1 Introducing Environmental Law

CHAPTER OUTLINE

This chapter introduces the approach and structure of the book, including four key dimensions of environmental law: its goals and principles, governance structures and actors, regulatory approaches and tools, and mechanisms for implementation and compliance. As an initial inquiry the chapter also canvasses:

- multidisciplinary understandings of 'the environment' that have shaped environmental law, including philosophical, scientific, economic, cultural and global constructs
- how law and institutions are structured and function in dealing with environmental issues
- how law—through its legislative, administrative and judicial processes—helps to 'frame' environmental issues and their management.

The final section of the chapter outlines general resources for learning more about, and conducting research, in this field.

Contents

1 Introduction

Environmental issues feature prominently in contemporary public debate, scientific research and regulatory activity. Media headlines regularly report stories on a diverse range of environmental problems and controversies, including renewable energy and novel energy storage technologies, coral bleaching in the Great Barrier Reef and other impacts of climate change: new threats to agriculture from invasive species, coal and coal seam gas mining; and the logging of old growth forests. The environmental field is thus one of considerable breadth and complexity. Contemporary environmental problems—like anthropogenic climate change—interact with many fields of social activity and engage regulation and governance structures at multiple scales.[1] Potentially, this environmental issue may affect spheres as diverse as water conservation, biodiversity, energy production, infrastructure, human rights, and international peace and security.[2] The broad scope and complexity of environmental concerns poses significant challenges for devising policy and regulatory frameworks to manage environmental problems.

In Australia, as in many other countries, environmental law plays a central role in responding to these challenges. This field of law is highly dynamic, reflecting the need for legal rules to keep pace with evolving concepts of environment and regulatory approaches for dealing with environmental problems. Environmental law and governance structures must also accommodate the interests and inputs of a wide range of actors involved in environmental issues, including governments, businesses, landholders, communities, scientists, international organisations and environmental groups. Environmental law has therefore seen extensive experimentation with a variety of regulatory tools, especially as it seeks to manage increasingly complex, integrated problems of environmental protection and natural resource conservation. At the same time, environmental law faces significant challenges in implementing and enforcing existing legal requirements. Many governments favour a deregulatory agenda that targets environmental laws that are seen to burden business, environmental protection agencies are frequently under-resourced, and scientific uncertainty may compromise effective environmental management. These challenges are all the more pressing since, as the Australian Government's latest *State of*

1 'Climate change law' has emerged as a prominent area of environmental study in its own right as evidenced by the publication of a number of books on climate change law and policy in the last decade: see Tim Bonyhady and Peter Christoff (eds), *Climate Law in Australia* (2007); David Hodgkinson and Renee Garner, *Global Climate Change: Australian Law and Policy* (2008); Wayne Gumley and Trevor Daya-Winterbottom (eds), *Climate Change Law: Comparative, Contractual & Regulatory Considerations* (2009); Nicola Durrant, *Legal Responses to Climate Change* (2010); Alexander Zahar et al, *Australian Climate Law in Global Context* (2013); Daniel Farber and Marjan Peeters (eds), *Climate Change Law* (vol 1, 2016). Yet many cogent arguments remain against viewing climate change law as a self-contained disciplinary and regulatory field. A sound understanding of environmental governance structures and legislative arrangements remains a necessary foundation for study, research and practice in all areas of climate change law.

2 Phillip Warren, 'Climate Change and International Peace and Security: Possible Roles for the UN Security Council in Addressing Climate Change', *Columbia University Academic Commons* (2015) http://dx.doi.org/10.7916/D8SJ1JTF.

the Environment report makes clear, in many areas of Australia environmental quality is poor or deteriorating, threatening efforts to ensure a sustainable future.[3]

2 Approach and structure of book

This book seeks to analyse the changes occurring in environmental law and the challenges of implementation, compliance, and effectiveness it faces. While the focus is on environmental law requirements in Australia, the book also takes account of international and comparative developments in the field, which increasingly affect domestic environmental law and policy. In order to understand and work with environmental law today, we believe that it needs to be situated against a contemporary backdrop encompassing much broader notions of environment, a greater range of environmental actors and regulatory approaches, and a growing permeability between traditional disciplinary areas and conventional national–international political boundaries.

At the same time, it is increasingly obvious that we need to broaden our concept of 'the law' when it comes to analysing environmental legal development. Environmental law combines what are traditionally thought of as legal mechanisms—for instance, penalties and court proceedings—with a liberal sprinkling of scientific notions, economic strategies and policy issues. Trying to analyse environmental law without reference to the wider context in which it is embedded risks an incomplete understanding of this branch of legal knowledge. A growing number of scholars recognise that the conventional boundaries between disciplinary areas of study are dissolving and reforming as interdisciplinary areas focused on broader topics like regulation or governance.[4] Moreover, its multidisciplinary foundations, coupled with the controversial nature of many environmental questions that engage a variety of different stakeholders and perspectives, make environmental law a 'hot' area of law. As Elizabeth Fisher notes, this frequently leads to contested framings of problems and a tendency for fragmented regulatory responses.[5]

For these reasons, the approach taken in this book is one that focuses on the conceptual foundations of environmental law. Rather than a treatment of discrete legal tools or mechanisms, or a discussion of laws within different environmental categories such as biodiversity conservation and pollution, we have instead organised this book around 'key dimensions' of environmental law; different parameters that provide a useful way to conceptualise the field and the dynamic shifts in its scope over time. While not neglecting important environmental legal issues conventionally treated in a book on 'environmental law' (for instance, federal versus state powers to regulate the environment or laws on environmental impact assessment (EIA)) this approach allows us to move beyond a simple examination of 'the law', in the sense of legislation and case law, to encompass

3 W J Jackson et al, *Australia: State of the Environment 2016*, overview, independent report to the Australian Government Minister for the Environment and Energy, Australian Government Department of the Environment and Energy, Canberra, vii.

4 See eg Christine Parker et al, *Regulating Law* (2004).

5 Elizabeth Fisher, 'Environmental Law as "Hot" Law' (2013) 25(3) *Journal of Environmental Law* (*JEL*) 347.

important scientific, policy and regulatory aspects that impact on the formulation and implementation of legal rules. A broader approach also recognises the level of integration and interconnectedness present in prevailing notions of the environment and the ways in which environmental law is applied and practised. Governance and regulatory systems in environmental law must increasingly respond to the challenge of integrated and complex environmental problems, which also often traverse national boundaries.

2.1 Key dimensions of environmental law

The book examines four key dimensions of environmental law and the transitions in legal, philosophical, scientific and policy thinking that underlie them. These dimensions relate to (1) the principles and overarching goals of environmental law; (2) its governance structures and actors; (3) the approaches and tools of environmental regulation; and (4) mechanisms for ensuring effective implementation and compliance.

The overarching **goals and principles** of environmental law provide the field's conceptual architecture and guiding objectives. Sustainable development—or, in Australia, ecologically sustainable development—and its underpinning principles have served this role, although their failure to arrest serious environmental decline has raised questions over whether environmental law requires alternative or supplementary principles for its future development.

The dimension of **governance and actors** is concerned with who is authorised to participate in the making, implementation and enforcement of environmental law, their relative rights or powers in this regard, and processes for holding decision makers accountable. Australia, in common with many other countries, has a federal system of governance with government authorities (at the federal and state levels) as the primary actors, albeit with increasing roles for communities, environmental groups and the private sector.

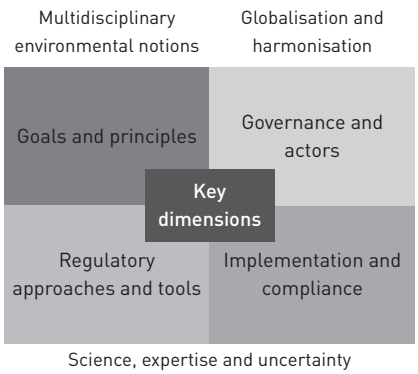
The dimension of environmental law concerned with **regulatory approaches and tools** focuses on the policy and legal models and mechanisms employed to address environmental problems, from those of the common law and private property regimes, to direct regulatory measures, market-based measures, voluntary schemes and government–community partnerships.

Finally, the dimension of **implementation and compliance** examines how environmental laws are given effect and the necessary contributors to such efforts (eg monitoring and data availability, resourcing and enforcement). This dimension also encompasses nascent debates about the effectiveness of environmental law, including whether it achieves its designated objectives, how this is monitored (if at all), and how better feedback mechanisms could be designed to improve the effectiveness of environmental legal interventions.

All four dimensions of environmental law sit within a broader dynamic context that includes: shifting multidisciplinary understandings of environment and environmental goals that shape legal notions; a greater recognition of environmental complexity and the need for more sophisticated processes for gathering scientific knowledge and

expertise to inform decision making; and progressive movements in the environmental area towards more globalised and harmonised responses to environmental problems (see Figure 1.1).

Figure 1.1 Key dimensions of environmental law



2.2 Examples, case studies and further resources

The book's discussion of the four key dimensions of environmental law is intended to provide readers with the necessary conceptual tools for achieving a holistic understanding of the structure of environmental law in an Australian and global context. However, in order to come to grips with how this structure is applied in dealing with particular environmental issues, the examination of conceptual foundations is interspersed with short, illustrative examples or longer, more in-depth 'case studies' of seminal judgments, pieces of legislation or policy developments. The case studies, in particular, are designed to provide readers, teachers and students with the essential tools to explore the conceptual material introduced in chapters in a practical setting in order to gain a deeper understanding of the application of environmental legal rules. Additional sources of material, useful for continuing study or research into a topic discussed in a chapter, are listed in a 'Further resources' section at the end of each chapter.

As the examples and case studies considered in the chapters illustrate, while there have been strong trends in environmental law over the course of its development that have favoured greater uptake of ecological concepts and goals, greater regulatory diversity, plural governance systems, globalisation, and more flexible and integrated approaches for ensuring implementation and compliance, there have also been competing tensions that may sometimes pull environmental law in another direction. For example, efforts to deal with greenhouse gas emissions as a global problem may be challenged by those who advocate local, community-based concerns about the impacts of climate change.[6] The embrace of 'beyond-compliance' environmental performance strategies by industry may only be facilitated by maintaining conventional 'command and control' regulatory

6 For example, Cathleen Fogel, 'The Local, the Global, and the Kyoto Protocol' in Sheila Jasanoff and Marybeth Long Martello (eds), *Earthly Politics: Local and Global in Environmental Governance* (2004) 103.

frameworks.[7] Institution of participatory structures in environmental decision making may not only facilitate community input but also raise the problem of the weight such views should be given where they conflict with expert opinion. Calls for interdisciplinary approaches in environmental research and policy development cannot, by themselves, build bridges between very different fields like science and law. In many areas, therefore, there exists a dynamic interaction between law and environmental management such that legal and policy structures impact upon, but are also shaped by, different environmental management problems.

2.3 Outline of chapters

Each of the four key dimensions of environmental law examined in this book is the subject of a separate chapter: Chapter 2 (principles of environmental law), Chapter 3 (environmental governance and actors), Chapter 4 (environmental regulation and tools) and Chapter 5 (implementation and compliance). Chapters 6 and 7 deal with the broader context for operation of the four key dimensions, examining: the role of science and expertise in environmental law and the management of uncertainty (Chapter 6); and the global dimensions of environmental law, including the relationship of domestic law to international environmental law (Chapter 7). The remainder of this chapter considers the foundational questions of what we mean by 'environment' and 'law', and how multidisciplinary understandings of both have contributed to an expanding scope for the field of environmental law.

Since the first edition of this book was published, environmental law in Australia and in many other Western democracies has come under sustained pressure on a number of fronts. These include efforts to repeal or 'streamline' many long-standing environmental law protections, restrict environmental litigation by public interest groups, and decrease funding for environmental regulatory agencies. Consequently in this edition, even as we continue to explore innovations that expand the reach of environmental law, we also recognise the increasing challenges the field faces, particularly in the area of ensuring effective implementation and compliance with environmental laws. In the final chapter, Chapter 8, we revisit these challenges and consider future directions for development and reform of environmental law.

3 Notions of 'environment'

For those studying and working in the field of environmental law, an important initial inquiry is the scope of what is encompassed by the notion of environment. Lawyers are fond of definitions, and environmental legislation and the decisions of judges contain many attempts to give a firm legal shape to environmental concepts. The way these definitions have changed over time is itself revealing, evidencing broader transformations in scientific understanding, philosophical approaches, economic models, awareness of

7 Neil Gunningham and Darren Sinclair, *Leaders and Laggards: Next-Generation Environmental Regulation* (2002) 39.

cultural diversity and global interconnectedness. A constant interplay between the law and other disciplines has done much to broaden understanding of the environment that is subject to different forms of legal regulation and management.

As a system of rules and procedures governing social conduct, law in a democratic country like Australia reflects, to a large extent, the values of the governed society.[8] This is certainly the case for environmental law; indeed, it might be said to be particularly so, given the foundation of the majority of Australian environmental law in legislation and other forms of regulation laid down by democratically elected governments. Over the course of the second half of the twentieth century, recognition of the importance of environmental protection became entrenched in Western societies such that environmentalism is now 'as much a state of being as a mode of conduct or a set of policies … [c]ertainly it can no longer be identified simply with the desire to protect ecosystems or conserve resources'.[9]

The social concerns environmental law embodies, in turn, reflect deeply rooted values, drawn from diverse sources such as religion, ethics, economics, science, politics, custom and culture. Over time, ideas about the environment in these various areas have changed, waxing and waning in their relative importance. As these changes have occurred, so too social values concerning environmental matters have also shifted, producing different notions of the nature of the environment itself and the importance of environmental protection. This evolution in notions of environment is dynamic, as demonstrated by current debates over how water should be perceived against a background of anthropogenic climate change in Australia (eg should water be regarded as a resource, an ecosystem service or a human right?). The following sections trace multidisciplinary notions or constructs of the environment and their implications for how we understand the subject matter of environmental law.

