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## **Bringing the swamp in from the periphery: Australian wetlands as sites of climate resilience and political agency**

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Wetlands serve two increasingly critical functions in a climate-changed world, namely sequestering atmospheric carbon and moderating extremes in regional water cycles. These functions are particularly crucial in Australia, where climate change is likely to increase extreme weather events and impact water cycles. Yet despite multiscalar legal protections, Australia's total wetland cover is decreasing over time. We examine two contested wetland case studies and find that while legal mechanisms of protection exist in deliberative processes, good environmental outcomes are often undermined by the political mobility of competing commercial and industrial interests. Wetlands must be brought in from the periphery of social and political consciousness and placed at the heart of climate adaptation discourse and policy. Increasing the political mobility and agency of wetland protection has the capacity to simultaneously improve the environmental outcomes of deliberative processes and provide a legitimate pathway to greater regional climate resilience.

**Keywords:** wetlands; climate change; policy; contested development; Australia

### **1. Introduction**

From Shrek's swamp to the marshlands of King Lear, popular depictions of wetland environments tend to cast them as inherently undesirable places. As Aber, Pavri, and Aber (2012) highlight, wetlands tend to have less appeal as places of recreation or appreciation than other environment types, resulting in a general social ignorance of the criticality of these ecosystems. Author Barbara Hurd (2001, 8) observes that "[t]o love a swamp, however, is to love what is muted and marginal, what exists in the shadows, what shoulders its way out of mud and scurries along the damp edges of what is most commonly praised." This is reflected in a pervasive "wetlands as wastelands" misconception and devaluation in the popular consciousness in which wetlands exist to be "drained, filled, or exploited for industrial and economic uses" (Aber, Pavri, and Aber 2012, preface). While the aesthetic and functional appreciation of freshwater wetlands is slowly increasing amongst the general public (Dobbie 2013; Dobbie and Green 2013), a range of human activities continue to impact and impede wetland health, particularly long-wall mining, coal seam gas extraction and catchment urbanisation (Hensen and Mahony 2010; Kohlhagen, Fryirs, and Semple 2013), as well as regulated water cycle interference (Tennant-Wood 2004). In Australia, the "wetland as wasteland" line of reasoning is particularly pronounced when wetland health is forced into competition with industrial or commercial interests. As such, Australia is

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seeing a steady decline in total wetland cover, the specifics of which we explore in detail throughout this paper.

The problem is that ecologically, nothing could be further from the truth. Wetland habitats support plants and animals that are found nowhere else, and are amongst the most productive and biodiverse ecosystems in existence (Davidson 2014; Hu *et al.* 2017). Indeed, Costanza *et al.* (1997) argue that swamp ecosystems are the most critical biome to conserve for general environmental health. Freshwater wetlands play important roles in a range of environmental, social, cultural and economic services, such as moderating the regional impact of extreme hydrological conditions associated with flooding and drought, absorbing pollutants and improving regional water quality. Davidson *et al.* (2019) estimate the global monetary value of natural wetland ecosystem services at around US\$47 trillion per year. Wetlands are particularly critical in shaping regional climate resilience due to two specific capacities - their ability to store atmospheric carbon, and to moderate regional hydrological extremes. These capacities are explored below, and highlight the criticality of wetlands in Australia's climate future.

Wetlands cover little land area but are key carbon sinks, meaning that they have the capacity to sequester atmospheric carbon (Villa and Bernal 2018). Freshwater wetland areas store regional carbon at such significant rates that effective wetland protection may be the most critical climate change policy in Australia and globally (Pearce *et al.* 2018; Finlayson *et al.* 2018). Finlayson *et al.* (2017, 1812) identified a set of key principles to adapt and guide current wetland conservation policy and management strategies, in an effort to "provide wetland managers with guidance on responding to the increasingly dire condition of wetlands worldwide, which, in many cases, will be exacerbated by climate change." As Moomaw *et al.* (2018) and Finlayson *et al.* (2018) note it is increasingly recognised that wetland degradation will not only be exacerbated by climate change, but that it will also exacerbate climate change by releasing stored carbon into the environment. The role of wetlands in this vicious cycle as both trigger and victim of climate change impacts is an increasingly critical rationale for more active and effective policy approaches (Finlayson *et al.* 2018).

Wetland areas also act as 'sponges,' absorbing water during times of precipitation or terrestrial water flows, and releasing water during dry periods (Cowley, Fryirs, and Hose 2018). This water storage feature enables wetlands to regulate the flow of water to downstream catchments and to regulate water supply (Fryirs, Gough, and Hose 2014), and is particularly critical during times of flood (Acreman and Holden 2013) and drought (Fryirs, Gough, and Hose 2014). Damage to these areas impedes their functionality and can dramatically alter regional hydrological cycles and reduce hydrological resilience (Cowley, Fryirs, and Hose 2018). As the world's second most arid continent, Australian land use and health has long been shaped by regional water cycles. It is well established that climate change will impact on the frequency and severity of climate events such as drought, flooding, and storm events around the globe. As such, prioritising wetland health is a critical pathway for regional climate resilience in all areas of Australia.

