web Page) <https://www.gbrrestoration.org/home>.

restoration plan for coastal wetlands; however, there is currently no similar coastal restoration strategy for the rest of Queensland or other coastal ecosystems. As such, restoration projects require assessment and approval in the same manner as any other development. This may be problematic, as we alluded to above; there is a fundamental difference in terms of environmental risk assessment and management when considering removing or mitigating impacts on values in the environment, as opposed to restoring, enhancing or rehabilitating them.

These differences can be explored through a hypothetical example, whereby a small area of mangroves on State (Crown) land is to be restored as part of a coastal adaptation program. In such a case, it may be possible that the following would be required:

- Works may involve placement and removal of material in the intertidal zone. This would trigger the need for a Development Approval — Prescribed Tidal Works and Development Approval — Works in a Coastal Management District.
- Works may involve introducing, creating or altering fish habitat, which would trigger certain approvals under the *Fisheries Act 1994* (Qld), such as marine plants permits.
- Works may take place inside a marine park (such as the Moreton Bay Marine Park) and would therefore require approval under the *Marine Parks Act 2004* (Qld).
- Works may include the removal of terrestrial or invasive (non-native) vegetation in order to restore mangrove habitat. If the vegetation is native or designated essential habitat, it would require approval under the *Nature Conservation Act 1992* (Qld) and the *Planning Act 2016* (Qld)–*Vegetation Management Act 1999* (Qld).
- Certain ecological communities, such as salt marsh, are classified as Matters of National Environmental Significance ('MNES'), as are migratory species such as shorebirds and seabirds. Any significant impacts to MNES would require referral and assessment under the EPBC Act.

While restoration is not to be considered a substitute for conservation, it is currently being categorised as development under the planning framework. It follows that the practicality of establishing a restoration project usually results in lengthy development and other state-triggered approvals that are designed to assess (and mitigate) impacts on values to the environment, as opposed to the creation or re-establishment of lost values. In addition to proponents, this may also present problems for assessment authorities, who may lack the expertise or

statutory guidelines to help assess the potential risks to the receiving environment from the restoration of ecosystems that were degraded or damaged some time ago.

An example of this in Queensland can often be found in shellfish reef restoration, where oyster beds were over-exploited in the late 19th to early 20th centuries, leaving few remnants of habitat. In some cases, where scientists have sought approvals to restore oyster reefs, questions have been raised by the assessing authority as to whether re-establishment constitutes restoration, or the introduction of a new species (where the habitat was entirely destroyed decades earlier), which in turn may present a biosecurity concern. Similar concerns have been expressed with regard to innovation restoration projects that relate to RRAP,[105] where regulatory assessment teams highlighted concerns regarding their ability to adequately assess the risk of new technologies and innovation to the existing environment and environmental values of the GBR without firm guidance of a technical expert advisory committee.[106]

These challenges often create a barrier to achieving the restoration of coastal wetlands at any meaningful scale, perhaps limiting projects to research trials, which can be approved under an alternative regulatory framework. This, in turn, links back to the question of whether restoration of marine and coastal ecosystems can truly be conducted at scale, where, in this case, the limitation becomes the assessment and approval framework, not the scientific or technical capability. That is not to suggest that restoration activities should not be comprehensively assessed in some way. There are likely to be many risks to the receiving environment even where those interventions are perceived as 'restorative'. Such concerns have also been raised by regulators in the context of the GBR, where there is the potential for the integrated nature of the RRAP to open doors to everyone with regard to submitting 'innovative technologies and solutions' for restoring the reef.[107] The careful assessment of these solutions is vital to ensure that restoration and conservation outcomes are both viable and safe, rather than simply based around economic gain or commercial advantage.

Whether a new legislative regime is pursued or not, conditions of approval in some form will still likely be required, that is, in addition to adequate monitoring

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105 Damien W Burrows et al, 'Symposium Report: GBR Restoration Symposium 2018' (2019) 20(2) *Ecological Management and Restoration* 175.

106 On the complex topic of regulating restorative actions in the GBR, see Pedro Fidelman et al, 'Regulatory Implications of Coral Reef Restoration and Adaptation under a Changing Climate' (2019) 100 *Environmental Science and Policy* 221.