3.1 Philosophical constructs

Philosophies concerning the natural world, and the place of humans in it, have shaped the understanding of environment that underpins much of environmental law. The term 'environmental philosophy' (or environmental ethics) refers generally to beliefs about the character of the environment and the relationship of humankind to the environment and its constituent non-human elements. Even so, environmental philosophy is a highly disparate field that confounds any attempt to derive universally agreed ideas regarding the interrelationship of humanity and nature. Such ideas have evolved over time, strongly influenced by prevailing socio-cultural factors, such as religion, morality and aesthetic perceptions.[10] Indeed, the very term 'environment', as we use it today, only gained popular currency from the middle of the twentieth century. Nonetheless, similar concepts have an ancient lineage in Western societies, as well as in other cultures.

8 Richard Chisholm and Garth Nettheim, *Understanding Law: An Introduction to Australia's Legal System* (7th ed, 2012).

9 Timothy O'Riordan, *Environmentalism* (2nd ed, 1981) ix.

10 Sven Arntzen and Emily Brady (eds), *Humans in the Land: The Ethics and Aesthetics of the Cultural Landscape* (2008); Emily Brady, *Aesthetics of the Natural Environment* (2003).

A general trend that can be discerned is the oscillation between a holistic view of the environment and a view of the natural world that emphasises separate components and discrete processes. Prominent among the latter has been the belief in a distinct dichotomy of the human and nature.[11] Western culture typically has been characterised by anthropocentric (human-centred) thought that emphasises the distinctness of humankind from nature. These views have been influential in shaping relevant legal concepts and rules, including environmental and planning law.[12] The rise of environmentalism and the emergence of philosophies, such as deep ecology,[13] and ecofeminism[14] in the 1970s, and more recently wild law,[15] have challenged these dominant modes for representing and governing the natural world. In a similar way, environmental law itself presents a challenge to prevailing legal, academic and professional cultures that prioritise human value over non-human entities.

3.1.1 Organicism, anthropocentricism and nature/human dualisms

Philosophical approaches to the environment that stress the interconnection and linking of all parts are often referred to as 'organicism'. An organic view of nature imputes a seamless quality between all living forms whose origins lie in a single creative force, which is continually and dynamically renewed. While it is something of a generalisation, classical and medieval thought predominantly adopted an organic paradigm for conceiving nature. Ancient Greek philosophers, for example, believed that life on Earth could be depicted as a specialised local organisation of an all-pervading vitality and rationality.[16] Organicism was significant in Christian creation stories, and in medieval thought.

The Earth's life force was worshipped as an Earth goddess in many agrarian societies: the central cyclical element around which human activity revolved. It represented the interconnectedness of natural objects, often symbolised by a web or a circle of life.[17] In such societies, there was an emphasis upon acting with nature and bending to its rhythms. Concepts of a web of life have reappeared in contemporary environmental constructs. Where the Earth was considered alive and sensate, it was

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11 Roger King, 'Critical Reflections on Biocentric Environmental Ethics: Is It an Alternative to Anthropocentrism?' in Jonathan Smith and Andrew Light (eds), *Space, Place, and Environmental Ethics* (1997) 209, 210.

12 Claire Williams, 'Wild Law in Australia: Practice and Possibilities' (2013) 30 *Environmental and Planning Law Journal* (*EPLJ*) 259.

13 See generally, Arne Naess and the Deep Ecology Movement (short version)—YouTube available at www.youtube.com/watch?v=GJz2zVW9WHM (accessed 28 February 2018). For a more distinctly Christian approach, see the works of Thomas Berry, eg *The Sacred Universe: Earth, Spirituality, and Religion in the Twenty-First Century* (2009).

14 While the origins of ecofeminism are debated, it is often attributed to Françoise d'Eaubonne, *Le Féminisme ou la Mort* (1974). The movement, which brings together feminism and ecology, has continued with a presence more recently in resistance to climate change.

15 Again there are various origins to these concepts but the recent incarnation of these ideas is often attributed to Cormac Cullinan see eg https://therightsofnature.org/cormac-cullinan-on-wild-law/.

16 Robin G Collingwood, *The Idea of Nature* (1960), 4. Notably, ancient Greek views also emphasised the ascendancy of the mind over the physical body.

17 Virginia Marshall, 'Deconstructing Aqua Nullius: Reclaiming Aboriginal Water Rights and Communal Identity in Australia' (2013) 8 *Indigenous Law Bulletin* 26, 9.

contrary to ethical behaviour to carry out destructive acts against it. Religions such as Buddhism reflect a similar orientation, and the recent moves to ascribe legal personality to mountains and rivers in part captures these ideas.[18] Organic views of people and nature are shared by the creation myths of many indigenous peoples, including the Dreamtime stories of Australia's Aboriginal people that are integral to their law.[19] Indigenous peoples' law and custom similarly eschew the nature–culture division in favour of the holistic worldview of Indigenous societies.[20]

Aspects of an organic worldview have filtered into modern Western scientific culture. For instance, the notion of a cyclical life force underpins concepts of the Earth as a system governed by ultimate limits—a system that works towards equilibrium. The Gaia thesis, developed by James Lovelock, builds from an organic view of nature in that it conceptualises the biosphere as a single organism functioning in an integrated, self-regulating manner.[21] This view has experienced a renaissance in recent times, coalescing with systems thinking approaches stressing the 'planetary boundaries' that constitute the safe operating space for humanity to continue to develop and thrive.[22] Echoes of this approach are evident in successive assessment reports of the Intergovernmental Panel on Climate Change, which have issued increasingly strong warnings about exceeding global warming limits of more than 2°C of warming. Underlying such warnings is the suggestion that excessive anthropocentric greenhouse gas emissions may precipitate the globe into an era of inevitable, exponential warming. The concept of the Anthropocene has been coined in this context.[23]

In Western societies, the organic worldview was increasingly displaced from the sixteenth century as nature came to be seen, more and more, as inferior to humanity. In this respect, the Christian religious tradition provided a major source for evolving ideas about human–nature interactions. Man [sic] in the image of a transcendent God was able to disassociate himself from the natural objects beneath him in the hierarchy of beings.[24] As a consequence, Christian religious belief placed humankind at the top of a natural order created by God, in a position of power over other living things and human surroundings. This hierarchical dominion model is implicit, but pervasive, in many legal models, such as the sovereignty principle that informs international law and which has, at times, been a formidable barrier to environmental protection.[25]

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18 See eg *Te Awa Tupua (Whanganui River Claims Settlement) Act 2017* (NZ) and Record of Understanding between the NZ Crown and Eight Taranaki Iwi in Respect of Egmont National Park (Taranaki Maunga) re joint management by local Māori and the Government. See also James Morris and Jacinta Ruru 'Giving Voice to Rivers: Legal Personality as a Vehicle for Recognising Indigenous Peoples' Relationships to Water' (2010) 14 *Australian Indigenous Law Reporter* 49, 50.

19 Christine Black, *The Land is the Source of the Law* (2011) 3–17.

20 See eg Deborah Bird Rose, 'Dreaming Ecology', in *Nourishing Terrains: Australian Aboriginal Views of Landscape and Wilderness* (1996), 49–61.

21 James Lovelock, *Gaia: A New Look at Life on Earth* (1979).

22 This theory is advocated in the work of the Stockholm Resilience Centre, see www.stockholmresilience.org/research/planetary-boundaries/planetary-boundaries/about-the-research/the-nine-planetary-boundaries.html.

23 See eg Tim Stephens, 'Reimagining International Environmental Law in the Anthropocene', Louis Kotzé (ed) *Environmental Law and Governance for the Anthropocene* (2017).

24 John Passmore, *Man's Responsibility for Nature: Ecological Problems and Western Traditions* (1974), 6–16.

25 On the sovereignty principle in international environmental law, see further Ch 7.

Nonetheless, the precise impact of religious views on Western attitudes towards the natural environment is debated.[26] On the one hand, support for the exploitation of nature is often ascribed to Judeo-Christian teachings, especially the biblical edict in Genesis, directing man to be fruitful and multiply, and fill the earth and subdue it.[27] By contrast, proponents of a less instrumental approach contend that the relevant interpretation of Genesis is to emphasise human 'dominion' as stewardship; an ideal embodying care for, and conservation of, the environment. Approaches along the spectrum between these two extremes have played an important role in framing our understandings of the environment and, in turn, have had an enduring influence upon the evolution of legal concepts.

In Europe, Enlightenment thought, which emerged after the medieval period, laid the foundation for our modern ideas of the natural environment. In the Enlightenment period, prominence was given to the concept of humans as rational beings. This philosophy, known as humanism, differentiated the human from the natural, and celebrated the individual. A dominant theme of humanism is anthropocentrism, that is, that human beings are the focal point of the world. Humanism and anthropocentricism remain prevailing influences in Western thought, underpinning familiar legal concepts such as human rights.

Strong parallels exist between the nature/human dualism of Enlightenment-era thinking and the view that elements of the natural world do not have the same legal status as humans. In a legal sense, this is made most apparent by assigning nature, including animals and plants, to the category of property.[28] Underlying property law is the notion that, if something is designated as property, then property owners have a legal right to use and control that object—whether land or natural resources—largely without restriction. Even though there has been qualification to these views regarding the absolute legal control over land and resources that property ownership confers, a powerful association is retained in the popular mind between property and use at will.

Moreover, Western legal systems, based on the common law, still largely reflect an anthropocentric position that prescribes an inferior status for nature. Typically, the environment itself and many of its components, such as animals, are not regarded as having legal rights and are devoid of legal protection under the common law as a result of being designated as property.[29] Even environmental protection legislation does not offer protection for individual animals; rather, the emphasis is on protection of species. Typically, also, where the law seeks to assign liability, as in tort, it is people who bear responsibility for any damage that may be caused by animals.

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26 Paul Babie, 'Why Should I Do This? Private Property, Climate Change and Christian Sacrifice', in Nadirsyah Hosen and Richard Mohr (eds), *Law and Religion in Public Life: The Contemporary Debate* (2011) 65.

27 Lynn White, 'The Historical Roots of Ecological Crisis' (1967) 155 *Science* 1203, 1205.

28 For discussion see Yoriko Otomo and Edward Mussawir, *Law and the Question of the Animal: A Critical Jurisprudence* (2012).

29 For a contrary view see eg Stephen White, 'Animals and the Law: A New Legal Frontier?' (2005) 29(1) *Melbourne University Law Review* 298 as a response to and review of Cass R Sunstein and Martha C Nussbaum, (eds*) Animal Rights: Current Debates and New Directions* (2004). See, more recently, Nick James and Rochelle James, 'What Are We Trying to Do in Teaching Animal Law to Law Students?' [2017] 27 *Legal Education Review* 1.

The rise of environmentalism throughout Western societies in the 1970s was very important in challenging the dominant legal modes for representing the natural world.[30] Some lawyers questioned the traditional common law approach, suggesting that the law should protect more than people's property rights in environmental resources. For example, Lawrence Tribe, a prominent legal philosopher in the United States, wrote a highly influential article in 1974, entitled 'Ways Not to Think about Plastic Trees', which argued for the need to preserve the environment. Other legal writers of this period challenged the view that nature is to be denied legal rights, (ironically) drawing on the historical trajectory of progressively including different categories of people into the groups accorded human rights at law.[31]

In a similar vein, Christopher Stone's celebrated essay, 'Should Trees Have Standing?', advocated the extension of legal rights of representation to trees and other natural objects. Stone's article was written against the backdrop of a major conflict over the preservation of forests on the west coast of the United States and a legal challenge to forestry operations in pristine, old-growth cedar forests mounted by the Sierra Club. According to Stone, rights for nature could be achieved by assigning legal personality to elements of the natural environment in the same manner as law had extended its legal concept of personality to non-human entities such as corporations. Davies, in turn, has argued for a legal consciousness for trees.[32] If the natural world has legal personality then it conceivably can exercise various legal rights, including the capacity to mount a court challenge. More recently, these ideas have been given legal expression in environmental rights provisions of some national constitutions. For example, chapter 7 of Ecuador's 2008 *Constitution* declares certain rights for nature (or Pachamama), including its right to exist, persist, maintain and regenerate its vital cycles, structure, functions and its processes in evolution (art 71) and a right to restoration (art 72).

3.1.2 Ecocentric approaches

Instrumental approaches have been a prominent theme in Western constructions of the environment, which have largely regarded it as composed of exploitable resources. Influential environmental philosophies developed in the late twentieth century instead took an ecocentric approach, emphasising the intrinsic value of nature and the need to preserve the natural world itself. Such 'deep ecology' views stressed the inherent value of all life, independent of its utility to people.[33] Humans, according to the deep ecology perspective, do not have the right to reduce the richness and diversity of life. Environmental law principles, such as biological integrity, reflect similar views, and such thought has been significant for many concepts now regarded as fundamental principles of international and Australian environmental law. A more radical legal expression of theories of deep ecology is the evolving area of 'wild law' and 'Earth jurisprudence' that asserts the need for law to transition from an exclusive focus on humans to recognise that

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30 Peter Burdon, 'The Earth Community and Ecological Jurisprudence' (2013) 3(5) *Onati Socio-Legal Series* 815.

31 Roderick Nash, *The Rights of Nature: A History of Environmental Ethics* (1989).

32 Margaret Davies, 'The Consciousness of Trees' (2015) 27 *Law and Literature* 217–35.

33 Arne Naess, *Ecology, Community and Lifestyle: Outline of an Ecosophy* (1989).

people exist as part of a broader Earth community.[34] In tandem there are movements to acknowledge law as a material expression in the world, located in place and time, and which recognises the need for open, plural forms.[35]

Another significant movement of the late twentieth century that acknowledged the plurality of life forms is ecofeminism. Ecofeminism draws on many threads but typically emphasises an ethic or duty of care as a central feature.[36] These concepts of an enhanced duty of care also influenced reform efforts in traditional legal fields, such as negligence law. Some ecofeminists argue that the adoption of a duty of care predisposes towards a nurturing perspective that creates a bond between people and nature, thereby acting as a restraint on excessive exploitation of the natural world. More recently a general duty of care has been advocated as a centrepiece of revitalised and reformed environmental law in Australia.[37]

Feminist scholars have argued that the exclusion of women's experience from the development of legal and other disciplinary knowledge was an important factor in precipitating the view of nature as separate: there to be controlled and exploited. In Australia, seminal works, such as *Feminism and the Mastery of Nature* have linked a strong developmental ethos and the subsequent degradation of the Australian environment with the need to have mastery over nature.[38] In other parts of the world, ecofeminist scholarship in postcolonial societies has associated the excessive exploitation of the environment not only with male domination, but also with the impact of European colonialism. The work of Vandana Shiva in India exemplifies this perspective, bringing together diverse standpoints to reveal the complex interactions between gender, poverty and environmental degradation. Shiva's work highlights the importance of customary practices in villages, such as seed collection by village women, in maintaining biodiversity. She advocates a return to sustainability at the local scale as a counter to globalisation and the potential for 'biopiracy' by multinational companies.[39]

3.2 Scientific constructs

Scientific discourses about nature have played a formative, often decisive, role in determining notions of the environment.[40] Several major trends in scientific thought

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34 See further Cormac Cullinan, *Wild Law: A Manifesto for Earth Justice* (2nd ed, 2011); Peter Burdon (ed), *Exploring Wild Law: The Philosophy of Earth Jurisprudence* (2012); Rosemary Lyster (ed), *In the Wilds of Climate Law* (2010). The emerging principles of wild law are taken up in Ch 2.