The purpose of this paper is threefold. First, we examine the current state of global and Australian legal protection regimes, followed by a general overview of national wetland health in Australia as presented in state-specific self-reporting mechanisms, where available. We find that Australia's performance in wetland health outcomes is middling, and does not reflect their legal protections nor the criticality of this

ecosystem in Australia's climate future. Second, we examine two Australian case studies involving contested wetland developments in which ecosystem health is placed in competition with economic and political factors, specifically a longwall mining development in the Blue Mountains, New South Wales and a commercial coastal development in Morton Bay, Queensland. While these are far from representative or comprehensive examples, in doing so we identify socio-political factors inhibiting good environmental outcomes for the wetlands involved as a basis for considering Australia's middling wetland management record more broadly. Third, we argue that the current public perception and policy agency of Australian wetlands does not reflect their critical value in sequestering atmospheric carbon and moderating extremes in regional water cycles. We present the case for centring wetland protection and promotion within Australia's climate strategies to increase the social and political agency of these ecosystems, in order to improve environmental outcomes and to utilise the critical capacities of wetlands in climate adaptation and resilience planning.

## 2. Protection regimes for wetlands

Due to their ecological significance, wetlands are the subject of regulation across multiple governance scales, from global and transboundary to national and regional management regimes. Multiscalar legal frameworks have done much to improve the maintenance and conservation of wetland areas. The Ramsar Convention, known as the Convention on Wetlands of International Importance, especially as Waterfowl Habitat is a key wetland preservation regulatory instrument (hereafter referred to as Ramsar Convention). As an intergovernmental treaty with 170 parties, the convention provides a framework for national actions aiming to maintain and preserve the wise use of wetlands.<sup>1</sup> There are three pillars of the Convention, 1.) to ensure the "wise use" of wetlands, 2.) to identify and designate wetlands for inclusion on the Ramsar List and 3.) to facilitate cooperation for transboundary wetlands. As at April 2019 there are 2,341 Ramsar sites across the globe with a total surface area of 252,424,157 hectares (Ramsar Organisation n.d.). However, wetland conservation joins the slew of environments currently disadvantaged by their politically marginal, but ecologically central, role in global dynamics. Despite international conventions such as Ramsar and an increasing recognition of the ecological importance of wetlands, global wetland loss is accelerating. Legal protections do not always translate to beneficial environmental outcomes, with over 30% of the Ramsar designated sites deteriorating (Walpole and Davidson 2018). Moreover, 82% of the world's wetland areas are not covered by the Ramsar Convention, with Davidson (2014) suggesting that global wetland conversion and loss is accelerating.

This trajectory of wetland loss is a critical aspect of the current and future realities of climate change. Effective climate action must result in either a direct reduction in atmospheric carbon or an increase in carbon-absorbing and -storing mechanisms, a function that wetlands naturally fulfil. Currently, applied climate policy is being shaped by a global focus on direct greenhouse gas (GHG) emission reductions and global accounting frameworks (Hare *et al.* 2010; Bataille *et al.* 2016), as well as green technology innovation (Fried 2018). On the other hand, the conservation of carbon sinks receives far less political attention. Here (as indeed with carbon reduction initiatives) the age old spectre of competing interests continues to shape land use outcomes, with good ecosystem conservation outcomes often compromised by the political

juggernaut of economic development. This is particularly true for contested wetland developments. Regina *et al.*'s (2016) analysis of peatland management policies neatly conveys the political-ecological stalemate at the heart of wetland management. They examine four case studies with policy attention and pressure on peat conservation as a GHG mitigation strategy and identify a number of barriers to good environmental outcome, most notably wetland-centric climate policy that exists but lacks agency within the wider political and regulatory framework that determines land use.

In recent years, there has been a rapid increase in the scientific research and policy relevance around “blue carbon,” the carbon stored in coastal wetland areas – as represented by mangroves, tidal marshes and seagrass. The climate mitigation benefits of blue carbon became influential around 2009, spurring more rapid action in that area of conservation and adding to discourse and action on green carbon (forests) and black carbon (atmospheric particulates) as loci of adaptive capacity. \$100 million is currently being spent on blue carbon research and conservation annually (Windham-Myers, Crooks, and Troxler 2018), particularly via an oceanic version of the Reduction in Emissions through Deforestation and Degradation (REDD+) system, a United Nations initiative developed to provide financial compensation for forest conservation within global south communities. This boost in the profile of coastal wetlands has been achieved in part due to the Blue Carbon Initiative (BCI), an interdisciplinary network that works to accelerate blue carbon science into policy initiatives. The Blue Carbon Initiative provides a useful example for integrated wetland advocacy; however, there is a need for more widespread and inclusive wetland policy and public interest advocacy.

