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## Reforming Environmental Law for Responsiveness to Change

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### I. Introduction

Law reform is about change. This contribution argues that such change needs to be about change itself. The earth's life support systems are experiencing profound and potentially devastating change.<sup>2</sup> Anthropogenic interference with the earth's atmosphere, nitrogen cycle, biodiversity, and water resources fundamentally challenge the adequacy of current environmental laws,<sup>3</sup> but the forces of change in environmental law are not limited to environmental or climatic conditions. They are also influenced by the ways humans react to change, through large-scale demographic shifts as well as through altering behaviour. Other significant changes either militate or facilitate environmental law reform. These include developments in our understanding of the environmental impacts of human activities and interactions and alterations to the impacts of particular activities when they are modified. Societal values relating to environmental and other priorities are also in a state of constant evolution. Public interest in issues such as climate change is cyclical, but there are also

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2 J Rockström et al, 'Planetary Boundaries: Exploring the Safe Operating Space for Humanity' (2009) 14(2) *Ecology and Society* 32.

3 Ibid.

slower, multi-decadal trends in public attitudes towards environmental protection. Lastly, technological innovation is occurring at an increasingly rapid rate, offering the potential for cheaper and improved monitoring of environmental performance and indicators and more nuanced and targeted regulatory measures.

The institutions of Western legal systems provide stability and predictability in the face of this pervasive and increasingly rapid change. The typical approach of environmental, planning, and more recently, climate law, is to endorse and protect existing rights.<sup>4</sup> This takes the form of existing use rights in planning law that permit the continuation of activities that are inconsistent with new zoning requirements. Similarly, the grandfathering of environmental licences into new regulatory regimes or provisions that limit the application of new requirements to activities commenced after a certain date also allows existing operations to continue on the same terms. They represent another common way of insulating past activities from the influence of change. Providing legal rights of compensation when existing land uses are constrained by new environmental or planning regulation make it hard for the law to innovate and adapt as new circumstances demand.<sup>5</sup>

These constraints are also reflected in the organisational culture and practices of agencies charged with administering environmental laws. In an increasingly corporatised and risk-averse public service, experimentation is not encouraged. Tight agency budgets are likely to adopt fiscally conservative strategies that entrench current practices and punish efforts at adaptive management that are perceived to have ‘failed’.<sup>6</sup>

Far from equipping us to manage the impacts or seize the opportunities of future change, then, our current approach to environmental law and its governance institutions entrench maladaptive practices and increase

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4 A Macintosh, A Foerster and J McDonald (2014), ‘Policy Design, Spatial Planning and Climate Change Adaptation: A Case Study from Australia’, *Journal of Environmental Planning and Management* 57, 1–22.

5 A Foerster, A Macintosh and J McDonald, ‘Trade-offs in Adaptation Planning: Protecting Public Interest Environmental Values’ (2015) 17 *Journal of Environmental Law* 1.

6 A Wiersema, ‘A Train without Tracks: Rethinking the Place of Law and Goals in Environmental Law and Natural Resources Law’ (2008) 38 *Environmental Law Journal* 1239, 1250–52.

our vulnerability.<sup>7</sup> In the context of unprecedented and sustained rates of environmental and social change, it would be overly simplistic to suggest that there is a single suite of environmental law reforms that can improve conditions into the future.<sup>8</sup> A new approach is needed that places system dynamism and ongoing change at the centre of law reform efforts.<sup>9</sup> This chapter therefore argues that Australian environmental law requires ongoing reform in order to manage change itself.

## II. A Resilience Framing for Environmental Law Reform

Resilience thinking provides a useful framing for a more change-oriented environmental law regime.<sup>10</sup> Rather than a theory, resilience thinking consists of a broad set of principles that are aimed at enhancing the capacity of social-ecological systems to withstand change without losing system function.<sup>11</sup> Resilience thinking is premised upon social and ecological systems being complex and interconnected and in a process of constant adaptation.<sup>12</sup> The value of resilience thinking lies in its recognition that systems are constantly changing, and that this change occurs through so-called adaptive cycles involving periods of growth or exploitation, conservation or consolidation, release or collapse, and reorganisation.