35 Margaret Davies, *Law Unlimited: Materialism, Pluralism, and Legal Theory* (2017).

36 For an application of feminist views to climate change and environmental protection see Lee Godden, '*Wildlife Preservation Society of Queensland Proserpine/Whitsunday Branch Inc v Minister for the Environment and Heritage and Others*' in Heather Douglas et al (eds), *Australian Feminist Judgments: Righting and Rewriting Law* (2014) 138.

37 Neil Gunningham, 'Should a General Duty of Care for the Environment Become a Centerpiece of a Next Generation Environment Protection Statute?' (2017) 34 *EPLJ* 198. Environmental duties are considered in Ch 4.

38 Val Plumwood, *Feminism and the Mastery of Nature* (1993).

39 Maria Mies and Vandana Shiva, *Ecofeminism* (1993); Vandana Shiva, *Staying Alive: Women, Ecology, and Development* (1989).

40 The interaction of law and science is discussed further in Ch 6.

regarding the environment can be identified: primary among them was the rise of technological views, with a subsequent return to holistic conceptions, albeit couched in terms of rational systems theory. The emergence of the science of ecology was a catalyst for this re-invigoration.[41] Such approaches resonate strongly with a view of the world as a synthesis: the whole affecting the parts and the parts affecting the whole.[42] Another change has been catalysed by the growing emphasis on non-equilibrium dynamics, stochastic processes and 'uncertainty'. This development poses a challenge to older scientific (and philosophical) notions of nature as a system in balance, as well as to legal approaches that seek to regulate the environment as a stable, 'natural' entity.[43]

3.2.1 From rationalism to natural philosophy and ecology

The rise of rationalistic, scientific thinking in Western societies was accompanied by Enlightenment-era philosophies that posited reason and experimental observation as the primary means for understanding nature and for harnessing natural resources for the benefit of mankind.[44] The emergence of such scientific theories helped to refashion older ideas about the human–nature relationship. Scientific discourses promoted the perception that the world is made according to a constructed, rational plan, and therefore, it became feasible to investigate how the natural world was made. In turn this view popularised the inductive method of scientific enquiry, based upon the progressive accumulation of knowledge about the natural world through experimentation and observation. This methodology, which remains at the heart of contemporary science, promotes a view whereby nature is divided into separate components and discrete processes that are the subject of intensive research.[45] The compartmentalised view of the natural world that underlies reductionist scientific thinking exerted a powerful influence on the concepts of the environment that initially found their way into law. For instance, common law property concepts similarly divide nature into segments, with separate legal rights assigned, for example, for water use, exploitation of minerals and utilisation of timber.

Rationalist ideas about nature also provided the platform for European exploitation of the environment during the technological age. The Industrial Revolution was linked implicitly to the idea that nature was an object to be manipulated. By the early twentieth century, rapid technological advances in Western countries, like Australia, underpinned the prevalent mechanistic worldview of nature.[46] This view promoted management approaches that sought to control and optimise the efficient working of nature (often aligned with resource conservation models).

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41 For an overview of the rise of ecology, see Donald Worster, *Nature's Economy: A History of Ecological Ideas* (2nd ed, 1994).

42 See also the discussion of ideas of integration in Ch 5.

43 Robin Kundis Craig, '"Stationarity Is Dead" Long Live Transformation: Five Principles for Climate Change Adaptation Law', (2010) 34 *Harvard Environmental Law Review* 9.

44 See John Herman Randall, *The Making of the Modern Mind: A Survey of the Intellectual Background of the Present Age* (1926).

45 Peter Riggs, *Whys and Ways of Science: Introducing Philosophical and Sociological Theories of Science* (1992).

46 Daniel B Botkin, *Discordant Harmonies: A New Ecology for the Twenty-First Century* (1990) 105.

Another important source for legal classifications of nature was natural philosophy (or 'natural science'). Natural philosophy was based on a distinctively Western manner of organising the environment, with a veritable passion for collecting and ordering. Within natural history a predominantly analytical, classificatory approach rose to ascendancy in the nineteenth century. For those who embraced this approach (which included many early, influential conservationists in Australia),[47] nature was constructed through classification systems that allowed scrutiny of the individual specimen and/or species. The resonances of this approach remain evident in environmental law in endangered species lists.

Yet, nascent within natural philosophy was the seed to undermine the distancing of humans from nature. Darwin's theory of evolution revealed that humans and nature had evolved from a common biological source and differentiation among species was to be explained by the theory of natural selection.[48] Alongside such ideas was a growing movement which signalled a return to a holistic approach to nature. In the 1850s, Alexander von Humboldt released his important work *Cosmos*: an all-inclusive conception of the natural world that was a progenitor of later socio-ecological systems theory.[49] A little later, George Perkins Marsh published his influential research, *Man and Nature*, on the cumulative destruction of nature due to industrialisation and 'material progress'.[50] These initiatives were soon to be given further impetus by ecological science.

Ecology as it developed over the second half of the nineteenth century quickly became a leading source of ideas about the natural world. The term 'Ökologie' (ecology) was coined by the German biologist Ernst Haeckel in 1866 and derived from the Greek word 'oikos' meaning home. Initially, it concerned the study of organisms (potentially including humans) in the places where they live, their habitats or surroundings.[51] With its focus on interactions between organisms and between organisms and their physical surroundings, ecology presents the environment as a set of interconnected and interdependent processes. While ecological science stresses interconnections, it still assumed that ecosystems operate according to predictable laws. This view came to supply a basis for policies of wise use (sustainability) of natural resources. The science later served as an important resource for the environmental movement from the 1970s. Environmentalists picked up ecology's theme of environmental interconnectedness and its implication that human activities affecting natural systems have wide-ranging impacts.[52] Hence an early, but continuing, focus of much environmental law is environmental impact assessment (see further Chapter 4).

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47 Drew Hutton and Libby Connors, *A History of the Australian Environmental Movement* (1999) 21.

48 John Passmore, *Man's Responsibility for Nature: Ecological Problems and Western Traditions* (1974), 23.

49 Alexander von Humboldt, *Cosmos: A Sketch of a Physical Description of the Universe* (1849–58). The concept of linked social and ecological systems was developed by Gunderson and Holling through a series of works. See eg C S Holling, 'Understanding the Complexity of Economic, Ecological and Social Systems' (2001) 4 *Ecosystems* 39; Lance Gunderson and C S Holling, *Panarchy: Understanding Transformations in Human and Natural Systems* (2002).

50 George Perkins Marsh, *Man and Nature* (1864). Ironically of course these ideas of an era of destruction have resurfaced with climate change and Anthropocene concepts of a new geological 'period'.

51 Peter Attiwill and Barbara Wilson (eds), *Ecology: An Australian Perspective* (2003) 2.

52 Libby Robin, *Defending the Little Desert: The Rise of Ecological Consciousness in Australia* (1998) 3.

By the mid-twentieth century, a central tenet of ecology was the belief that nature when undisturbed tends towards equilibrium (ie maintenance of a constant state).[53] This notion reflected older ideas about the balance of nature.[54] Concepts of natural ecological systems as stable and self-perpetuating, in turn, have provided the basis for many modern environmental management practices.[55] Equilibrium models proved popular with early environmentalists, as they buttressed conservationists' campaigns for the preservation of a natural state and its constituent biodiversity—again a view with continuing resonances in environmental law.

3.2.2 Balance and resilience

Ecological theories premised on the stability of nature and the relevance of mechanistic models for understanding natural systems continue to form the core of the predictions utilised in environmental management and regulation. Nevertheless, there has been increasing disquiet among ecologists over the utility of these theories and approaches in explaining real-world ecological phenomena. Significant discrepancies between theoretical predictions and observational data, together with the emergence of constructs drawn from chaos theory and mathematical modelling, have led to an increasingly widespread view on the part of ecologists 'that classical equilibrium theories are woefully inadequate'.[56] The 'new ecology' that has emerged emphasises so-called non-equilibrium dynamics in understanding how ecosystems function. Rather than assumptions of stability, predictability and a return to equilibrium following disturbance, non-equilibrium theories emphasise the possibility of instability, variability and uncertainty in natural systems, as well as the inherent role of disturbance and change (including human-induced change) in shaping ecological interactions.[57] These ideas increasingly are reflected in the rubric of adaptive management.[58]

This novel ecological thinking now is often captured by resilience concepts (discussed further in Chapter 2) that have migrated from ecology into various social and policy contexts. For instance, ecological thinking that sees disturbance, such as fire, as a natural event rather than an irregular divergence from the norm, will seek to integrate disturbance as part of management regimes. An accompanying trend reflects a view that the environment is spatially and temporally variable, with external human disturbances as critical to shaping ecological change as internal system dynamics. Simultaneously, this has brought about a transition in management practices for natural areas, for example, as

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53 Dan Tarlock, 'The Non-Equilibrium Paradigm in Ecology and the Partial Unravelling of Environmental Law' (1994) 27 *Loyola of Los Angeles Law Review* 1121, 1125–8.

54 Botkin, above n 46, 12.

55 Ian Scoones, 'New Ecology and the Social Sciences: What Prospects for a Fruitful Engagement?' (1999) 28 *Annual Review of Anthropology* 479, 481–2.

56 Simon A Levin, 'Towards a Science of Ecological Management' (1999) 3 *Conservation Ecology* 6.

57 See eg Tabatha J Wallington et al, 'Implications of Current Ecological Thinking for Biodiversity Conservation: A Review of the Salient Issues' (2005) 10 *Ecology and Society* 15.

58 Brian Norton, *Sustainability: A Philosophy of Adaptive Ecosystem Management* (2005). See also the discussion of adaptive management in Chs 2 and 6.

managers may focus on how best to manage the basic functions of a fragmented system of vegetation remnants rather than self-contained reserves.[59]

The movement away from previous assumptions of stability has presented challenges for environmental policy and law, especially where there are conflicting ideas of 'naturalness'. This looms as a problem where ideas of balance have been heavily relied upon to support legal reforms to ensure environmental preservation and the minimisation of human impacts. One response, evident in ideas of ecological restoration,[60] lies in ecologists developing ways to distinguish natural patterns of change from harmful ones (an area of research that is becoming a growing focus of environmental impact assessment studies and underlies socio-ecological concepts of resilience).[61] Another potentially more difficult problem is loss of predictive certainty, with the transition to models that acknowledge precaution, ecosystem complexity, uncertainty and variability. Acknowledgment of the importance of human agency in shaping ecological systems illuminates the need for choices to be made about the acceptability of different kinds of environmental impact.[62] This may require adjustments to traditionally science-dominated risk assessment processes in favour of greater integration with other disciplines and the incorporation of socio-economic perspectives on the environment, a topic we explore further in Chapter 6.

3.3 Economic constructs

Economic perspectives, like those of ecological science, have been a major contributor to the contemporary understandings of the environment that have been adopted in law. In turn, they have influenced ideas about how environmental problems should be managed. For many years in environmental law, the engagement with sustainable development has seen various attempts to manage biodiversity and environmental decline, while still allowing economic growth. The core concern of economics relevant to environmental law thus is to understand the choices (and decisions) people and societies make in allocating scarce resources among competing ends.[63] In economic theory, resources are things people want and trade in market transactions. The concept of environmental exchange is prominent:

> In establishing a market, the government first creates a new form of property—legal entitlements to emit pollutants, catch fish, develop habitat—and then imposes a set of rules governing their exchange.[64]

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59 Levin, above n 56.

60 These ideas and their potential relevance in extending principles of environmental law are discussed further in Ch 2.

61 See eg Barbara J Downes, 'Monitoring Experiences from Downunder—The Importance of Deciding *a Priori* What Constitutes a Significant Environmental Change' in Giuliano Ziglio et al (eds), *Biological Monitoring of Rivers* (2006) 369.

62 Laura Schuijers, 'Environmental Decision-Making in the Anthropocene: Challenges for Ecologically Sustainable Development and the Case for Systems Thinking' (2017) 34 *EPLJ* 179.

63 Ross Ramsay and Gerard C Rowe, *Environmental Law and Policy in Australia: Text and Materials* (1995) 68.

64 James Salzman and J B Ruhl, 'Currencies and the Commodification of Environmental Law' (2000) 53 *Stanford Law Review* 607, 617.

Conceiving of the environment within a mainstream economics framework means viewing the environment as a kind of resource or asset; one that provides particular goods and services desired by people.[65] The convergence of these factors has seen the adoption of market approaches such as ecosystem services and offsets.[66] The term 'ecosystem services' expresses the view that the services provided by the natural world should be factored into decision making.[67] This framework is necessarily anthropocentric in nature as what is judged to be an environmental asset, and hence assigned importance, is determined by its utility to humans. Of course, societal perceptions of utility will be influenced by prevailing perspectives, and so change over time. Accordingly, biodiversity and a range of other aspects of the environment are now seen as providing valuable 'aesthetic and life-sustaining services' for society, from clean air and water to the joy of looking out on a scene of natural beauty.[68]

3.3.1 Economic valuation of environment

To the extent that the environment becomes an asset, economics can ensure that environmental resources are attributed some value, though this value is by no means a pre-eminent one. Rather, it is customary to examine all uses to which a resource might be put (including those that deplete the resource), with the most efficient use being favoured. The criterion of efficiency is measured in various ways by economists, but broadly equates to a situation where a specific resource allocation maximises the overall benefits to society from the use of the resource.[69] The reason that efficiency is chosen in economic theory as the relevant benchmark is that it is regarded as a value-free, objective criterion of social welfare.[70] Thus, mainstream economics attaches no moral opprobrium to activities causing environmental damage or pollution if resource allocations are otherwise efficient.[71]

To be able to compare the costs and benefits of different resource allocations, it is necessary to have a common metric. Most usually, economic costs and benefits are measured in monetary terms as a function of an individual's willingness to pay to achieve a desired result.[72] In the case of environmental assets, this system of valuation poses significant challenges. Many environmental resources have not been the subject

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65 Tom Tietenberg, *Environmental Economics and Policy* (6th ed, 2014).