While climate adaptation is emerging as an increasingly salient global policy issue, it is critical that we evaluate not only the creation and application of policy, but critically, its efficacy. Work *et al.*'s (2018) examination of climate change mitigation and adaptation projects and policies in Cambodia demonstrates the danger in allowing a seemingly ‘green’ development agenda to become a legitimising factor for business as usual. As climate policies continue to increase within and across jurisdictions (Schmidt and Fleig 2018), critical evaluations of their success are crucial. In presenting our own contribution, we rally to Work *et al.*'s (2018, S58) call for an active and engaged academia to challenge systemic power disparities that enable political actors to “write laws and policies only to ignore them in practice.” We now turn to the Australian context of wetland protection. The following section provides a brief sketch of on-the-ground wetland health via state-specific self-reporting mechanisms.

### **2.1. Australian context**

Australia is signatory to the Ramsar Convention and has a plethora of state and federal environmental protection laws specifically addressing wetland conservation. Yet, wetland conservation is described as a “poor cousin” to marine and terrestrial conservation efforts by Kingsford, Basset, and Jackson (2016), and we can see this in Australian wetland conservation outcomes. On paper, Australia has a dedicated wetland-protection policy approach. The more pressing question is, in practice, how effective are these laws at preventing wetland degradation and loss? In the following paragraphs, we provide a glimpse, through some examples from self-reporting evaluations, of the state of wetland protection throughout the country.

Ecological mechanisms of wetland loss and degradation are relatively well known; however non-ecological threats have formed a critical historical blindspot in Australian

wetland management (Finlayson and Rea 1999; Finlayson 2000). In 1998, 24 years after Australia became a signatory to the Ramsar Convention, the Federal Department of the Environment issued a report entitled “Reasons for the continuing loss and degradation of Australian wetlands”, which noted the ongoing loss and degradation of Australian wetland environments and identified economic development, bureaucratic hurdles, poor information availability and access, and poor general awareness of wetland values and benefits to be the driving factors of systemic wetland degradation (Australian Government, Department of the Environment 1998). Since then, many states have developed site-specific or state-wide wetland evaluation and reporting requirements; however several indicate that Australia’s conservation performance remains middling at best. In one of the most iconic regions of the world, the Great Barrier Reef Wetlands form a significant part of the Reef Water Quality Protection Plan 2013 (RWQPP), a combined initiative by the Federal and Queensland Governments. The RWQPP calls for wetland management that will result in no net loss in extent, and an improvement in the ecological processes and environmental values, of natural wetlands. “The Great Barrier Reef Report Card 2016—Wetland condition results” provides baseline data for floodplain wetlands in the Reef catchments, and states that these wetlands are in “moderate condition and are under moderate exposure to pressures” (second paragraph).

South Australia’s state-wide wetland evaluation mechanism, the “South Australian Environmental Trend and Condition Report Card 2018”, defines successful management as wetland management as ecosystems “in a state that meets all environmental, economic and social expectations,” in which “desirable function can be expected for all processes/services expected of this resource, now and into the future, even during times of stress (e.g. prolonged drought),” (Government of South Australia 2018b, 5). This report demonstrated that while the aerial extent of South Australian wetlands is stable overall, an estimated 888,400 hectares have been lost from three high-rainfall regions, loss attributed to less rainfall and intensified anthropogenic land and water use (Government of South Australia 2018a). The report finds that, compared with worldwide changes since 1990, the state-wide change in cover of wetlands is classified as “fair,” here meaning that the wetlands cannot meet some environmental, economic and social expectations, and cannot achieve desirable function now and into the future, particularly during times of stress.

Tasmania’s state-wide wetland reporting guidelines state that the state’s wetlands should be managed for a pristine or near pristine condition. The report entitled “Assessing the Condition and Status of Tasmania’s Wetlands and Riparian Vegetation: Summary of Processes and Outcomes of a Component of the National Land and Water Audit (2005)” found that of the Directory of Important wetlands of Australia (DIWA) listed sites in Tasmania, 20% achieved only fair or degraded condition and another 20% were in unknown condition. A quarter of DIWA sites were in a declining condition, largely in the Flinders bioregion. Here, “Fair” conveys a site for which recovery requires significant management intervention, and “Degraded” conveys a site in which recovery is unlikely in the medium term. In Victoria, state-wide wetlands were evaluated in the Victorian Auditor General’s report Meeting Obligations to Protect Ramsar Wetlands (2016), using the Ramsar standards of wetland health. It found limited evidence that all Ramsar sites are effectively managed and protected from decline, and that “overall, the governance, coordination and oversight of the management of Ramsar sites must improve for Victoria to effectively meet its obligations under the Ramsar Convention” (Victorian Auditor-General’s Office 2016, 5).

In New South Wales the Environment Protection Agency evaluated wetland health in section 18 of the “State of the Environment 2015” report. They identified that wetland extent and condition were “moderate” (rather than good), while waterbird abundance and diversity was “poor” due to increasing impacts. These scores were due in part to a period of increased rain and flooding followed by a period of intense drying, during which many NSW inland wetland areas were beneficiaries of environmental water,<sup>2</sup> providing refuges for water-dependent species. Human disturbances from mining activity and land clearing within the floodplains of inland NSW were also identified as having a major impact on habitat quality and extent.