7 H Doremus, 'Adapting to Climate Change with Law that Bends without Breaking' (2010) 2 *San Diego Journal of Climate Energy Law* 45; R K Craig, 'Stationarity is Dead – Long Live Transformation: Five Principles for Climate Change Adaptation Law' (2010) 34 *Harvard Environmental Law Review* 9; J B Ruhl, 'Climate Change Adaptation and the Structural Transformation of Environmental Law' (2010) 40 *Environmental Law* 363.

8 Craig 2010, above n 7; Ruhl 2010, above n 7; C Arnold and L Gunderson, 'Adaptive Law and Resilience' (2013) 43 *Environmental Law Reporter* 10436–443; A Garmestani and C Allen, *Social-ecological Resilience and Law* (Columbia University Press, 2013); O Odom Green et al, 'Barriers and Bridges to the Integration of Social-Ecological Resilience and Law' (2015) 13:6 *Frontiers in Ecology and Environment* 332–37.

9 J Adler, 'Dynamic Environmentalism and Adaptive Management: Legal Obstacles and Opportunities' (2015) 11 *Journal of Law, Economics & Policy* 133.

10 R K Craig and M Benson, 'Replacing Sustainability' (2013) 46 *Akron Law Review* 841–80; Odom Green et al, above n 8, Arnold and Gunderson, above n 8, Garmestani and Allen, above n 8.

11 F Berkes, J Colding and C Folke (eds), *Navigating Social Ecological Systems: Building Resilience for Complexity and Change* (Cambridge University Press, 2003); C Folke, 'Resilience: The Emergence of a Perspective for Social-Ecological Systems' (2006) 16:3 *Global Environmental Change* 2253–267; D Nelson, N Adger and K Brown, 'Adaptation to Environmental Change: Contributions of a Resilience Framework' (2009) 32 *Annual Review of Environment & Resources* 395–419.

12 L Gunderson, C Allen and C S Holling (eds), *Foundations of Ecological Resilience* (Island Press, 2009).

These adaptive cycles occur within nested hierarchies of temporal, spatial and geopolitical subsystems, with each cycle influencing or influenced by those above and below it.<sup>13</sup>

By placing change and multi-scalar system dynamism at the centre of its approach, resilience thinking represents a radical departure from traditional resource management approaches.<sup>14</sup> It also fundamentally challenges legal arrangements that are aimed at providing certainty, predictability and stability. Resilience thinking calls for the promotion of diversity and redundancy to enable system components to withstand shocks; the management of slow variables and feedback; ongoing learning; public participation and polycentric governance models. The focus of the following discussion is on how best to make environmental law responsive to change and promote learning.

### III. Improving Responsiveness to Change

The precise modes by which environmental law might be reformed depend on the types of activities the law is intended to govern or manage. Activities occurring, or with impacts manifesting, over shorter timescales must account for different scenarios of future change than those with decisions that endure over decades or more. Governance arrangements for decision-making over the location of major public infrastructure, for example, must consider climate projections beyond 2100, whereas the development of a five or 10 year protected area management plan can afford to consider a narrower range of possible influences.<sup>15</sup>

The ways in which flexibility and responsiveness are built into new laws and legal instruments depend, not surprisingly, on their scope and purpose. The following section discusses the ways in which such reforms can be advanced in laws and regulations, management plans, operational decision-making, and environmental approvals and licensing.

13 L Gunderson and C S Holling (eds), *Panarchy: Understanding Transformations in Human and Natural Systems* (Island Press, 2002).

14 Craig and Benson, above n 10; B Cosens, L Gunderson and B Chaffin, 'The Adaptive Water Governance Project: Assessing Law, Resilience and Governance in Regional Socio-Ecological Water Systems Facing a Changing Climate' (2014) 51 *Idaho Law Review* 1.

15 M Stafford Smith et al, 'Rethinking Adaptation for a 4 Degree Centigrade World' (2011) 369 *Philosophical Transactions of the Royal Society* 196.

## A. Laws and regulations

Legislation itself should contain mechanisms by which to respond to change. These could take several forms.<sup>16</sup> First, legislation and regulations themselves need mechanisms for review. The simplest approach would be to insert sunset clauses that set a predetermined date on which the legislative regime must be reviewed. Time-bound provisions of this sort, however, can come either too soon or too late. They may trigger review before it is required, and run the risk of governments preferring to abandon a legislative regime rather than engage in costly review. Alternatively, they may set the review date too late to address changing conditions before damage is done. The preferable approach is to identify predefined thresholds of environmental or other change that will trigger either legislative review or the transition to a new predetermined regulatory phase. Event triggers are more nuanced and responsive, but also require that such triggers are capable of upfront identification and clear articulation. They may perform poorly in conditions of radical and volatile change and require political commitment to follow through on the shift when they are triggered, but nonetheless offer a preferable alternative to current static approaches.