66 Robert Costanza et al, 'The Value of the World's Ecosystem Services and Natural Capital' (1997) 387 *Nature* 253.

67 For discussion of the adoption of ecosystem services models in public policy, see J B Ruhl, 'The Twentieth Annual Lloyd K Garrison Lecture: In Defense of Ecosystem Services' (2015) 32 *Pace Environmental Law Review* 306.

68 Tom Tietenberg and Lynne Lewis, *Environmental and Natural Resource Economics* (10th ed, 2014).

69 For an interesting discussion of these trade-offs and the need to value biodiversity see Rhett Martin, 'The Law and Economics of Feral Extermination: Legal and Economic Answers to Eradicating the Cane Toad' (2015) 32 *EPLJ* 115.

70 Herman E Daly and Joshua Farley, *Ecological Economics: Principles and Applications* (2004) 4.

71 Richard Revesz, *Foundations of Environmental Law and Policy* (1997) 3.

72 More recent approaches do not always involve monetary indicia; see C L Ambrey and C M Fleming, 'Valuing Ecosystem Diversity in South East Queensland: A Life Satisfaction Approach' (2014) 115 *Social Indicators Research* (*Soc Indic Res*) 45.

of trade, making an appropriate price difficult to determine or to activities being undertaken without regard to their full environmental costs.[73] The so-called negative 'externalities' such as pollution that result are often borne by individuals other than the direct beneficiaries of the activity, or by society at large. A good example of a negative environmental externality arises in the situation where a factory discharges its production wastes into a nearby river rather than treating them, thereby passing on the associated environmental costs to downstream users of the river. Many environmentalists argue that such externalities need to be 'internalised' by those responsible for them if markets are to avoid inefficient economic choices. Such thinking underlies the 'polluter pays principle', discussed further in Chapter 2, which features in the objectives of many state pollution laws.[74] These concepts also play an important part in international law concerned with environmental protection and sustainable development (see Chapter 7).

Internalising environmental externalities typically relies on methods for attributing a monetary or other economic value to environmental resources or environmental protection so that the full environmental costs and benefits of resource allocations can be factored into policy and decision-making processes.[75] Environmental economists have devised various techniques that allow values to be derived not only for direct uses of natural and environmental resources (eg harvesting timber or mining coal), but also so-called passive use and existence values.[76] An example is the social cost of carbon model used by the US Environmental Protection Agency to value the climate impacts of particular rulemakings. The social cost of carbon 'is a measure, in dollars, of the long-term damage done by a ton of carbon dioxide (CO2) emissions in a given year' and is intended to be a 'comprehensive estimate of climate change damages [including] changes in net agricultural productivity, human health, property damages from increased flood risk, and changes in energy system costs, such as reduced costs for heating and increased costs for air conditioning'.[77] In recent cases challenging coal mine expansions under federal US environmental impact assessment law, some courts have found that agencies' assessments are inadequate where they fail to take account of the social cost of carbon in evaluating the impacts of the proposals.[78]

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73 Robyn Eckersley (ed), *Markets, the State, and the Environment: Towards Integration* (1995) 7, 13.

74 See eg *Environment Protection Act 1970* (Vic). See also discussion of the principle in *Bentley v BGP Properties Pty Ltd* (2006) 145 LGERA 254.

75 For early views see Robert Costanza et al, 'The Value of Ecosystem Services: Putting the Issues in Perspective' (1998) 25 *Ecological Economics* 67; Bruno Frey et al, 'The Life Satisfaction Approach to Environmental Valuation' (2010) 2 *Annual Review of Resource Economics* 139.

76 Environmental existence values can be difficult to determine, as there is rarely an available economic proxy value. Contingent valuation is designed to overcome this problem; see Brian R Binger et al, 'The Use of Contingent Valuation Methodology in Natural Resource Damage Assessments: Legal Fact and Economic Fiction' (1995) 89 *Northwestern University Law Review* 1029.

77 United States Environment Protection Agency, 'The Social Cost of Carbon', https://19january2017snapshot.epa.gov/climatechange/social-cost-carbon_.html.

78 See, eg, *High Country Conservation Advocates v US Forest Service*, 2014 US Dist LEXIS 87820 (D Colo June 27, 2014).

3.3.2 Addressing market failure

The ongoing efforts of environmental economists to devise and improve methods for pricing environmental goods and services—even those which have no real market value—reflect the central tenet of the discipline that if mechanisms can be developed for internalising environmental externalities and valuing environmental assets appropriately then the market can be relied upon to produce an efficient allocation of environmental resources.[79] However, economists' belief in the market as a means for producing allocative efficiency is underpinned by certain assumptions that often do not apply to goods and services provided by the environment. Where the market is not capable of producing an efficient allocation, economists refer to the situation as one of market failure. For example, markets tend to perform poorly when it comes to the allocation of environmental resources that are public goods or common pool resources (such as open-access fisheries). In the case of the former, the inability to exclude other potential users of the resource encourages some to free-ride on the contributions made by others.[80] In the case of the latter, self-interested activities by individual users that deplete the resource without regard to the interests of the broader community can lead to a situation of resource overexploitation and collapse, famously described by Garrett Hardin as 'the tragedy of the commons'.[81]

The solutions that environmental economists advocate for dealing with market failure generally rely on making environmental resources a tradeable commodity in some way; for example, through the creation of emission permits that can be bought and sold in an emissions trading market.[82] This approach relies upon another important economic theory, developed by Ronald Coase.[83] The Coase theorem states that when trade in an externality is possible, then, assuming low or zero transaction costs, 'it is as efficient to allow the victim of pollution a right to compensation as it is to recognize the polluter's right to pollute'.[84] Accordingly, externalities may be resolved in a Coasean framework through the attribution of ownership rights over environmental resources. Drawing on this theory, market mechanisms for trading in environmental resources, such as water, have been adopted as the basis of environmental regulation in some sectors. This has often occurred in the face of criticism that it is inappropriate or unethical to view natural

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79 Belief in market mechanisms to effect allocative efficiency can be traced back to Adam Smith's treatise, *The Wealth of Nations* (1776).

80 Alan Moran, 'Tools of Environmental Policy: Market Instruments versus Command-and-Control' in Robyn Eckersley (ed), *Markets, the State, and the Environment: Towards Integration* (1995) 73, 79.

81 Garrett Hardin, 'The Tragedy of the Commons' (1968) 162(3859) *Science* 1243. Hardin's article has generated its own literature challenging its central premise that human beings inevitably act as individualised rational economic actors incapable of organising communitarian responses to protect shared environmental resources: see eg Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (1990).

82 Thomas Tietenberg, *Emissions Trading: Principles and Practice* (2nd ed, 2006). Another common alternative designed to force internalisation of externalised environmental costs is the use of environmental taxes and charges known as Pigouvian taxes after the economist, Pigou, who first proposed their use.

83 Ronald Coase, 'The Problem of Social Cost' (1960) 3 *Journal of Law and Economics* 1.

84 Nicolas de Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules* (2002) 22.

resources (solely) as a market commodity. The use of market tools for the purposes of environmental regulation and the critiques of such practices are taken up in later chapters.

Not all economists subscribe to the mainstream disciplinary view that the environment is simply another asset to be assimilated into the market system and valued according to its dictates. Reflecting interdisciplinary approaches in the environmental area, the field of ecological economics has emerged as the fusion of economic theory with insights from ecology.[85] Proponents see it as an opportunity to address the defects of both disciplines by forcing each to adopt a broader focus. In the case of economics, this requires biosphere limits to be incorporated into analyses of resource allocation, while ecologists are urged to overcome their tendency to ignore the role of humans in ecosystem functioning. As in the philosophical domain, the overall trend is towards placing greater emphasis on themes of synthesis and interconnectedness.

Hence, a fundamental tenet of the methodologically diverse field of ecological economics is that the economy operates 'as part of a larger enveloping and sustaining Whole—namely, the Earth, its atmosphere, and its ecosystems'.[86] Whereas standard economics emphasises the efficiency of resource allocations and tends to assume the desirability of unlimited economic growth, ecological economists stress the need for attention to additional criteria that precede and constrain allocative efficiency. These are, first, questions of the fairness of resource distributions (between different groups in society, present and future generations, and humans and other species) and, second, the scale of the economy relative to the finite ecosystem of which it forms part.[87] An important guiding principle now is the need for sustainability in patterns of environmental resource allocation and distribution, concepts which we discuss further in Chapter 2.

3.4 Cultural constructs

Increasingly, it is recognised that environmental and cultural/social constructs are intertwined. The rise of environmental rights and justice concepts discussed in later chapters and the United Nations Sustainable Development Goals evidence the merging of these approaches. Historically, constructs of the environment derived largely from Western philosophical and moral traditions. These constructs are not universally accepted; they represent a culturally specific understanding. Other cultures also adopt different perspectives on the governance of the natural world. Global efforts to redress environmental harm have been made to recognise 'common but differentiated responsibilities' in certain legal frameworks but full accounting for cultural differences within environmental law remains at a formative stage.

Nonetheless, the experiences of other cultures have had a major impact in extending and transforming conventional notions of environmental protection and

85 Robert Costanza and Robert V O'Neill, 'Ecological Economics and Sustainability' (1996) 6 *Ecological Applications* 975.

86 Daly and Farley, above n 70, 15.

87 Daly and Farley, above n 70, 425.

sustainability. An example is provided by laws regarding world heritage protection. The 1972 *World Heritage Convention* treated natural heritage and cultural heritage as distinct spheres.[88] The Convention's dualistic approach, which saw extensive world heritage protection afforded to natural 'wilderness' that was least touched by human 'interference',[89] was challenged and ultimately modified by an acknowledgement of the long-term association of cultural groups living in, and with, these environments. After a series of conflicts and human rights challenges there was increasing understanding that wilderness values can dispossess local peoples living in or near protected areas and conservation zones.[90] Indigenous peoples, as well as developing nations, expressed concerns that:

> the separate labelling of elements, characteristics and values of the environment as being either cultural or natural [means] little consistent attention (with some exceptions) has been given to the interactions and interplays between the natural and cultural environment, between people and place.[91]

Beginning in the early 1990s, there were efforts to modify the processes for identifying and managing heritage areas to take account of non-Western approaches. Prominent among them was the adoption of the category of cultural landscape under the *Convention*.[92] In response, in Australia, states such as Queensland and Victoria,[93] enacted comprehensive Indigenous cultural heritage legislation that intersects with environmental values. At a federal level, major amendments to the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) in 2003 saw national heritage and Indigenous heritage become matters of national environmental significance and thus 'triggers' for federal impact assessment.[94]

3.4.1 Indigenous peoples' perspectives

In Australia, the recognition of native title in *Mabo v Queensland [No 2]*[95] in 1992, while remarkable for displacing the legal position that Australia was terra nullius at the time of colonisation, also was significant in altering attitudes about environmental conservation

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88 *Convention for the Protection of the World Cultural and Natural Heritage*, opened for signature 23 November 1972, 151 UNTS 1037 (entered into force 17 December 1975), arts 1 and 2 (World Heritage Convention).

89 Colin Michael Hall, *Wasteland to World Heritage: Preserving Australia's Wilderness* (1992) 158–97.

90 Lee Godden, 'Indigenous Heritage and the Environment: Legal Categories are Only One Way of Imagining the Real', (2002) 19 *EPLJ* 258.

91 Ibid.

92 In 1992 the World Heritage Committee adopted guidelines concerning the inclusion of 'cultural landscapes' in the World Heritage List.

93 *Aboriginal Cultural Heritage Act 2003* (Qld); *Aboriginal Heritage Act 2006* (Vic).

94 *Environment and Heritage Legislation Amendment Act (No 1) 2003* (Cth).

95 175 CLR 1. The High Court found Indigenous peoples' rights to land and waters could be recognised at law. Where claimants could bring sufficient evidence of connection via custom and tradition, then they could establish a native title claim to land and waters where not extinguished by Crown acts such as the grant of an inconsistent tenure. See subsequently s 223 *Native Title Act 1993* (Cth).

laws.[96] Recognition of Indigenous peoples' land rights in Australia has allowed insight into how notions of the environment—embodied in property law, resource regimes and environmental protection laws—were superimposed upon Indigenous peoples and their connection with traditional land and waters.[97] More widely, the Indigenous estate (ie areas subject to Indigenous land rights and native title) now constitutes over 30 per cent of the land mass of Australia,[98] often in regions with high biodiversity levels. Accordingly, assisting Aboriginal peoples to manage and care for country represents a critically important element of environmental protection, while respecting their rights to manage country as they choose. In this regard, new opportunities are emerging for Indigenous participation in environmental management via measures such as generating credits through carbon offsetting.[99]

More culturally inclusive notions of environment[100] also have led to greater involvement of Indigenous peoples in many aspects of environmental management and the promotion of sustainability.[101] At a practical level, land rights and native title provided momentum for Indigenous peoples' co-management of many world heritage areas.[102]

Central to the capacity of Aboriginal and Torres Strait Islander peoples to care for country is the transmission of customary law and traditional knowledge. Many co-management regimes now acknowledge this vital role for Aboriginal and Torres Strait Islander laws. For example, with respect to the co-management regime governing the Uluru-Kata Tjuta National Park, the relevant agreement between the Commonwealth and the Anangu peoples is founded upon Indigenous law—Tjukurpa.[103] Indigenous-managed environmental regimes in Australia represent a fundamental recognition of Indigenous self-governance and an opportunity to foster traditional environmental knowledge as 'embodied and practiced rather than simply shared and context-free'.[104]

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96 See eg Donna Craig, 'Environmental Law and Aboriginal Rights: Legal Frameworks for Joint Management of Australian National Parks' in Jim Birkhead et al (eds), *Aboriginal Involvement in Parks and Protected Areas* (1992) 141.