These reports reveal a tendency for Australian wetland management to produce middle-of-the-road outcomes, ranging from moderate and fair at best, to degraded and poor at worst. While far from comprehensive,<sup>3</sup> these reports point to a growing concern about wetland protection processes across the country. This is particularly worrying, as climate change is likely to impact water cycles in Australia by increasing extreme weather events such as storm (flooding) and heatwave (drying) events, as well as exacerbating long-term drought. Despite this, wetlands have received little attention in climate policy, and conversely, the implications of wetland degradation in releasing stored carbon and thus accelerating climate change is rarely directly acknowledged in wetland management approaches (Moomaw *et al.* 2018). While it is noted that the Ramsar Convention does not frame wetland management as a climate change strategy (Moomaw *et al.* 2018), Australia’s 2016 National Report to the 13th Conference of the Contracting Parties to the Ramsar Convention emphasised the relationship between wetland conservation and climate change. It specifies two priorities for future implementation of the Convention in Australia as being 1) managing wetlands in a changing climate, and 2) “exploring the role of wetlands in climate change mitigation (including Blue Carbon, freshwater wetlands), and how this may support the ongoing management, wise use and restoration of wetlands” (Ramsar National Report to COP13 2018, 7).

Considering the increasingly prominent role wetlands are likely to play in Australia’s environmental story, one purpose of this paper is to examine whether and how this is being reflected in the governance and environmental management of wetland areas. We are particularly interested in demonstrating, using two key case studies, how wetland protection can be derailed in the process of untangling complex legal-political regulatory interplays. In the following section, we explore two case studies in different states of Australia. The first is based on terrestrial wetlands in the Blue Mountains of New South Wales. The second is based on a coastal wetland in Queensland. Each case study demonstrates that while the letter of the law is met, the spirit of wetlands protection laws can be obscured. Reframing wetland values as a critical avenue for Australian climate adaptation policy is identified as a pathway to both managing climate impacts and to strengthening existing processes of environmental decision making. While in no way representative, these case studies do offer a critical insight as to why environmental decision making processes will continue to fail to substantively protect wetland ecosystems unless policy makers address issues of ecosystem political and social agency.

### 3. Case study: Springvale, New South Wales

This case study examines the approval process of the Springvale Extension Development Proposal (SEDP), a mine extension development plan submitted by coal mining company Centennial Coal to the NSW Department of Planning and

Environment (DPE) in early 2014. Centennial's Springvale Colliery is located 150kms north-west of Sydney, in the foothills of the Blue Mountain World Heritage Area. The SEDP outlined a 5,810 hectare extension to the existing operation area of the mine, allowing twenty additional longwalls to be mined. The SEDP received significant political and social support as a local job-creating, state economy supporting project while also facing significant environmental opposition, a dynamic explored more fully in Della Bosca and Gillespie (2018; 2019). The extension site overlapped with an area housing Temperate Highland Peat Swamps on Sandstone (THPSS). THPSS are an Endangered Ecological Community (EEC) listed under the national government's Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act 1999) in May 2005 and a Vulnerable Ecological Community under the state government's Threatened Species Conservation Act 1995 (NSW) (TSC Act). These communities are vulnerable to longwall coal mining, prompting concerns that this community would be damaged.

The primary legislation governing the assessment and development of mineral and energy resources, including the SEDP, is The State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007, referred to as the Mining SEPP. The SEDP was classed as a "State Significant Development" under the NSW State Environmental Planning Policy (State and Regional Development) 2011, and thus subject to a "triple bottom line" decision-making framework.<sup>4</sup> The environmental impact statement for the project was made publically available from 12 April until 26 May 2014, during which time it received over 200 submissions in opposition, based partly on concerns for swamp health. The primary decision maker for this case was the Planning Assessment Commission (PAC),<sup>5</sup> an independent body established to act for the Minister under Schedule 3 of the EP&A Act.

Opposition based on swamp health in the SEDP arose due to the threat of subsidence, a process occurring when pressure arising from the removal of the coal seam causes the sandstone plateau to fissure and crack. These changes in the sandstone that forms the swamp foundations can drastically alter the hydrological conditions of the swamp and can even dry them out completely, replacing drought tolerant swamp vegetation with eucalypt trees, and reducing the hydrological and bushfire resilience of the region (Lechner *et al.* 2012). A small part of the proposed extension area outlined in the SEDP was located directly beneath the EEC Newnes Plateau Hanging Swamp. The swamps on Newnes Plateau play a key hydrological role in the region by filtering water and moderating the flow of downstream watercourses, and provide the habitat for several uncommon and threatened flora and fauna species (Kohlhagen, Fryirs, and Semple 2013).<sup>6</sup> These ecosystems are so highly sensitive to anthropogenic disturbance that they now largely exist only in heavily protected, often wilderness areas (Fryirs *et al.* 2014). The threat of subsidence caused by longwall extraction is so significant that coal mining is identified as a Key Threatening Process for these communities under Schedule 3 of the TSC Act. There is no way to reverse subsidence damage, and the fluctuating nature of swamp vegetation means that only large-scale damage to the system is observable via field-based monitoring (Lechner *et al.* 2012).