107 See Burrows et al (n 105).

and enforcement in the event of non-compliance.[108] As with other aspects of environmental law and governance, transparency, public participation and the accountability of decision-makers should also underpin the process.[109] The rights of First Nations Peoples, including their cultural heritage in wetland landscapes, must also be appropriately balanced. This raises an additional question, which is not tackled in this article, namely, whether cultural heritage wetland values can be restored, and, if so, what the appropriate policy approach might be.[110]

C *Restoration and Environmental Offsets*

Offsets are mechanisms designed to counterbalance the impacts of development upon the environment. The Queensland Government states:

> An environmental offset compensates for unavoidable impacts on significant environmental manners (eg valuable species and ecosystems) on one site, by securing land at another site, and managing that land over a period of time, to replace those significant environmental matters which were lost. [111]

In this regard, they are implemented as a result of the loss of environmental values from planned development and as a mechanism to prevent complete loss.[112]

While there are ongoing debates as to the effectiveness of offsets with regard to conservation,[113] there is limited commentary on whether offsets can be utilised

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108 Conditions are already placed on restoration projects, including those connected with development. See, for example, the need for a 'post-works monitoring and maintenance program', which may be included as a condition in fish habitat restoration works: SDAP, State code 12 (n 63).

109 See also the discussion on restoration governance in Richardson and Lefroy (n 10).

110 The Queensland Government's *State Planning Policy* (n 57) briefly mentions the need to 'restore' cultural heritage within the planning framework (at 42). In terms of protection, a court may order 'restoration' if aboriginal cultural heritage is damaged, for example in the case of development. See *Aboriginal Cultural Heritage Act 2003* (Qld) s 27. Importantly, cultural heritage extends past artefacts and can include coastal wetland 'areas' (see s 8).

111 Queensland Government, *What Is an Environmental Offset and When Is It Required?* (Web Page) <www.qld.gov.au/environment/pollution/management/offsets/what-when#:~:text=Under%20the%20Environmental%20Offsets%20Act,on%20a%20prescribed%20environmental%20matter. >. See also the definition of 'an environmental offset' in the *Environmental Offsets Act 2014* (Qld) s 7: 'an environmental offset is an activity undertaken to counterbalance a significant residual impact of a prescribed activity on a prescribed environmental matter'.

112 For wetlands, offsets are available in Queensland for impacts upon a wetland protection area, wetlands of high ecological significance, or impacts on a wetland or watercourse in high ecological value waters. For the offset requirements, see Queensland Government, Department of Environment and Science, *Significant Residual Impact Guideline* (Report, December 2014) <https://environment.des.qld.gov.au/___data/assets/pdf_file/0017/90404/significant-residual-impact-guide.pdf>.

113 See Jelena May, Richard J Hobbs and Leonie E Valentine, 'Are Offsets Effective? An Evaluation of Recent Environmental Offsets in Western Australia' (2017) 206 *Biological Conservation* 247; Nigel

to facilitate restoration of other degraded habitats. In one sense, offsets may be considered 'restorative' — for example, where riparian restoration is implemented as a nutrient and sediment offset downstream — but they are also a mechanism tied to damaging developments for which the intervention into the landscape is typically linked (ie based on geographic locality or spatial scale), rather than restoration being prioritised where it is needed most. A recent review of Australian environmental law has suggested a clearer legislative link may need to be made between offsets and restoration.[114] However, on other occasions, arguments have been put that offsets may not be truly restorative, as their purpose is not to bring back 'self-sustaining ecological systems with the full suite of organisms and ecosystem processes and characteristics'.[115]

The existing offsets framework in Queensland does provide a method for a financial market to feed funding into restoration activities. For instance, the *Environmental Offsets Act 2014* (Qld) enables a proponent of a development to provide funds for an offset as a financial settlement offset paid to the government, rather than organising the offset themselves.[116] There is very little regulation, however, as to how this money must be spent, in that it must simply be used for delivery of environmental offsets to achieve conservation outcomes.[117] This lack of regulatory specificity around the use of the financial settlement offsets may jeopardise accountability for the provision of the offset for which it was paid. Given the extent to which it is used, with 97 per cent of offsets under Queensland's framework being delivered as financial settlement,[118] it is essential that this framework is effective at achieving the conservation outcomes for which that money is being paid. Under a more sophisticated, accountable and scientifically robust framework, there is potential scope that these funds be directed towards strategic restoration activities. However, significant reforms and well-considered strategic conservation prioritisation methods are needed for existing offsets frameworks at a state and national level to be capable of ensuring positive environmental outcomes under such an initiative.