97 William Adams and Martin Mulligan (eds), *Decolonizing Nature: Strategies for Conservation in a Post-Colonial Era* (2003).

98 For information on the extent of Native Title claims and Indigenous land use agreements see National Native Title Tribunal, available at www.nntt.gov.au/ILUAs/Pages/ILUA-Register.aspx.

99 See eg Emily Gerrard, 'Impacts and Opportunities of Climate Change: Indigenous Participation in Environmental Markets' (2008) 3 *Land Rights, Laws: Issues of Native Title*, Issues Paper 13.

100 Deborah Bird Rose, 'Dreaming Ecology', in *Nourishing Terrains: Australian Aboriginal Views of Landscape and Wilderness* (1996), 49.

101 See Lee Godden and Stuart Cowell, 'Conservation Planning and Indigenous Governance in Australia's Indigenous Protected Areas' (2016) 24(5) *Restoration Ecology* 692.

102 See eg the amendments to the *Great Barrier Reef Marine Park Act 1975* (Cth), to allow for joint management consequent upon the recognition of native title.

103 'Tjukurpa' is the Pitjantjatjara word for law, which governs history, knowledge, religion and morality in Anangu society. Information on the co-management agreement between the Commonwealth and the Anangu peoples can be obtained from the ATNS database available at www.atns.net.au.

104 Marcia Langton, Zane Ma Rhea and Lisa Palmer, 'Community-Oriented Protected Areas for Indigenous Peoples and Local Communities' (2005) 12 *Journal of Political Ecology* 43, 43.

Similar trends are evident within the international community, where the vital part that customary law and traditional knowledge plays in sustainable development is receiving enhanced attention.[105] However, gaps in legal protection for Indigenous traditional knowledge remain, both at the international level,[106] and domestically where despite 'legislative recognition of the rights of Indigenous people to their ecological knowledge and resources, there is no real means for enforcing those rights'.[107]

3.4.2 Cultural heritage and environmental law

In tandem with greater recognition of Indigenous peoples' connection to country, there is increasing acknowledgement that issues of 'environmental preservation cannot be isolated from [their] cultural construction'.[108] Cultural heritage and environmental issues converge in many contexts, although often these two spheres may be subject to different legal regimes. At a Commonwealth level, however, these 'special places' are brought together under the EPBC Act and its lists of national and Commonwealth heritage.

By contrast there can be instances where there are tensions between protection of the natural components of ecosystems and the retention of the cultural values associated with a protected place. For example, in Victoria in 2005 a major debate arose when the state government decided not to renew grazing licences for cattlemen in the Alpine National Park. The cattlemen mounted a campaign (literally) against the decision by riding their horses down Melbourne streets in protest. In response, the then Federal Government hinted that it might seek to use its environmental legislation to frustrate the state's exclusion of the cattle. Senator Ian Campbell, the Federal Environment Minister at the time, declared that the EPBC Act could be used to protect cultural heritage values derived from the mountain cattlemen's long history of use of the Alpine area and the associated 'Man from Snowy River' iconography.[109] In the following years, the cattle were periodically banned or allowed into the park on a trial basis, according to whichever party was in power in Victoria. The matter was resolved in 2015 when the incoming Labor government amended the national parks legislation to ban cattle permanently from the Alpine National Park.[110]

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105 See Peter Orebech and Fred Bosselmann, 'The Linkage between Sustainable Development and Customary Law' in Peter Orebech et al (eds), *The Role of Customary Law in Sustainable Development* (2005) 12, 17. See also the *Convention on Biological Diversity*, art 8(j) and the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization*, opened for signature 29 October 2010, UNEP/CBD/COP/DEC/X/1 (entered into force 12 October 2014).

106 See World Intellectual Property Organization (WIPO), 'Traditional Knowledge and Intellectual Property—Background Brief', available at www.wipo.int/pressroom/en/briefs/tk_ip.html.

107 Katie O'Bryan, 'The Appropriation of Indigenous Ecological Knowledge: Recent Australian Developments' (2004) 1 Macquarie Journal of International and Comparative Environmental Law (*Macquarie J Intl & Comp Envtl L)* 29, 42.

108 Libby Robin, *Defending the Little Desert: The Rise of Ecological Consciousness in Australia* (1998) 3, 141.

109 See Farrah Tomazin et al, 'Minister May Yet Give in to the Cattlemen', *The Age*, 10 June 2005, 3; see also Australian Government, Department of Environment and Heritage, *A Greater Alpine National Park* (2005) 1, 2, 9.

110 See the *National Parks Amendment (Prohibiting Cattle Grazing) Act 2015* which amended the *National Parks Act 1975* (Vic).

These examples highlight the way in which cultural values associated with significant places and conflicting protection priorities all contribute to the kaleidoscope that we comprehend as the environment. Growing acknowledgment of the fact that the environment can be conceived in terms of places of various scales and character reinforces an increasing awareness of the complexity of environmental questions. The infusion of concepts of time and space into legal considerations with growing attention to law's expression in local 'places' may see increased attention to the environment/cultural heritage interface.

3.5 Global constructs

Although generally rooted in local controversies, since the 1960s, conservation activities in Australia have also identified with a global environmental movement.[111] During the 1970s, the environmental movement that came to prominence drew on local action to secure wilderness protection or address pollution problems, but in a context where environmental activists were urged to 'think global'. Over the course of the latter half of the twentieth century, notions of the environment as a global (and globally threatened) phenomenon gained in strength, driven in part by technological advances (for instance, the Apollo 17 astronauts' photographs of Earth evoking imagery of 'a small island of life floating in an ocean of empty space'),[112] as well as the occurrence of major, transnational environmental disasters such as the Torrey Canyon oil spill in 1967, the Chernobyl reactor meltdown in 1986, the Fukushima Daiichi nuclear disaster in 2011 and the South-East Asian 'killer haze' in 2015.

Global environmental constructs, together with associated concepts of 'common' or 'shared' environmental resources,[113] paved the way for the emergence of international environmental laws designed to institute frameworks for global environmental cooperation. These frameworks impose requirements for the implementation of global environmental objectives through domestic legal measures. As a consequence, environmental law is becoming increasingly globalised (as its content is impacted and shaped by international environmental law and international institutions), and harmonised (as international rules are incorporated and shared across different domestic environmental law systems).[114]

3.5.1 Globalisation of environmental law

Increasing concern over the health of the global environment over the course of the 1960s and 1970s provided the foundation for significant globalisation of environmental

111 Robin, above n 108, 5.

112 Botkin, above n 46, 5.

113 On the concepts of 'common heritage' and 'common concern' in international environmental law, see further Ch 2.

114 Brian J Preston and Charlotte Hanson, 'The Globalisation and Harmonisation of Environmental Law: An Australian Perspective' (2013) *Asia Pacific Journal of Environmental Law* (*Asia Pacific J Envtl L*) 1.

law and policy.[115] The first major international environmental conference was convened by the United Nations General Assembly in December 1968 and took place in Stockholm in June 1972.[116] The *Stockholm Conference on the Human Environment* has been credited with 'enlarg[ing] and facilitat[ing] means toward international action previously limited by inadequate perception of environmental issues and by restrictive concepts of national sovereignty and international interest'.[117] An important contribution made by the Conference was its call for the creation of new international institutions, coordinating mechanisms and treaties in the environmental field. This saw the establishment of an environment programme under the auspices of the United Nations (UNEP) and an explosion of treaty-making activity to address issues of waste disposal, marine pollution and nature conservation. The *Stockholm Conference* also issued a soft law (ie non-binding) Declaration of 26 'common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment.'[118] As Chapter 2 discusses, Principle 21 of the *Stockholm Declaration* forms the basis for the customary international law rule that a nation state shall not cause harm to the environment of any other state, or to areas beyond the jurisdiction of any state (known as the 'global commons').[119]

Despite its emphasis on the urgent need for environmental protection, a vital aspect of the global vision put forward by the *Stockholm Conference* was the connection between environmental protection and socio-economic development. Since that time, the integration of environment and development—or 'sustainable development'—has become an increasingly important theme of international law, and the focus of successive global summits. These included the United Nations Conference on Environment and Development (UNCED) or Rio Earth Summit in 1992, which produced its own declaration of principles (the *Rio Declaration*)[120] and a detailed action plan (Agenda 21),[121] the World Summit on Sustainable Development in Johannesburg in 2002,[122] and

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115 International environmental law and its implications for Australian environmental law are discussed in greater depth in Ch 7.

116 Problems of the Human Environment, GA Res 2398 (XXIII) (1968).

117 Lynton K Caldwell, *International Environmental Policy: From the Twentieth to the Twenty-First Century* (1996) 63. See also Louis B Sohn, 'The *Stockholm Declaration on the Human Environment*' (1973) 14 *Harvard International Law Journal* (*Harv Intl LJ)* 423, 496.

118 UN Conference on the Human Environment, *Declaration of Principles (Stockholm Declaration)*, UN Doc. A./CONF.48/14/Rev. 1, preamble.

119 Customary international law derives from the practice of states where such practice stems from a belief that it is legally obligated (opinion juris). Customary international law rules are generally binding on all states regardless of whether they have expressly consented to the rule eg via ratifying a treaty containing the rule. See further Daniel Bodansky, 'Customary (and Not So Customary) International Environmental Law' (1995) 3 *Indiana Journal of Global Legal Studies* 105.

120 *Rio Declaration on Environment and Development*, UN Doc A/CONF 151/26/Rev 1.

121 Agenda 21, UN Doc A/CONF 151/26/Rev 1(vol 1) (1993).

122 *Johannesburg Declaration on Sustainable Development,* para 1 in United Nations, *Report of the World Summit on Sustainable Development*, Johannesburg, South Africa, 26 August – 4 September 2002, UN Doc A/CONF 199/20, 1. For an analysis of the limited achievements of this summit see Kevin Gray, 'World Summit on Sustainable Development: Accomplishments and New Directions?' (2003) 52 *International & Comparative Law Quarterly 256.*

the Rio+20 Summit in 2012.[123] The Rio+20 Summit initiated a process for development of an international sustainable development agenda for the period up to 2030, including the articulation of 17 Sustainable Development Goals and associated targets adopted by the United Nations in 2015.[124] Several of the Goals concern environmental issues such as water quality, waste, climate change, marine pollution and biodiversity loss. Like the *Stockholm Declaration*, these subsequent soft law international instruments—particularly the *Rio Declaration*—are the source of objectives and principles that have since become a fundamental part of the architecture of environmental law, as we discuss further in Chapter 2.

Also contributing to the globalisation of environmental law is the large number of environmental treaties that have been concluded since the *Stockholm Declaration*. Many environmental treaties are multilateral environmental agreements (MEAs) with significant (sometimes universal) state participation covering broad environmental sectors. Australia is a party to over 40 MEAs,[125] including major treaties, such as the 1972 *World Heritage Convention*; the 1992 *United Nations Framework Convention on Climate Change* (UNFCCC), its 1997 *Kyoto Protocol* and the 2015 *Paris Agreement*; the 1992 *Convention on Biological Diversity*; the 1985 *Vienna Convention for the Protection of the Ozone Layer* and its 1987 *Montreal Protocol*; and the 2001 *Stockholm Convention on Persistent Organic Pollutants*. As we discuss further in Chapter 7, these treaties often contain detailed requirements that must be implemented domestically and set up international bodies with powers to review state parties' implementation and compliance.

Today, impetus for the globalisation of environmental law increasingly comes from sectors outside of the traditional environmental sphere, such as human rights or international economic law. The liberalisation of trade and capital flows, under the auspices of international institutions like the World Trade Organization (WTO) or as a result of regional or bilateral free trade and investment agreements, is also bringing about a reconfiguration of understandings of the environment and the source of environmental threats. In addition, domestic environmental law and policy measures have growing exposure to scrutiny from a range of international bodies, including the WTO dispute settlement system, investor–state arbitration, expert review teams such as those under the 2015 *Paris Climate Agreement*, and human rights committees. Resistance to such international interventions in domestic policy, coupled with a growing recognition of the need for a more decentralised or 'polycentric' approach to deal with all aspects of complex global problems, has prompted a 'paradoxical rediscovery of the local' in

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123 Laura Horn, 'Rio+20 United Nations Conference on Sustainable Development: Is This the Future We Want?' (2013) 9(1) *Macquarie J Intl & Comp Envtl L* 18.

124 UNGA Res 70/1 (2015), *Transforming Our World: The 2030 Agenda for Sustainable Development*. See further Tim Stephens and Ed Couzens, 'The 2030 Agenda for Sustainable Development' (2016) 19 *Asia Pacific J Envtl L*, 19, 1.

125 Jacqueline Peel and Tim Stephens, 'Australia and International Environmental Law' in Donald Rothwell and Emily Crawford (eds), *International Law in Australia*, (3rd ed, 2017) 457.

many international environmental forums,[126] and greater attention to issues of domestic implementation and compliance with international obligations relating to the environment.

3.5.2 Harmonisation of environmental law

The intensification of international activity dealing with the environment has generally meant a growing role for international law in shaping domestic environmental regulation.[127] Successive Australian governments have taken a strong interest in international environmental law and policy, with particularly active participation in areas concerned with the conservation of marine living resources, marine pollution, Antarctica (given Australia's claim to part of this territory) and processes of desertification.[128] As a 'middle power' in international relations terms, Australia in the past has generally enjoyed a reputation as an 'honest broker' in international environmental negotiations (although more recent actions in the sphere of climate negotiations have tarnished that reputation).[129]

Where states accept international obligations relating to the environment—whether those obligations stem from treaties or customary international law—they bear a responsibility, by virtue of their membership of the international community, to comply with those obligations vis-à-vis other countries. As noted above, state compliance with those obligations may be subject to international review processes, and other states may also seek to enforce obligations in proceedings before international courts and tribunals, such as the International Court of Justice (ICJ). Indeed, Australia has been an active participant in international environmental dispute settlement—both as applicant and respondent—in cases such as *Nuclear Tests* and *Nauru Phosphate Lands* (before the ICJ), the *Southern Bluefin Tuna* case (before the International Tribunal for the Law of the Sea) and, most recently the *Antarctic Whaling* case (before the ICJ).[130]

As a matter of domestic law for many countries, the existence of international environmental obligations does not automatically usurp the role of domestic legal processes in favour of international ones. In Australia, which follows the tradition of other common law countries, international legal requirements only form part of Australian law when incorporated via domestic law-making processes.[131] As we discuss further in Chapter 7, most commonly, this is achieved through the enactment of implementing legislation, although Australian courts may also draw on international law for the purposes

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126 Marybeth Martello and Sheila Jasanoff, 'Introduction: Globalization and Environmental Governance' in Sheila Jasanoff and Marybeth Martello (eds), *Earthly Politics: Local and Global in Environmental Governance* (2004) 1, 7.