This lack of observable change has implications for monitoring and documenting swamp damage. Springvale's development plan itself, as well as various environmental assessments, noted measures to minimise subsidence and swamp damage in the design area taken by the company, primarily based on monitoring swamp conditions. The state's deliberative assessments showed that their consultant, Mining Subsidence Engineering Consultants (MSCE), had found that the limited data on subsidence-

related swamp sensitivity made impacts difficult to predict (PAC 2015). This echoes a general consensus that the lack of baseline data and understanding regarding the ecological dynamics of these upland swamp communities impede the efficacy of monitoring programs (Baird and Burgin 2016; Fryirs *et al.* 2014; Kohlhagen, Fryirs, and Semple 2013). The Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) were also commissioned by the Federal Department of the Environment and the NSW Department of Planning and Environment to provide advice to the decision maker regarding the SEDP:

It is highly likely that impacts to THPSS and dependent threatened species will be severe and potentially irreparable. Further, there is no scientific literature currently available to demonstrate the effectiveness of potential mitigation or remediation measures. The only known strategy to minimise impacts to THPSS is to alter the mine layout such that swamps are not undermined by longwall panels ... (IESC 2014, 1)

Despite this, the SEDP received approval from the decision maker in this case with no mine layout alterations. In the approval recommendations for the SEDP, the decision maker advised the implementation of an Independent Monitoring Panel to avoid, minimise or adaptively manage swamp impacts, and a strengthened environmental planning approach to safeguard the undermined swamps. The conditions of the approval were that negligible impacts were caused by subsidence, and impacts did not exceed the limits set out in the SEDP Environmental Impact Statement. This decision lies at odds with the scientific consensus against monitoring due to unknown baseline swamp conditions, and also ignored advice from the IESC, which stated that the only way to safeguard swamps was to alter the development layout such that swamp communities were not undermined. The triple bottom line framework in the Mining SEPP legally requires that deliberative “consideration” of the environmental, social, and economic threats and benefits of a project is demonstrated. Despite a guaranteed inability to protect the THPSS from subsidence, by including these monitoring requirements as a consent condition, the decision maker was able to demonstrate “consideration,” despite scientific consensus that the outcome of this consideration was unlikely to deliver good environmental outcomes for the swamp communities. The use of the PAC mechanism is a substantial factor in planning decisions because of the restrictions it places on the right of appeal process. State planning decisions can generally be appealed through either a merit review or a judicial review in the Land and Environment Court (NSW) (LEC). In a merit review, a judge or commissioner evaluates the planning proposal anew and delivers a decision based on the evidence placed before them (Preston 2013). The use of the PAC restricts appeal rights to judicial review only, as long as a formal public hearing has been held. A judicial review has, by definition, an exclusive focus on process rather than the merit of environmental outcomes. In the absence of legal fault, the PAC decision cannot be challenged or appealed. With the procedural requirements of the decision-maker fulfilled, the THPSS issue became legally inert.

In comparison, the issues related to water quality impacts had much more legal influence and protection due to the more stringent legal mechanism of statutory prohibition, applied here due to Springvale’s position within the Sydney Drinking Water Catchment (SDWC). Springvale’s low elevation on Newnes Plateau means high quantities of saline water entering local waterways via mine discharge points. The SEDP’s approval despite the continued mine discharge prompted a series of legal challenges led by conservation group 4Nature. The only avenue of legal opposition to the decision was a judicial review on the basis that the PAC had incorrectly applied a statutory

prohibition,<sup>7</sup> which states that development consent within the SDWC boundary cannot be granted unless a neutral or beneficial effect on water quality, referred to as “NorBE,” is demonstrated as a result of the project. On 13 September 2016, Justice Pepper of the Land and Environment Court (NSW) dismissed 4Nature’s challenge.<sup>8</sup> This decision was later overturned in the NSW Court of Appeal.<sup>9</sup> A hearing was scheduled to take place in October 2017 to determine orders in light of the finding that the SEDP consent was unlawfully granted. However, the week before the hearing was due to take place the NSW Parliament passed a Bill which retrospectively validated the PAC’s approval of the mine.<sup>10</sup>

#### **4. Case study: Toondah Harbour, Queensland**

Australia has 66 Ramsar wetlands, one of which is in Moreton Bay, Queensland. Moreton Bay is a 113,314 hectare coastal wetland enclosed by vegetated barrier sand islands, and was listed as a Ramsar site of international significance in 1993 (Ramsar Information Sheet, n.d.). Our case study site, Toondah Harbour, forms part of the Moreton Bay Ramsar site. The Moreton Bay wetland is home to an extensive intertidal area of seagrass, mangrove and saltmarsh. It is estimated that over 50,000 migratory waterbirds can be seasonally located in and around Moreton Bay wetlands. Within these larger wetlands, Toondah Harbour is home to both lacustrine and palustrine coastal wetlands (Queensland Wetlands Program, n.d.).