There may be other issues as well. Some of the key reasons that landholders are not offering their land for either offset initiatives or programs, for example, such as the Queensland LRF, appear to be: the complexity in establishing a carbon

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Martin et al, 'Using Offsets to Mitigate Environmental Impacts of Major Projects: A Stakeholder Analysis' (2016) 179 *Journal of Environmental Management* 58; and Katherine Miller et al, 'The Development of the Australian Environmental Offsets Policy: From Theory to Practice' (2015) 42(4) *Environmental Conservation* 306.

114 Samuel (n 13).

115 See Palmer and Ruhl (n 23), citing Telesetsky (n 24).

116 *Environmental Offsets Act 2014* (Qld) pt 6 div 5 ('Financial settlement offsets').

117 Ibid s 84.

118 Queensland Government (n 94).

offset initiative; the high costs associated with legal and expert fees to establish the project; and the disempowerment that landholders may feel in the processes of establishing an initiative on their land that is led by carbon market professionals.[119] For coastal wetland restoration initiatives, reliant on similar funding mechanisms, these challenges may have to be addressed in order to ensure that the 'restorative-offset' initiatives have a better chance at long-term success.

In contrast, the New South Wales ('NSW') Biodiversity Offset Scheme appears to provide for in-perpetuity protection of offset sites and arguably greater rigour around the provision of the offset. A key issue with reliance on the Queensland or NSW offsets framework is that a developer must be seeking to offset a particular impact on a species to gain benefit from the framework. A live question for these offsets frameworks is the validity of providing for restoration activities on another species or bioregion that needs attention but is not the species or bioregion that is being impacted by a development and requiring offsetting. This may be a way to ensure there was funding provided for needed restoration activities, regardless of whether the species or bioregion is being impacted by an 'offsettable activity'. This scheme would require strategic prioritisation of restoration works and sacrifice of some species offsets for the betterment of more vulnerable species, which is likely to be a controversial and potentially dangerous initiative in its potential for misuse to the detriment of de-prioritised species.

All that said, it should be noted that offsets can be used to justify inappropriate environmental impacts where a species impact is simply not able to be offset, for example due to the vulnerability of the species or a lack of knowledge to provide for an appropriate offset. Furthermore, the definition of offsets relates back to 'unavoidable loss', and therefore questions can be raised as to whether the majority of developments that ultimately result in offsets are truly 'necessary', particularly in the geographical locations where loss of habitat has greater cumulative impact than in other areas. In these cases, proper implementation of the offsets hierarchy — 'avoid, mitigate, offset' — should stop at 'avoid', due to the inability to provide the offset for the species. Establishing a scheme that allows the offset to be provided regardless of the outcome for the particular species impacted, but rather for the greater good of the restoration strategy, is therefore an interesting option for funding restoration works, but should only be considered with the greatest care and input and consistent oversight from conservation science.

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[119] As Martin (n 22) has written, the uptake of restoration in rural and regional areas in Australia may be impacted by many factors, including 'land tenure norms and rules', as well as 'governance complexity' and the 'economic incapacity of some landholders'.

D *Restoration and Sustainable Development*

If legislative instruments can be utilised to promote restoration across a landscape (eg in coastal wetland locations), then it stands to reason that those approaches should be integrated, as far as possible, into existing planning and protection systems. Just as development is an intervention into the natural world, so too is restoration. One of the possible ways to integrate restoration into the current Queensland system is to include the assessment, land access and tenure processes under the *Planning Act 2016* (Qld) regime, for example by separating it from traditional forms of development.[120] Yet for this to occur, the overarching vision of Queensland's *Planning Act 2016* (Qld) framework (including the SPP and regional plans) may need to be revisited.

The current paradigm for planning in Queensland is, and has been for some time, ecologically sustainable development (or 'ecological sustainability').[121] Broadly speaking, this includes the integration of environmental protection, economic development and community wellbeing.[122] Restoration does exist as a passing component of this approach, but only insofar as it relates to the 'protection' of ecological processes and natural systems.[123] Moreover, in the mechanisms intended to 'advance the purposes of the [Planning] Act' (ie to achieve ecological sustainability), there is no mention of restoration (or rehabilitation for that matter), only references to minimising the adverse impacts of development and promoting the sustainable use of natural resources.[124] Accordingly, restoration is not comprehensively integrated into the objectives of the current Queensland planning regime. In particular, it is not considered an integral part of economic development and community wellbeing, and nor, for that matter, is there any significant reference to restoration or rehabilitation elsewhere in the Act, apart from as a 'restorative' measure following instances of non-compliance.[125]

This is problematic, as the link between restoration of the environment and sustainable development more broadly has been made increasingly clear. As a recent review of Australia's EPBC Act highlighted:

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120 The three categories of development under the Act are currently: (1) prohibited; (2) assessable; and (3) accepted. See *Planning Act 2016* (Qld) s 44.