127 Douglas Fisher, 'The Impact of International Law upon the Australian Environmental Legal System' (1999) 16 *EPLJ* 372.

128 Donald R Rothwell and Ben Boer, 'From the Franklin to Berlin: The Internationalisation of Australian Environmental Law and Policy' (1995) 17 *Sydney Law Review* (*Syd LR)* 242.

129 Graeme Aplin, *Australians and Their Environment: An Introduction to Environmental Studies* (2002) 183.

130 Tim Stephens, *International Courts and Environmental Protection* (2009); Tim Stephens, 'After the Storm: The Whaling in the Antarctic Case and the Australian Whale Sanctuary' (2014) 31(6) *EPLJ* 459.

131 *Minister for Immigration and Ethic Affairs v Teoh* (1995) 183 CLR 273, 286–7 (Mason CJ and Deane J).

of statutory interpretation or as a legitimate influence on the development of the judge-made common law.

Harmonisation of environmental law occurs not only through the incorporation of international law into domestic law but also 'through cross-fertilisation of laws, policies and practices between countries.'[132] This process may be facilitated by international agreements (such as free trade treaties) or international institutions (such as the Organisation for Economic Co-operation and Development—OECD—whose role in disseminating the polluter pays principle is discussed in Chapter 2). Environmental impact assessment (EIA) is a good example of an environmental law mechanism that originated in the US *National Environmental Policy Act* of 1969 but which now forms part of the environmental law of nations worldwide, including many developing countries.[133] EIA has also been adopted by international institutions, such as the World Bank,[134] and in its *Pulp Mills* decision in 2010, the ICJ recognised that EIA is:

> a practice, which in recent years has gained so much acceptance among States that it may now be considered a requirement under general international law to undertake an environmental impact assessment where there is a risk that the proposed industrial activity may have a significant adverse impact in a transboundary context, in particular, on a shared resource.[135]

4 Law and institutions

The study of environmental law requires both an appreciation of what is encompassed by 'the environment' and of the nature of law, legal process and institutions in an environmental context. Typically, environmental law, especially targeted environmental legislation, is the outcome of a political process. Political agitation and lobbying by various interest groups will result in pressures upon governments to introduce laws that reflect a particular political perspective or stakeholder interest. For example, the introduction of laws to control uranium mining in the 1970s within Australia was clearly influenced by strong political agitation and campaigning against nuclear energy, and the perceived dangers associated with its use.[136]

Political processes continue to exert an important influence over the development of environmental law and governance structures, albeit that the role of these processes is increasingly conceptualised within a more comprehensive perspective that recognises the myriad factors shaping environmental regulation.[137] In environmental politics, discourse

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132 Preston and Hanson, above n 114, 25.

133 Neil Craik, *The International Law of Environmental Impact Assessment: Process, Substance and Integration* (2011).

134 Operational Policy 4.01—Environment Assessment (1999) and Bank Procedures 4.01 (1999).

135 *Pulp Mills on the River Uruguay (Argentina v Uruguay)*, ICJ Reports 2010, 14, 73.

136 See eg *Environment Protection (Nuclear Codes) Act 1978* (Cth), *Nuclear Activities Regulations Act 1978* (WA), *Uranium Mining and Nuclear Facilities (Prohibitions Act) 1986* (NSW).

137 Benjamin J Richardson and Stepan Wood (eds), *Environmental Law for Sustainability: A Reader* (2006) 229.

analysis is used to examine political influences upon environmental governance and law.[138] Such analyses centre on industrialism as the overarching organising paradigm that subsumes a series of competing political ideologies, including liberalism, neo-liberalism, socialism and authoritarianism.[139] In this manner, environmental political discourses take as their point of departure the existence of industrial society and a growth or capitalist economy.[140]

Equally, most environmental laws are situated within the overarching conception of a liberal society and its associated institutions of government and law in Western democratic nations. Despite significant variation in political positions as to the extent of the respective roles of the state and civil society, the dominant paradigm in Australia and other Western countries is towards an ever-declining role for government. Contestation over the appropriate functions of the state and the degree to which the state should 'intervene' or take on specific responsibilities such as environmental protection are implicit to many environmental conflicts (see Chapter 3 where, for example, public interest litigation is often argued to fill a 'gap' where government is seen as not adequately fulfilling those responsibilities).[141]

The following sections consider how law is made and administered through various institutions, including parliaments, the executive (or Crown), and the courts; and how law takes effect in terms of influencing human behaviours with environmental impact.

4.1 Legal process and institutions

Ultimately, all environmental laws and governance models have a relationship to a legal system. In modern Western democracies, this necessarily imports the concept of the governing state.[142] Definitions of the state vary but typically comprise elements such as: the representative governments of the Australian Commonwealth, states and territories, as well as local government; the courts and tribunals of the various jurisdictions; government departments, agencies and semi-government authorities and corporations; together with a range of enforcement agencies such as the police.[143] In many democratic countries, including Australia, the scope of governmental power is framed within a constitution that prescribes various functions for governments and the legal system, and which places particular limits on the exercise of government (executive) power.

Central to the perceived legitimacy of the governing state is the idea that laws are made under the auspices of a duly constituted authority.[144] Under democratic theories of

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138 See, Peter Christoff, 'Green Governance and the Green State: Capacity Building as a Political Project' in Robert Paehlk and Douglas Torgenson (eds), *Managing Leviathan: Environmental Politics and the Administrative State* (2005) 289.

139 John Dryzek, *The Politics of the Earth* (2005) 13.

140 Ibid.

141 Sophie Riley, 'From Smart to Unsmart Regulation: Undermining the Success of Public Interest Litigation' (2017) 34 *EPLJ* 299.

142 See Ramsay and Rowe, above n 63, 145.

143 Gerry Bates, 'Federal Government and Environment Protection', in *Environmental Law in Australia* (9th ed, 2016).

144 See generally Robert French et al (eds), *Reflections on the Australian Constitution* (2003).

the state, sovereignty resides 'in the people' who exercise this sovereignty through duly elected representatives in the parliament as the supreme law-making authority. In turn, the principle of 'representative government' assumes the capacity for parliamentary law making. Generally, law-making powers will be vested in the government, or governmental authorities and semi-governmental entities, to which power has been delegated 'from the people' in various ways.

Australia's legal system was essentially inherited from the British colonial empire, albeit with an initial failure to recognise the pre-existing law of Indigenous inhabitants upon acquisition of British sovereignty.[145] Accordingly, Indigenous customary law plays only a limited role in the Australian legal system, with the basic fabric of the legal system adopted from Britain.[146] The British model was one of an overarching constitutional monarchy. When Australia was first colonised, however, the Letters Patent (instructions issued to the governors from the British Government) conferred significant powers on the colonial governors.[147] Gradually, as the colonies gained more substantial democratic institutions there was a progressive move to grant greater independence and varying levels of responsible government to the colonies, and then the federated nation of Australia emerged after 1901.[148]

Democratic sovereignty and parliamentary law making is incorporated into a system within Australia that preserves elements of the earlier monarchical system. Hence, the 'Crown' retains various functions that originally derived from that earlier era. The Crown, as a legal entity, is not strictly identical with the government, and it might be described as the formal head of state as represented by the Governor-General at Commonwealth level and governors at state level but it also incorporates the organisations that comprise the government. The Crown and its agencies in the Commonwealth and state and territory jurisdictions manage land, waters, resources and ecosystems 'in the public interest' on behalf of the Australian community.[149] In this way, the Crown has a significant environmental function in our society. Land and resources, such as minerals, are 'vested' in the Crown, which confers ownership;[150] a position formalised in a range of statutes.[151]

The Crown may also reserve land for a variety of public purposes. In this case, the land will usually vest in a Crown instrumentality, which will hold the land and manage

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145 *Mabo v Queensland [No 2]* 175 CLR 1.

146 Catriona Cook et al, *Laying Down the Law* (10th ed, 2017) Ch 4. Note recent attempts to provide for Aboriginal people's recognition in the Constitution and the Uluru Statement from the Heart, which seeks a voice for indigenous peoples in the parliamentary process: https://www.referendumcouncil.org.au/sites/default/files/2017-05/Uluru_Statement_From_The_Heart_0.PDF.

147 For a discussion of Letters Patent see *Fejo v Northern Territory* (1998) 195 CLR 96.

148 The *Australia Act 1986* (Cth) formalised this trend to independence as a nation.

149 Ramsay and Rowe, above n 63, 177–92.

150 *Yanner v Eaton* (1999) 201 CLR 351, where the High Court found that Crown vesting created a special form of Crown 'ownership' of fauna that was to be distinguished from beneficial ownership (private property). The nature of the Crown's 'ownership' of resources remains contested although see *ICM v Commonwealth* (2009) 240 CLR 140.

151 See eg *Mining Act* 1978 (WA) s 9(1)(a): 'all gold, silver, and any other precious metal existing in its natural condition on or below the surface of any land in the State whether alienated or not alienated from the Crown and if alienated whenever alienated, is the property of the Crown'.

it for the specific purpose for which it was reserved.[152] Typically, national parks and other conservation areas will take effect over Crown lands. Australia thus retains large areas of the continent as Crown lands,[153] and asserts varying levels of sovereignty in the offshore, giving to the government large responsibilities for environmental protection and management. Many other countries do not have such an extensive area of public lands and public control over resources. However, the use, exploitation and management of Crown lands is an area of government policy that has been controversial at times with disputes over the logging of state forests,[154] the grant of mining tenements,[155] as well as dam building and other infrastructure developments.[156]

While the Crown *per se* is an important, if often overlooked, actor in the environmental sphere, generally we are more familiar with the other institutions based on a constitutional monarchy model.[157] The *Australian Constitution* is underpinned by a theory known as the separation of powers,[158] which posits three arms of government—the legislature, the executive and the judiciary—that operate under a system of reciprocal checks and balances to ensure that the governing state adheres to the rule of law.[159] As a representative democracy, Australian legislatures, made up of the elected representatives of the people, are held to give effect to the 'popular will'.[160] On this basis we might expect the laws enacted by parliaments to reflect the views of the majority of Australians, although in reality a more complex and dynamic interaction occurs between governments, policy development and the electorate.

In Australia, as with many other Western countries, the model of a governing state and its law-making capacity is complicated by a series of intersecting governmental institutions, powers and authorities at various levels. Australia is a federation, meaning that governance functions are shared between a federal (Commonwealth) government, and state and territory governments. At the international level, the Commonwealth Government represents Australia in its relationship with other countries. Within Australia, the Commonwealth Government also plays a major role in the internal governance of the

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152 Crown lands are governed by state and territory legislation. See eg *Land Act 1958* (Vic); *Land Act 1994* (Qld), s 199; *Land (Planning and Environment) Act 1991* (ACT); *Crown Lands Act 1989* (NSW); *Crown Lands Act 1993* (NT); *Pastoral Lands Act 1993* (NT); *Crown Lands Act 1929* (SA); *Crown Lands Act 1986* (Tas).

153 *Wik Peoples v Queensland* (1996) 187 CLR 1.

154 *See Brown v Forestry Tasmania (No 4)* (2006) 157 FCR 1; *Forestry Tasmania v Brown* (2007) 167 FCR 34.

155 *Newcrest Mining (WA) Ltd v Commonwealth* (1993) 190 CLR 513.

156 For a challenge to freeway development see *Mees v Minister for the Environment and Heritage* [2005] FCAFC 5.

157 For a discussion of the evolution of constitutional power in Australia see Anthony Dillon, 'A Turtle by Any Other Name: The Legal Basis of the *Australian Constitution*' (2001) *Federal Law Review* (*FL Rev*) 10.

158 As Australia also inherited the Westminster system of government from the British, the separation of powers is not strict. Instead, there is a significant degree of overlap between the legislative and executive branches with some personnel serving in both bodies.

159 The rule of law is a complex and much-debated notion. Essentially, it refers to the idea that governments must act in accordance with the Constitution and law, and that there are legal and procedural guarantees to prevent an abuse of power by governments: see further Stephen Bottomley and Simon Bronitt, *Law in Contex*t (3rd ed, 2003) 60.

160 Helen Irving, 'Changing Law by Parliament' (2005) 17 *Legal Date* 1, 3.

country, although various areas of responsibility are divided between the Commonwealth, state, territory and local governments.

Section 51 of the *Australian Constitution* sets out the heads of power (subjects) about which the Commonwealth can make laws. These enumerated areas of law making, discussed further in Chapter 3, include external affairs, trade and commerce, corporations, defence and immigration. By contrast, state governments under their respective constitutions have plenary law-making powers.[161] Where these powers overlap with those of the Commonwealth, then pursuant to s 109 of the *Constitution*, the Commonwealth laws prevail.[162] However, legal and constitutional delineation of discrete areas of environmental legislative and regulatory competence for Commonwealth and state governments represents an artificially imposed division that does not always reflect the underlying holistic nature of the environment. Indeed, some environmentalists call for bioregionalism to be adopted as the jurisdictional basis for environmental management.

Legislation (Acts of Parliament), typically referred to as statutory law, forms one of the two main sources of law in the Australian legal system (the other being judge-made law, also known as the common law).[163] Generally speaking, legislation aims to put into effect government policies or to effect reform of the existing common law. Parliamentary law making has rapidly outstripped common law rules as the primary source of environmental law although judges retain an important role in interpreting and applying legislation, and in reviewing executive decision making. To be valid law, all Acts of Parliament must pass through an identified law-making process.[164]

Within Australia there are hundreds of statutes that could be described as environmental, either in terms of the subject matter of the enactment or their indirect effect upon activities that impact the environment.[165] In addition, many areas of general law that underpin the legal system, such as torts, criminal law, administrative law, property law and specialised areas such as constitutional law, remain highly relevant to the operation of environmental law. Environmental legislation in this manner does not form a single cohesive body of law and principle as do many other areas of law with a primarily statutory basis, such as corporations law. This diversity reflects the scope of the environment, its integration with many social and economic activities and the rapidity with which issues increase in prominence as an object of environmental regulation.