The Toondah Harbour development site is located adjacent to the Brisbane suburb of Cleveland, approximately 30 kilometres east-south-east of Brisbane’s CBD in the Redland City Council local government area. The development project is a collaborative venture between the Queensland government, Redland City Council and Walker Corporation to build a residential and commercial precinct along the coastline (Walker Corporation 2019a). The development proposal for the site includes 3,600 apartments, a hotel and convention centre and a marina (Walker Corporation 2019a).

In 2013, the Queensland government declared the harbour site as a “Priority Development Area”<sup>11</sup> and committed the site as the regional gateway to Moreton Bay and its islands (Queensland Government, Department of State Development, Manufacturing, Infrastructure and Development 2019). In 2014, Walker Group Holdings were appointed as the preferred development partner with the Queensland government and Redland City Council. The Walker Corporation is an Australian-based private property development company with a portfolio of work that spans across Australian, the Pacific and Southeast Asia (Walker Corporation 2019b). The Toondah Development Project is a \$AUS1.3 billion mixed use development, described as covering over 67 hectares comprised of 17.5 hectares over land and 49.5 hectares over water (Walker Corporation 2019a).

Approximately 40 hectares of the proposed 73 hectare proposed development would likely impact the Moreton Bay Ramsar wetlands. As a protected Ramsar wetland the site is considered a “matter of national environmental significance” (MNES) pursuant to the “Environmental Protection and Biodiversity Conservation Act 1999 (Cth).” Section 16 of the the Act requires activities with a significant impact on a declared Ramsar wetland to apply for approval to the federal minister. Accordingly, the project was referred to the Minister for the Environment and Energy in May 2017 for a determination on the impact of the proposal on, inter alia, the ecological character of the Moreton Bay wetland, listed threatened species and ecological communities.

In documentation obtained through a Freedom of Information process, the Department of the Environment and Energy recommended that the Minister “decide that the proposed action is likely to have a significant impact on: \* the ecological character of the Moreton Bay Ramsar site (section 16 & 17B); \* listed threatened species, including marine turtles and the critically endangered Easter Curlew (sections 18 and 18A), and \* listed migratory species, including the dugong (sections 20 and 20A) (Australian Government, Department of the Environment and Energy 2018). By way of example, the intertidal mudflats are used by the critically endangered Eastern Curlew as feeding habitat. Critically, the concluding departmental advice to the then Minister was that the proposal was “clearly unacceptable” (Australian Government, Department of the Environment and Energy 2018, our emphasis).

Despite the departmental recommendation, the Minister for Environment and Energy (Liberal Party) allowed the proposal to proceed to an assessment process through an Environmental Impact Statement. Minister Frydenberg justified this position as an exercise in gathering further information through a full assessment which would enable mitigation or offset alternatives to be explored (Cannane and Trigger 2018). The Minister also pointed out that the Queensland state (Labor) government also supported this development project. It is worth noting that it was subsequently revealed that the Walker Corporation had been a recent major Liberal and Labor Party donor, with donations of \$2,25,000 to the federal Liberal party and \$23,000 to the Queensland ALP. Then Minister Frydenberg said of his decision-making process: “(I)t’s got nothing to do with the donor” (Cannane and Trigger 2018).

The Toondah Harbour development is clearly supported by both state and federal governments. This statement is reinforced with the revelation that the Queensland government asked the Federal government to consider re-zoning parts of the Moreton Bay Ramsar site to accommodate the Toondah Harbour development. In correspondence between the two governments, it was suggested that the Ramsar boundary compromised development opportunities (Cox 2019). At this point, however, neither the state government nor the federal government is pursuing an amendment to the wetland boundary.

In further developments in January 2019, the Federal government Senate Standing Committees on Environment and Communications held an on-site committee meeting which considered, *inter alia*, the fate of Toondah Harbour wetlands (Moore 2019; Australian Government Senate 2019). The Committee is inquiring into Australia’s faunal extinction crisis, with a final report due in November 2019. One key site visit undertaken by the Committee was to Toondah Harbour on 31 January 2019. In their Interim Report (dated 3 April 2019), the Committee said “(m)any submitters pointed to the assessment of the Toondah Harbour development as a significant example of the use of ministerial discretion resulting in detrimental outcomes for the environment” (Australian Government Senate 2019 paragraph 31.9, p.47).

At the time of writing, the fate of the Toondah Harbour wetland is unresolved. The processes outlined by the legislative framework (herein described as relating to the federal government’s commitment to Ramsar wetlands) are yet to be finalised. Despite this, Walker Corporation anticipates that construction, subject to conditions, will commence in 2020 and continue for a 15–20-year period (Walker Corporation 2019a, 2019b).