The second way in which responsiveness to change might be built in to laws and regulations is the inclusion of adaptation to future changes in the statutory objectives of environmental laws.<sup>17</sup> A related mechanism is to require decision-makers to take the impacts of future environmental or climate change into account. For specific regimes, the objectives may be modified in more subject-specific ways. For example, in light of strong evidence that climate change will dramatically alter the range and habitat of many species, it may be necessary to modify our conservation objectives regarding *in situ* conservation or protection of species ‘in the wild’.<sup>18</sup>

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16 J McDonald and M Styles, ‘Legal Strategies for Adaptive Management under Climate Change’ (2014) 17 *Journal of Environmental Law* 1.

17 Ibid.

18 J McDonald et al, ‘Rethinking Legal Objectives for Climate-Adaptive Conservation’ (2016) *Ecology and Society* np.

## B. Management planning

With greater flexibility in legislative design, modification of statutory instruments should become easier. For example, the identification and designation of protected areas could become more agile, as existing areas become less valuable and sites currently outside the reserve network become more valuable. The management plans governing such areas also need to include adaptation and responsiveness to change as key objectives. The nascent application of dynamic ocean management techniques is worthy of further consideration. Currently used principally to manage by-catch and reduce conflict with fishers, dynamic ocean management uses new monitoring and detection technologies and short-term spatial closures to protect pelagic or migratory species as their location shifts.<sup>19</sup> The transferability of such approaches to a terrestrial context is yet to be fully explored. While there is a pressing need for resource, species and protected area management plans to adopt adaptive management, great care must be taken to ensure that adaptive management is not used to justify the lowering of standards or a random trial and error approach that could have irreversible impacts.<sup>20</sup>

## C. Environmental approvals and EIA

A critical aspect of environmental regulation in need of reform is the environmental approvals and associated environmental impact assessment (EIA) processes.<sup>21</sup> Recognition that both project plans and environmental conditions will change demands a fundamental shift away from the current front-end approach to environmental regulation. Existing EIA processes award approvals or licences with limited or no capacity to modify conditions should they prove to be inadequate. They assume that the environmental impact assessment process has adequately and accurately identified all potential impacts from a proposed development. This approach is theoretically flawed because it assumes that all future scenarios are capable of being anticipated and prepared for at the initial approval stage. In practice, the proponent-driven nature of EIA compromises its ability to provide an impartial and wide-ranging assessment of the risks.

19 A Hobday et al, 'Dynamic Ocean Management: Integrating Scientific and Technological Capacity with Law, Policy, and Management' (2014) 33 *Stanford Environmental Law Journal*, 122.

20 J B Ruhl, 'Regulation by Adaptive Management – Is It Possible?' (2005–6) 7 *Minnesota Journal of Law, Science, & Technology* 72.

21 Ruhl 2010, above n 7.

Changing the nature of development approvals so that they are either time-bound or limited by compliance with specified environmental performance measures would fundamentally alter this process.<sup>22</sup> An adaptive management approach to approvals and licensing would enable projects and developments to proceed subject to stages or on the basis that approval could be modified or withdrawn if conditions changed. If proponents knew that their approval was only as good as the project's subsequent environmental performance, they might be more willing to invest in high-quality assessment processes, and weigh more carefully the costs and benefits of investing in environmentally-risky projects. For example, the widespread practice of securing offset sites to compensate for unavoidable impacts on biodiversity offsetting may be far less attractive if there is the chance that additional sites will have to be acquired or restored in future should the initial offsets package fail to achieve a 'no net loss' target.

Like legislative triggers, adaptive management approaches of this kind require clear agreement about, and articulation of, overarching environmental standards/performance measures to be maintained.<sup>23</sup> This in turn requires more baseline information about environmental conditions and assumes we know or can know what standards must be met. It also requires monitoring and evaluation of both compliance with *and* effectiveness of requirements, and enforcement of the requirement that operations be modified or potentially discontinued when monitoring and evaluation shows that environmental standards cannot be maintained.