In a democratic system such as Australia, the other principal source of law making besides parliaments at the federal, state and territory levels is the judicial system. Historically, the courts were the main focus for the development of the law, which largely occurred on an incremental basis. As a source of environmental law and governance

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161 These powers are preserved by s 107 of the *Constitution*.

162 Constitutional constraints on environmental law making are discussed in Ch 3.

163 Irving, above n 160.

164 For a typical example see House of Representatives Infosheet, 'Making Laws', No 7, Parliament of Australia, House of Representatives (Nov 2016), www.aph.gov.au/About_Parliament/House_of_Representatives/Powers_practice_and_procedure/00_-_Infosheets/Infosheet_7_-_Making_laws.

165 Ian Thomas, *Environmental Policy: Australian Practice in the Context of Theory* (2007).

arrangements, common law (judge-made) rules have declined in importance over time as a form of environmental regulation. Nonetheless, the courts retain a major role in environmental governance through interpreting and applying statutory law and, indeed, in developing new directions for environmental law on a case-by-case basis. While the courts operate within particular constraints set by the institutional structures of judicial hierarchies and the doctrine of precedent,[166] it is now widely accepted that courts do make law in defined circumstances, as opposed to simply declaring pre-existing legal principles.[167]

Further, judges have the capacity to consider how particular legislation applies in an individual circumstance, which allows laws to be moulded to different situations and to balance competing interests. Enhanced awareness of environmental issues within the community has resulted in judicial acceptance of the need to consider ecological values in giving effect to the public interest.[168] In deciding cases before them, judges may be obliged to apply and extend the law to novel circumstances; a situation that often arises in environmental matters. Judges thus can extend and build upon existing legal precedents, so developing a body of common law principles for the environment.[169] In this regard, courts remain significant institutional actors in the environmental field, although there are widely acknowledged difficulties in pursuing environmental action and legal change through the general court system.[170] Typically, courts have been most adventurous in developing the procedural aspects of environmental law; greater reluctance exists with respect to extension of substantive law and principles,[171] with notable exceptions being the precautionary principle[172] and (albeit to a lesser extent) the umbrella concept of ecologically sustainable development.[173]

4.2 Form and functions

In modern Western societies, there are a wide range of influences on the development of law and the overall character of the prevailing legal system. Clearly, the political system and governance forms that are adopted in a country will influence the types and extent of

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166 Courts operate within a hierarchical structure whereby the decisions of courts lower in the hierarchy can be reviewed in given circumstances, typically on questions of law rather than factual evidence. The doctrine of precedent is a guiding principle for judges in determining the application of case law rules to the situation in the instant case.

167 For a discussion see Sir Anthony Mason, 'Legislative and Judicial Law-Making: Can We Locate an Identifiable Boundary?' (2003) 24 *Adelaide Law Review* (Adel L Rev) 15.

168 See Justice Brian Preston, 'The Role of Public Interest Environmental Litigation' (2006) 23 *EPLJ* 337.

169 Ibid 342.

170 For an example of the benefits and limitations of litigation in the field of climate change regulation see Jacqueline Peel, 'The Role of Climate Change Litigation in Australia's Response to Global Warming' (2007) 24 *EPLJ* 90. But for an example of barriers to environmental litigation, see *Lock the Gate Alliance Ltd v Chief Executive under the Environmental Protection Act* 1994 [2018] QSC 22 (22 February 2018).

171 Preston above n 168.

172 See further the discussion of judicial consideration of the precautionary principle in Ch 6.

173 Jacqueline Peel, 'Ecologically Sustainable Development: More than Mere Lip Service?' (2008) 12 *Australasian Journal of Natural Resources Law and Policy* 1.

environmental law and regulation. Other important factors shaping legal rules range from social and cultural factors to moral teachings and the values of a given society, as well as the power of various stakeholders and interest groups in influencing governments.[174] That said, the link between the law and any particular set of values (including values of environmental preservation and ecological sustainability) may often be tenuous and indirect.

Typically, the role of law in environmental governance has been to facilitate social change by influencing the decisions and behaviour of individuals, governments, businesses, organisations and the community to embrace more sustainable forms of living. Taking a very general perspective, the manner in which legal rules are used to achieve social reform is by setting standards for the behaviour of various actors and agents, and providing a range of sanctions and incentives to ensure compliance with that desired behaviour. Although this is only one possible interpretation of how law operates in a complex society, nonetheless many people typically associate law with the idea of rule setting, which, in a contemporary context, operates across multiple governance levels from the local to the global. From this perspective, law is about giving effect to (evolving) societal norms. These norms may derive from formal written sources, such as international treaties, national statutes and case-law decisions made by judges within the court hierarchies, or from customary practices (such as Aboriginal customary law on country).

In common law countries such as Australia, criminal law or tort law (which is the civil action to compensate for wrongs or harms which are done) was the archetype for much early environmental law, and these models continue to exercise a strong influence over environmental legislation. Criminal law and tort law employ a relatively straightforward governance model that sets standards of human behaviour and then imposes punishments of various types and levels of severity for those individuals who transgress the standards that have been set. Early pollution laws, which were developed to address environmental problems such as point-source air and water pollution, are a good example of this model, albeit that most of the punishments were civil rather than criminal in character.[175] Even today many environmental statutes continue to employ a form of criminal or civil penalty for transgressions of set standards (discussed further in Chapter 5). However, it is increasingly recognised that there is a variety of means for achieving policy and social outcomes which can rely, to a greater or lesser extent, upon a specific legal rule-setting approach. In this regard, the advent of market-based approaches and other complementary policy tools (discussed further in Chapter 4) represents a move away from a model of the state and formal laws as the major driver of social change and reform in the environmental sphere.

Following colonisation in the eighteenth century, the traditional British common law framework was transferred to Australia as the legal foundation for governing the natural world. This framework is based primarily on property concepts, the protection of individual

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174 Stephen Bottomley and Simon Bronnitt, *Law in Context* (3rd ed 2003), ch 8.

175 See eg *Marine Pollution Act 2012* (NSW) pts 3, 4 and, on enforcement, pts 15, 19. See *also Environment Protection Act 1970* (Vic) pts 5, 6 on discharges into the air or water.

rights and the delineation of interpersonal obligations, underpinned by a philosophy that land is basically in private control.[176] In this paradigm, environmental protection may be possible, but only as an indirect consequence of safeguarding and enforcing the rights of private property owners with respect to access to natural resources or prevention of interference with their enjoyment of property. The application of common law rules to safeguard natural resources is often argued to promote 'decentralized, atomistic, self-interested' decision-making rather than collective action to protect the environment in the public interest.[177]

Over time, the common law proved substantially unable to provide effective legal protection for the environment.[178] The pre-eminence attached to the human subject that is implicit in common law frameworks hindered effective protection for the environment where such protection was not explicitly tied to individual economic interests.[179] Legal protection for the natural world thus came to be viewed as something that could be more effectively provided under statute.[180] Evolution of the approach taken to pollution provides a good illustration of this shift. Under a common law framework, pollution (for example of the air or a water body) is actionable if it adversely affects the property rights of a landowner but is more difficult to address if harm is caused to public resources. In the late 1960s, the detection of dangerous levels of pollutants in some Western nations' rivers forced a reconsideration of the common law approach in favour of government intervention to control pollution. This was achieved by legislation placing stringent limits on the amount of pollution emitted by major stationary polluters. As we discuss further in Chapter 4, statutory measures of this kind—often called direct regulation—remain at the heart of environmental law in Australia. Nonetheless, recent trends to reduce the level of state involvement in environmental protection in some jurisdictions have reinvigorated the scope and use of common law causes of action such as nuisance.[181] These shifts underscore the dynamic nature of environmental law and its interrelationship with changing conceptions of the governing state.

5 Framing the environment

As the discussion in the previous sections highlights, the meaning of 'environment', and the values underpinning environmental law, are not fixed and are frequently contested. Consequently, how environmental issues are 'framed' in environmental law, and which of multiple possible frames is selected, will often determine the regulatory or

176 For discussion see Nicole Graham, *Lawscape: Property, Environment, Law* (2011).

177 Joseph Sax, quoted in Ramsay and Rowe, above n 63, 124.

178 In the United States, the public trust doctrine has proven efficacious in environmental protection. In Australia, however, the courts have repeatedly rejected the application of the public trust doctrine: see eg *Kent v Johnson* (1973) 21 FLR 177. See further Ch 2.

179 This is highlighted by the discussion of rules of standing in Ch 3.

180 David A Westbrook, 'Liberal Environmental Jurisprudence' (1994) 24 (*University of California Davis Law Review* (*UC Davis Law Review*) 619, 676.

181 This has particularly occurred in litigation addressing climate change: see further Jacqueline Peel and Hari M Osofsky, *Climate Change Litigation: Regulatory Pathways to Cleaner Energy* (2015).

decision-making approach adopted. Law frames environmental law through a number of different processes. Legislative definitions and the judgments of courts are obviously critical.[182] Broader instruments of legal governance structures, such as constitutional provisions or international agreements, may also delineate the relevant scale at which environmental issues are framed, whether this is local, national or global. This becomes important in environmental decision-making processes, such as environmental impact assessment, which seek to evaluate the 'significance' of predicted environmental impacts.

The following sections consider how the environment has been framed in judicial decisions and legislation, including international 'legislative' instruments such as treaties. A general shift is perceptible from earlier legal treatment of the environment as a series of largely self-contained sectors (water, air, soil, forests, etc) to integrated approaches that attempt to deal with the environment as a whole. These legal notions of environment delimit the scope of environmental law and determine the 'relevant environment' to be considered in any particular decision-making context.

5.1 Judicial framing

Most environmental law stems from statutory sources, and most statutes dealing with environmental and natural resource issues provide definitions of the environment or natural resource with which they are concerned. This was not the case for some earlier legislation, leaving it up to the courts to formulate appropriate definitions of the environment for legal purposes. Since law is a language-based discipline that nonetheless purports to have an objective content, standard legal techniques for understanding its subject matter often resort to the ordinary meaning of words, sourced in authoritative texts like dictionaries. This was the approach taken, for example, by the High Court in the case of *R v Murphy*, where the court was asked to consider the meaning of the word 'environment' in the *Local Government Act 1936* (Qld), in the absence of a definition in the legislation itself.[183]

The *Murphy* case concerned the compensation payable for the resumption of land near the Mon Repos turtle rookery in Bargara, Queensland, the value of which depended upon the land's rezoning potential. A relevant consideration for the local council in considering any rezoning application under the Act was the potential for the proposal to have 'any deleterious effect on the environment'.[184] In Queensland, a majority of the Full Court of the Supreme Court had ruled that, in valuing the land, the prospect of rezoning should have been considered 'without regard for the possible impact of a subdivision … upon the turtle population'.[185] In reaching this conclusion, the Full Court apparently distinguished between natural and physical resources such as air, water, soils, forests and minerals,

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182 Fisher, above n 5, 352.

183 *R v* Murphy (1990) 71 LGRA 1.

184 *Local Government Act 1936* (Qld), s 32A(1) (this legislation has since been repealed).

185 *Murphy v The Queen* (1989) 68 LGRA 286, 294.

and 'the well-being of a particular species', treating only the former as environmental matters.[186] There is more than a little of the flavour of common law property notions in this understanding of the environment, as moveable resources, like wildlife, cannot traditionally be owned or possessed at common law.[187]

By contrast, the High Court in *Murphy* saw no reason to depart from the ordinary meaning of the word 'environment' in determining the scope of the legislative requirements under Queensland's *Local Government Act*. 'Environment', the court held, signified 'that which surrounds', such that '[w]hat constitutes the relevant environment must be ascertained by reference to the person, object or group surrounded or affected'.[188] In the case of the land at issue in *Murphy*, it was surrounded by a coastal strip that turtles used as a rookery. Hence, the High Court found, 'any reduction in the number of turtles using that land as their rookery or in the number of surviving hatchlings might properly be thought to constitute a deleterious impact on the environment of the resumed land'.[189]

The High Court's definition was referenced by Justice Osborn of the Victorian Supreme Court in the 2010 case of *Friends of Mallacoota Inc v Minister for Planning* in interpreting the meaning of the undefined term 'environment' in the Victorian EIA legislation, the *Environmental Effects Act 1978* (Vic) (EE Act).[190] The case concerned a local council's proposal to replace an existing boat ramp in Mallacoota that provided access to the ocean at Bastion Point. Preparation of an environmental effects statement under the EE Act was requested by the Minister for Planning, which attracted a large number of public submissions mostly opposed to the new boat ramp. Challenging the Minister's decision to approve the boat ramp proposal, local community members argued that the Minister had taken into account irrelevant social factors, such as the safety of swimmers and other beach users in proximity to boating traffic near the current ramp location, in assessing the 'environmental effects' of the project under the EE Act. The objectors argued that the Minister's assessment should have been limited to effects on the physical environment. However, citing the *Murphy* case, Justice Osborn ruled that 'as a matter of ordinary language the word "environment" extends beyond the physical features of the surroundings of proposed works to include the social environment' such that 'the notion of environment comprehended by the EE Act includes the conditions under which local people and visitors would use Bastion Point.'[191] His Honour also referred to other legislative and policy developments that supported an argument that 'environmental effects' should be interpreted flexibly and in a wider fashion than the noun 'environment'.[192]

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186 Ibid 293–4.
187 Bates, above n 143.
188 *R v Murphy* (1990) 71 LGRA 1, 6–7.
189 *R v Murphy* (1990) 71 LGRA 1, 7.
190 [2010] VSC 222.
191 [2010] VSC 222, [62], [65].
192 [2010] VSC 222, [67]–[79].