## **5. Discussion: the need to politically reframe wetland protection in Australia**

The above case studies reveal a tendency toward process-oriented, as opposed to outcome-oriented, wetland regulatory regimes in Australia. In both cases, wetland protection

legislation was satisfied by the deliberative processes, and yet the outcome of those deliberations may result in wetland degradation. In contrast, we see that the competing industrial interests in the first case study and commercial interests in the second are more consistently enabled throughout these deliberative processes. Additionally, we find that good environmental outcomes resulting from wetland regulation are impeded by political fluctuations within the policy landscape. In this section, we consider the procedural ramifications of both case studies, and use these insights to support a case for reframing and politicising wetland protection strategies in Australia by harnessing the growing social and political momentum for effective climate adaptation action.

The legislative features of the SEDP case demonstrate three aspects of the deliberative process that highlight the critical difference between satisfying legal requirements versus genuinely safeguarding ecosystem health into the future. First, environmental decision-making lies at odds with scientific consensus. The swamp monitoring and assessment conditions detailed in the approval conditions given by the PAC were known to be invalid in light of the advice of the IESC, who clearly stated that no monitoring or mitigation measures were useful in safeguarding the health of the state- and federally-protected THPSS. Here, we see a focus on deliberative process, namely that in order to fulfil the obligations of the triple bottom line framework outlined in the state planning legislation the decision-maker must demonstrate “consideration” of all economic, social and environmental issues associated with the case. As long as the decision maker demonstrates that they have considered the environmental implications their legal obligations are met, regardless of whether their decision supports good environmental outcomes. This is a prime example of the letter of the law being followed, while the spirit of the law – ecosystem protection – is failed. Second, the only legally active environmental protection available in this case was provided by a statutory prohibition regarding the untreated water discharge. Despite the multiscalar legal protections of the THPSS communities, the health of these swamps had little legal agency in the deliberative process. We see here the qualitative difference between the deliberative “consideration” required by the triple bottom line framework in the Mining SEPP and the statutory prohibition around NorBE in the state legislation for Sydney’s drinking water catchment. The “consideration” mechanism lacks the transparency required for it to be challenged through legal processes, impeding the substantive capacity of this mechanism to ensure good environmental outcomes. Our intention in emphasizing the disparate abilities of these two legal mechanisms to effectively protect the ecosystems to which they apply is to reflect on the social and political agency of different ecosystem services. Embedding a stronger legal mechanism for the protection of water quality within the catchment of a large city says “we as a community value this environmental service.” Healthy swamps play just as critical a role in regional hydrology, yet their legal mechanisms of protection suggest that they are valued less. Third, and perhaps most critically, the SEDP demonstrates the primacy of political agenda over the jurisdiction of the legal system. When the SEDP approval was found to be legally unlawful, a political decision was made to simply tailor the legislation so that an approval was guaranteed. This case-specific legislation change is a clear example of the partisan politics undermining critical environmental protections, rendering even the statutory prohibition mechanism powerless. The continuation of such corruption is enabled partly by the wider social and political ignorance and disinterest in the value and function of the ecosystems these laws are intended to protect.

In the case of the Toondah Harbour development within the Moreton Bay Ramsar site, we argue that legitimate protection processes are being sidelined in the course of

deciding upon development applications. Technical compliance with the environmental regulations is not in issue. Rather, in this instance, genuine efforts to preserve significant wetland places through formalised regulatory processes have the potential to become compromised when process rather than outcomes become the focus for decision-makers. Moreover, the process itself can be used to delay decision-making, possibly until a more favourable political climate emerges. This suggests a potential problem surrounding discretionary decision-making in environmental protection administration. The Toondah Harbour development has been officially touted for at least the past 6 years and the application shows no sign of disappearing. Instead, to this point in time, revisions, reviews and a full environmental impact statement keep the proposal alive. This situation continues despite clear indications that the impact on parts of the Moreton Bay Ramsar site will be adverse. We argue that this case study demonstrates that while environmental protection laws remain central in protecting significant wetlands, the spirit of protection can be obfuscated through the very same legal processes.

We are yet to see any resolution of the Toondah Harbour/Moreton Bay Ramsar conundrum but, thus far, this process demonstrates that a focus on sound wetlands protection outcomes can become lost in a process-oriented regulatory regime. These examples, while not conclusive in themselves, do give us clues as to why recent state-by-state wetland health reporting mechanisms reveal Australia's wetland conservation success to be middling at best despite extensive multiscalar regulations and legal protections. There is a conclusive body of literature demonstrating that ecologically, not only are wetlands sites of high diversity, they punch above their weight as sites of climate resilience (see for example Costanza *et al.* 1997; Moomaw *et al.* 2018). This ecological criticality is not adequately reflected in regulatory outcomes, nor in general political urgency. Indeed, our case studies demonstrate the ease with which wetland protection is compromised when faced with competing interests, particularly those industrial or commercial developments with greater political agency and financial influence. Today, the criticality of healthy wetland function is even more pressing due to Australia's changing climate, and the likely increase in extreme weather, and water, events that will accompany it. Perceived human utility, both political and financial, must no longer be the dominant yardstick by which wetland worth is evaluated. We have identified areas of weakness in the application of specific legal mechanisms that are capable of undermining good environmental outcomes in deliberative systems and processes. We suggest that a new regulatory strategy is required if the political and financial power of industrial and commercial developments is to be moderated to the extent that the natural values of wetland sites no longer struggle or fail to meaningfully compete in deliberative processes.