## IV. Risks, Constraints and Design Considerations

Reforming environmental laws so that managing for change is a key objective carries with it risks and constraints. The main risk associated with more adaptive approaches is that they may result in a gradual weakening of environmental standards over time, especially if adaptive approaches are not adequately funded. In some cases, agility may demand that choices be made between environmental values. In such cases, careful

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22 E Biber and J B Ruhl, 'The Permit Power Revisited: The Theory and Practice of Regulatory Permits in the Administrative State' (2014) 64 *Duke Law Journal* 133.

23 Macintosh, Foerster and McDonald (2013), above n 4.

and transparent prioritisation of ecological values, safeguards regarding the maintenance of particular standards or performance-based measures, and a clearly articulated goal of ‘trading up’ will be required.

While most of these risks can be overcome through appropriate design, there are also some circumstances in which adaptive approaches are simply inappropriate. There is little scope, for example, for approving projects that have the potential for irreversible impacts using an adaptive management approach. Where a major project is an ‘all-or-nothing’ proposition, there is little scope for responsiveness.<sup>24</sup> The need for laws to respond to change is not intended to supplant the precautionary principle. Rather, it should complement it, by providing options for enhancing the adaptiveness of law, either where circumstances mean that the option of not proceeding is simply unavailable, or where there is minimal risk of serious or irreversible harm.

Adaptive laws face other constraints. As has been noted, they are likely to be expensive to implement because of the requirements for monitoring and evaluation, and the processes of modification. These costs may be reduced by technological advances in monitoring, and better citizen and stakeholder engagement at key phases of environmental regulation and management. The benefits of better environmental management should also offset the increased costs, though these benefits – both economically and ecologically valuable – are seldom accounted for in the same way as the economic costs. Responsive approaches require long-term institutional commitments to monitoring and evaluation programs which extend beyond political cycles. Given that increasing rates of change will impose their own costs on the administration of environmental laws and force the development of long-term goals and implementation plans, this constraint is not necessarily onerous.

The most common objection to more responsive and agile law-making is that it will undermine investor confidence by removing some of the law’s predictability and eroding the value of development ‘rights’. A key premise of this chapter, however, is that environmental degradation will make many current activities untenable in the future, and that better accounting for that prospect now is likely to enhance the long-term stability of development activity. A related objection is that such measures

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24 J McDonald, ‘The Role of Law in Adapting to Climate Change’ (2011) 2(2) *WIREs: Climate Change* 283; McDonald and Styles, above n 16; Cosens, Gunderson and Chaffin, above n 14.

and decisions may be ruled invalid on grounds of uncertainty. These concerns can be allayed by ensuring that the environmental standards to be achieved are predetermined, with clearly defined parameters.

Built-in triggers and staged approaches to regulation may limit some aspects of public participation. There may not be the same opportunity for consultation and input to approval conditions or alterations to management plans where activities follow the built-in trigger and staged approach. It may also be necessary to limit judicial review of adaptive management decision-making to ensure that responsiveness is not lost by protracted litigation. Curtailing public participating runs counter to the principles of ecologically sustainable development and environmental good governance, as well as the key elements of Resilience Thinking. But this risk can be offset by facilitating meaningful public engagement at critical junctures.<sup>25</sup>

For the most part, these risks and constraints can be overcome with appropriate levels of funding and commitment. Indeed, they reduce significantly when compared to the risks of retaining the suite of inflexible, unresponsive laws, plans and processes that currently comprise the environmental law toolkit.

## V. Conclusions

The legal and governance framework for environmental protection and biodiversity conservation that we have established over decades is poorly equipped to respond to changing conditions. Designed to offer legal certainty and stability, most regulatory frameworks are premised on notions of system stasis. This contribution has identified a reform agenda for environmental law, comprising techniques and tools for building-in flexibility to environmental decisions and environmental law-making processes more generally. Adoption of such approaches would go far, but there will be limits to what law can achieve. To meet future challenges, law reform must be part of a broader shift towards polycentric and adaptive governance<sup>26</sup> that recognises system complexity and embraces an array of novel governance arrangements.

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25 R K Craig and J B Ruhl, 'Designing Administrative Law for Adaptive Management' (2014) 67 *Vanderbilt Law Review* 1.

26 C Folke et al, 'Adaptive Governance of Social-Ecological Systems' (2005) 30 *Annual Review Environment & Resources* 441; E Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge University Press, 1990).

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