121 Ibid s 3(1).

122 Ibid s 3(2).

123 Ibid s 3(a)(i).

124 Ibid s 5.

125 Ibid s 180. It is also worth noting that the Court has powers in the case of environmental pollution (or other forms of degradation) to order a defendant to 'restore' the environment, including for unauthorised damage to coastal wetland environments. See *Environmental Protection Act 1994* (Qld) ss 501–2.

> Given the state of decline of Australia's environment, restoration and adaptation are required to enable future development to be sustainable.[126]

Indeed, the link between restoration and all aspects of sustainability (not just environmental protection) is apparent from the academic literature,[127] not to mention global treaty regimes. Under the *Ramsar Convention*, for example, the need to restore wetlands is intimately connected to their wise use.[128] Ramsar's current Strategic Plan (2016–24) highlights this on numerous occasions, including placing the restoration of wetlands squarely within its future vision for a more sustainable world.[129] Furthermore, the restoration of wetlands is considered integral to the attainment of the United Nations' Sustainable Development Goals ('SDGs'), especially SDG15 (protecting and restoring terrestrial ecosystems),[130] as well as SDG6 (ensuring water and sanitation for all), and SDG14 (conserving and sustainably using the ocean and its marine resources).[131]

In the end, regardless of whether a new legislative regime for coastal wetland restoration is necessary, the concept of sustainability in Queensland may need to evolve to embrace ecological restoration more explicitly, that is, laying bare the connection between conservation, protection, development and restoration. Arguably, only then will a fully integrated vision of sustainability for the State start to emerge.

IV Conclusion

Coastal wetlands are an important part of the landscape. They provide vital ecosystem services and thus require both protection and restoration. While the Queensland Government has introduced several important initiatives of late, including an impressive GBR Wetlands Strategy and numerous educational and planning tools, it lacks a strategic vision for coastal wetland restoration that is comprehensively embedded within Queensland's planning framework. Accordingly, we have suggested that environmental law could be 'put to work' in Queensland, including a move away from viewing restoration in the same way as

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126 Samuel (n 13).

127 See, eg, Krystyna M Urbanska, Nigel R Webb and Peter J Edwards, *Restoration Ecology and Sustainable Development* (Cambridge University Press, 1997); and James Aronson et al, 'Ecological Restoration: A New Frontier for Nature Conservation and Economics' (2006) 14 (3–4) *Journal for Nature Conservation* 135.

128 Alexander and McInnes (n 5).

129 Ramsar Secretariat, *The Fourth Ramsar Strategic Plan 2016–2024* <https://www.ramsar.org/document/the-fourth-ramsar-strategic-plan-2016-2024> ('*Strategic Plan*'); Ramsar Secretariat, *An Introduction to the Convention on Wetlands* (Ramsar Handbook Series, 5th ed, 2016) Sub-Series II ('Wise Use of Wetlands').

130 United Nations, *Sustainable Development Goal 15: Life on Land* (Web Page) <www.un.org/sustainabledevelopment/biodiversity>.

131 Ramsar Secretariat, *Strategic Plan* (n 129) 6.

other forms of 'development'. To do this, one must conceive of 'the law' as broader than simply 'regulation', thus promoting a policy mindsight whereby environmental law can empower and facilitate change, rather than simply restricting it.

It would be a shame, of course, to saddle much-needed wetland restoration projects with an inappropriate administrative burden that is not relevant to the risks associated with the activities. That said, it still seems reasonable that there must be some form of environmental assessment and permitting process given the potential risks to the receiving environment, for example from introduced species and altered hydrological landscapes. Despite the urgency of the task, the restoration of coastal wetlands cannot be a 'free for all', but surely there are benefits from adopting a more strategic approach that provides certainty and clarity for restoration actors and their financiers. Offsets may or may not prove a viable component of this approach, and considerable care must be taken to ensure that 'compensating' for environmental loss does not become the primary driver towards restoration success.

In this article, we have considered whether a new legislative regime (or amendments to the existing regime) is required for coastal wetland restoration in Queensland. Further empirical work is now required, particularly of a qualitative nature, to examine in what ways the law prevents or supports coastal wetland restoration efforts across the State. Only then will we begin to understand the inefficiencies and anomalies in the current regime, and attempt to tackle the more pressing question posed by scientists of how coastal wetland restoration can occur at scale, and where it is needed most.[132]

[132] Waltham et al (n 67).