Wetlands and their governance need to be politically reframed, from the unknown and unknowable "wasteland" (Aber, Pavri, and Aber 2012) in popular and political consciousness, and into politically active agents of climate resilience. There are regular calls in Australia's wetland conservation literature for greater integration of science, policy and management to improve wetland health outcomes, particularly as an adaptive measure (see Brock 2003; Pittock and Finlayson 2013). And yet, we see that wetland governance in Australia is not achieving the level of success necessary to maintain and improve our wetland inheritance, and alone is a questionable vehicle for future action. Existing mechanisms of protection within regulatory regimes lack the political mobility and support to meaningfully contest industrial and commercial influence in deliberative processes and outcomes. Fragmented, site by site consideration of wetland values is steadily reducing Australia's total wetland coverage, even while the

letter of the law is upheld in each case. Wetland sites are particularly ill-suited to counter this influence through public support due to chronic under appreciation and devaluation, because while their ecological function is well established their political and social function tend to be underdeveloped (Aber, Pavri, and Aber 2012). The question of reframing wetlands is therefore one of engaging greater political and social relevance. By framing this discussion around wetland relevance in a climate-changed Australia, our intention is to harness the growing political and social momentum for climate action via adaptation policy in order to strengthen the case for improved wetland governance. If Australia's wetland coverage were reframed as a unified and politicised factor of climate resilience, we may be closer to levelling the playing field of political and social agency in case by case deliberative processes.

## 6. Conclusion

Protecting our critical ecosystems in a climate-changed world requires closely examining the blind spots of our existing regulatory systems, and crafting politically and socially active strategies for adaptation that account for, and overcome, systemically compromised environmental outcomes. While there is an increasingly critical rationale for more active and effective wetland protection policy (Finlayson *et al.* 2018), our case studies suggest that increasing the legislative protections of wetland environments in places like Australia will not effectively safeguard or increase wetland protection unless the spirit of environmental protection laws are politically supported. The responsibility to adapt proactively to the reality of climate change means that we can no longer ignore middling wetland protection outcomes as a deliberative blindspot. We suggest that prioritising wetland protection in adaptation strategies can strengthen the capacity of existing regulatory mechanisms to deliver good environmental outcomes by simultaneously increasing their political agency as critical agents of climate resilience. As Work *et al.* (2018, 12) note, “[d]evelopment’s optimism masks the vulnerability it creates,” and this holds true in our case studies. Here the issue of temporal scale is pertinent – we see the continuation of short-term political and economic benefit outweighing long term ecological and social vulnerability. Policy initiatives alone may not be strong enough to impede the juggernaut of short-term political and economic gains, but the success of collaborative, targeted initiatives such as the Blue Carbon Initiative provide a valuable example that increasing the political and social urgency of critical ecosystems, in combination with policy pressure, can yield significant results. As an international community, we must stop destroying environmental balances, but more, we must take clear-eyed action to substantively conserve the ecosystems we still have, especially those that act as critical buffers for the extreme conditions we are likely to face. Climate policy cannot be made and does not exist in a vacuum, but rather is part of complex and interrelated social, technical, political, legal and bureaucratic systems. While recognising that these mechanisms are flawed, we must take stock of what systems of protection we have, and then bolster them through renewed political agency and urgency.

## Notes

1. Wise use section.
2. Environmental water refers to managed return of water to wetlands and rivers, compensating for a recent history of natural flow cycle disruption as a result of dams and

- weirs. The NSW Office of Environment and Heritage (OEH) manages natural water distribution to key rivers and wetlands across the state (NSW OEH 2018).
3. Note, for example, that we have not disentangled public/private approaches in identifying these broad trends.
  4. Whereby the decision-making authority for any state significant mining development in NSW must attribute equal weight to factors of environmental, economic or social significance in assessment considerations.
  5. Since renamed Independent Planning Commission (IPAC).
  6. Including the Blue Mountains Water Skink (*Eulamprus leuranensis*), a species with a recovery plan under 269A of the EPBC Act, and the Giant Dragonfly (*Petalura gigangtea*), classified as endangered under the TSC.
  7. Clause 10 of Part 2 of the State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 (NSW).
  8. 4nature Incorporated v Centennial Springvale Pty Ltd [2016] NSWLEC 121.
  9. 4nature Incorporated v Centennial Springvale Pty Ltd [2017] NSWCA 191.
  10. “The Bill also altered the laws on protection of Sydney’s drinking water to allow projects like the Springvale mine to be assessed against current pollution levels (as opposed to the test set out by the Court of Appeal, which required such applications to be assessed against water quality that would occur should the project not be approved). The law in relation to completely new project applications has not changed and the test set out by the Court of Appeal for water quality will continue to apply to such applications.” (EDO NSW 2018: paragraph seven).

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