5.2 Legislative framing

Whereas the High Court employed a broad framing of 'environs' in the *Murphy* case, early environmental statutes that also spoke of the environment in terms of surroundings tended to locate human beings (often only man) as a central reference point. For example, the *Environment Protection Act 1970* (Vic) describes the environment as 'the physical factors of the surroundings of human beings including the land, waters, atmosphere, climate, sound, odours, tastes, the biological factors of animals and plants and the social factor of aesthetics'.[193] Even more succinct is the *Environmental Planning and Assessment Act 1979* (NSW), which provides that the environment 'includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings'.[194] The implication that may be drawn from these definitions is that the environment that is to be valued (and hence safeguarded from pollution or developmental impact) is only that which has utility for humans, whether for the purposes of direct instrumental use, as a provider of ecosystem services, or for aesthetic reasons.[195]

The focus on the surroundings of human beings also suggests a separation of humans from the environment that comports with the dominant Western philosophies about nature discussed earlier in the chapter. While the influence of ecological science and organic philosophical views has led to a greater focus on interconnections between different components of the environment, the law often echoes ecology's own prejudices in disregarding all but natural ecosystems. For example, the definition of 'environment' in the *Environmental Management and Pollution Control Act 1994* (Tas) largely maintains the distinction between the environment, on the one hand, and human communities on the other. The Act explains that environment means:

> components of the earth, including—
>
> **(a)** land, air and water; and
>
> **(b)** any organic matter and inorganic matter and any living organism; and
>
> **(c)** human-made or modified structures and areas
>
> —and includes interacting natural ecosystems that include components referred to in paragraph (a) or (b).[196]

Nonetheless, the reference to 'human-made or modified structures and areas' in Tasmanian and other similar legislative definitions of the environment signals another important shift in environmental law to cover aspects of the built or human-modified environment in addition to natural areas. This is in line with the view that aspects of the

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193 *Environment Protection Act 1970* (Vic), s 4(1). This definition sits alongside a much broader series of 'principles' that integrate social and economic aspects as well as physical factors. See eg s 1B (principle of integration of economic, social and environmental considerations).

194 *Environment Protection Act 1970* (Vic), s 4(1).

195 Douglas Fisher, *Australian Environmental Law: Norms, Principles and Rules* (2014) Part I: The normative context of environmental law, especially Chapter 1: The nature of environmental law, and Chapter 2: The ethical dilemmas of environmental law.

196 *Environmental Management and Pollution Control Act* 1994 s 3. Similar definitions are found in the *Protection of the Environment Operations Act 1997* (NSW), sch 5; *Protection of the Environment Administration Act 1991* (NSW), s 3; and the *Environment Protection Act 1993* (SA), s 3.

social environment, including cultural heritage values, are equally deserving of protection as environmental matters. Greater integration of aspects of the social environment in legislative definitions has brought environmental law into closer contact with planning law; the legal field principally concerned with development and the spatial location of human communities. As a result, most planning schemes throughout Australia now pay attention to issues of environmental impact and nature conservation, particularly threatened species protection. Environmental laws, in turn, have taken on planning's concern with amenity, which embraces not only 'the effect of a place on the senses' (eg through emitted noises or odours) but also 'the resident's subjective perception of his locality'.[197]

An emphasis on human perception brings within the ambit of environmental law various socio-cultural factors that contribute to people's views on the pleasantness of their surroundings. A common formulation used to express this idea in legislative definitions of the environment is the inclusion of 'qualities and characteristics' of locations that contribute to their amenity, sometimes extending beyond the purely aesthetic to matters of scientific value, a place's contribution to biological diversity, or its cultural and recreational attributes.[198] Another related development is the growing emphasis on public health concerns as part of a consideration of environmental amenity.[199]

More recent definitions of 'environment' in environmental legislation purport to dissolve entirely any separation between the human and natural worlds. Acceptance of the environment as encompassing 'ecosystems and their constituent parts, including people and communities', signals the emergence of more integrated notions of environment in environmental law.[200] As a result, the focus has shifted away from distinct 'components of the earth' to 'interactions and interdependencies' between ecosystems, ecosystem constituents and their surroundings. An example of this type of legislative framing of the environment is the definition included in the federal EPBC Act, which provides:

> environment includes
>
> **(a)** ecosystems and their constituent parts, including people and communities; and
>
> **(b)** natural and physical resources; and
>
> **(c)** the qualities and characteristics of locations, places and areas; and
>
> **(d)** heritage values of places; and
>
> **(e)** the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b), (c) or (d).[201]

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197 *Broad v Brisbane City Council* [1986] 2 Qd R 317, 326 (de Jersey J).

198 For example, *Environment Protection and Biodiversity Conservation Act 1999* (Cth), s 528.

199 *Warkworth Mining Ltd v Bulga Milbrodale Progress Association Inc* [2014] NSWCA 105.

200 For example, *Environment Protection Act 1997* (ACT), s 7; *Environmental Protection Act 1994* (Qld), s 8; *Integrated Planning Act 1997* (Qld), sch 10; *Environment Act 1986* (NZ), s 2; *Resource Management Act 1991* (NZ), s 2.

201 EPBC Act, s 528. See also *Environmental Protection Act 1994* (Qld), s 8.

Similar shifts are evident in pollution control laws with a greater focus on diffuse pollution issues rather than simply 'point source' (end-of-pipe) pollution.[202]

In international environmental law, early instruments also tended to segment the environment into different components. For instance, Principle 2 of the 1972 *Stockholm Declaration* refers to the natural resources of the Earth as including 'air, water, land, flora and fauna and … natural ecosystems'. The *Stockholm Declaration* also recognises, as the Preamble makes clear, that the environment of natural resources should be distinguished from the man-made environment, which includes, in particular, the living and working environment. Those treaties that do refer to the environment and seek to include some form of working definition have tended to adopt broad definitions. As used in the 1979 *Convention on Long Range Transboundary Air Pollution*, the environment includes 'agriculture, forestry, materials, aquatic and other natural ecosystems and visibility'.[203] Under the 1992 *Watercourses Convention*, the 'environment', which is defined in terms of impacts, includes 'human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures or the interaction among these factors'.[204] The 1982 *United Nations Convention on the Law of the Sea* does not define 'marine environment', although it appears to include ecosystems, habitats, threatened or endangered species and other forms of marine life, and atmospheric pollution.[205]

The tendency in international environmental law to deal with environmental problems on a sector-by-sector and issue-by-issue basis has also resulted in the development of a number of specific legal terms that are subject to carefully negotiated definition. Examples include definitions of 'biological resources' in the *Convention on Biological Diversity*,[206] and of the 'climate system' in the UNFCCC.[207]

5.3 Determining the relevant environment

The diversity of scales at which environmental issues arise adds additional complexity to the question with which the discussion began, namely what is the environment that is the subject of legal regulation? Is there only one environment, or at least only one framing of the environment that should be privileged in policy and legal processes? Or are there in

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202 Neil Gunningham and Darren Sinclair, 'Policy Instrument Choice and Diffuse Source Pollution' (2005) 17 *JEL* 51.

203 *Convention on Long-Range Transboundary Air Pollution*, Geneva, 13 November 1979, in force 16 March 1983, 18 ILM 1442 (1979), art 7(d).

204 *Convention on the Law of Non-Navigational Uses of International Watercourses* (New York) 21 May 1997, in force 17 August 2014, 36 ILM 700 (1997), art 1(2).

205 *United Nations Convention on the Law of the Sea* (Montego Bay) 10 December 1982, in force 16 November 1994, 21 ILM 1261 (1982), art 194(3)(a) and (5).

206 '[G]enetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity': *Convention on Biological Diversity*, 5 June 1992, entered into force 29 December 1993, 1760 UNTS 79, art 2.

207 '[T]he totality of the atmosphere, hydrosphere, biosphere and geosphere and their interactions': *United Nations Framework Convention on Climate Change*, opened for signature 9 May 1994, 1771 UNTS 107 (entered into force 21 March 1994), art 1(3).

fact many notions of environment which, in a society that aspires to democratic pluralism, should be afforded equal credence? If the situation is one of many environments deserving legal recognition, how should protection or management priorities be determined where different environmental concepts conflict with one another?

The question of whether there is one environment or many environments relevant for legal regulation is one that itself can be answered in multiple ways, depending upon the perspective adopted. On the one hand, changes in thought across many disciplinary areas have tended to converge around the identification of a single environment conceived in holistic terms, albeit comprised of multiple dynamic interconnections and elements. In this manner, the framing of environment adopted in law might be a unitary one, comprehending all life forms and ecological processes at a variety of scales. This is certainly the idea of environment to which some environmental statutes, like the EPBC Act, seem to aspire. A sense of interconnection has also been an important driver in changing legal and regulatory responses to the environment from a single-issue focus, such as point-source pollution governed by a particular piece of legislation, to more complex interactions, such as trade–environment linkages operating across many countries and diverse institutions.

Alternatively, it is possible to conceive of multilayered, multidimensional (and potentially mutually exclusive) environments that intersect and overlap to make up a unitary phenomenon. These environments might range from the local to the national, to the regional and global scale; from a single species to world climate trends; from indigenous cultural heritage to partnerships between environmental non-governmental organisations and multinational businesses to reduce industrial waste. As environmental concerns are conceived at more and more expansive scales it becomes difficult to see how and, indeed, whether, all interests will converge to focus on a single goal. An example is provided by disputes over wind farm developments in Australia, and many other countries, that often see local amenity and health concerns pitted against global framings of the climate change problem and the need for an economy-wide transition in energy sources. While international and national laws may emphasise the latter goals, decision making on wind farm developments is often made at a local or state level where community framings of the relevant environmental issues may be accorded more weight.[208]

Given that 'the environment' as defined in case law and legislation is often a broad and flexible concept,[209] a more critical question for administrators and regulators is often not the extent of environmental notions contemplated by environmental law, but rather what are considered to be the most relevant or important aspects of the environment

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208 See eg *Hislop v Glenelg SC*, Unreported, Victorian Civil and Administrative Tribunal, Tribunal Application No 1997/88762 cf *Thackeray v Shire of South Gippsland* [2001] VCAT 739. Both cases are discussed in Alexandra Wawryk, 'Planning for Wind Energy: Controversy over Wind Farms in Coastal Victoria' (2004) 9 *Australasian J Nat Res L & Policy* 103. Cf *Taralga Landscape Guardians Inc v Minister for Planning* (2007) 161 LGERA 1, 3.

209 *Phosphate Cooperative Co of Australia Ltd v Environment Protection Agency* (1977) 138 CLR 134, 146–7 (Aickin J) remarking that a legislative direction to avoid alteration of the environment is potentially wide enough to catch smoking, or even breathing, seemingly making the carrying out of these activities subject to the need for a licence.

for the purpose of decision making. This question was considered by the New South Wales Land and Environment Court in the case of *Bailey v Forestry Commission*, which pointed out that such judgments require a relational assessment 'gauged against the nature and scale of the relevant environment'.[210] As disputes over the climate change contribution of proposed coal mines have illustrated, a development's impacts may be significant where assessed against a smaller-scale environment (eg a state) rather than a larger-scale one (eg the Earth as a whole).[211] On this point, the court in *Bailey* found that 'what is the environment for relevant purposes with respect to the proposed activity' is 'question of fact' for case-by-case determination. Nevertheless, it noted that it had generally 'rejected claims that the relevant environment of a particular activity should be regarded as the whole of the state or region in order to justify a determination of an "insignificant" likely impact.'[212]

A similar logic appeared to underlie the decision of the Western Australian Supreme Court in *Coastal Waters Alliance v EPA*.[213] There, the Full Court found that the flow-on economic consequences from the curtailment of certain dredging operations fell outside the scope of relevant environmental factors. Even though man's socio-economic surroundings were included as part of the definition of 'environment' in the Western Australian legislation, the court found that economic impacts were not sufficiently related to the 'physical area' involved in the proposed dredging.[214] This decision also suggests that the persistence of a notion of 'environment' in environmental law is 'essentially locational' in character.[215] However, as the Full Federal Court demonstrated in the case of *Nathan Dam* (discussed further in Chapter 4), a 'locational' focus need not necessarily mean a narrowly circumscribed notion of environmental protection if impacts on protected areas are taken to encompass those indirectly connected with a given activity.[216] The Court held that a proposed dam on an inland river system would pose a threat to the marine-based Great Barrier Reef World Heritage Area because run-off from agricultural irrigation facilitated by the dam would eventually flow out onto the reef, thereby causing harm to corals and fish. Nonetheless, environmental law that is closely tied to place and local contexts will sometimes struggle to meet the aspirations of global concern and worldwide constituencies that are pressed by environmental constructs pitched at a broader scale.

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210 *Bailey v Forestry Commission of NSW* (1989) 67 LGRA 200, 212. The issue of scale is taken up again in the discussion of the principle of integration in Ch 2.

211 Compare the decisions in *Gray v Minister for Planning* (2006) 152 LGERA 258 and *Wildlife Preservation Society of Queensland Proserpine/Whitsunday Branch Inc v Minister for the Environment and Heritage* (2006) 232 ALR 510. See also Chris McGrath, 'Regulating Greenhouse Gas Emissions from Australian Coal Mines' in Wayne Gumley and Trevor Daya-Winterbottom (eds), *Climate Change Law: Comparative, Contractual and Regulatory Considerations* (2009) 217.

212 *Bailey v Forestry Commission of NSW* (1989) 67 LGRA 200, 212.

213 *Coastal Waters Alliance of WA Inc v EPA* (1996) 90 LGERA 136.

214 Ibid 150.

215 Fisher, above n 195.

216 *Minister for Environment and Heritage v Queensland Conservation Council Inc* (2004) 139 FCR 24.

6 Conclusions

As contests over different framings of environmental issues illustrate, concepts of environment even now remain in a state of flux. Our notions of environment are constructed against a backdrop of changing issues, problems, perceived solutions, groups and institutions. Unsurprisingly then, the attempt to provide a coherent legal framework for the regulation of the environment is a significant challenge. Moreover, law, even if very broadly conceived, will only be one factor in a myriad causes and effects operating in respect of the environment. The environment, while clearly grounded in empirical understandings, nonetheless exists as a mediated construct within a social, political and cultural context.

In understanding the notion of environment, the wheel has come full circle, but its current resting place is not the position from which our knowledge started. This chapter has traced some of the major changes in conceiving the environment that began with formative ideas about the interrelationship between people and the world they inhabit. At the risk of endorsing an overly anthropocentric perspective, we can say that the environment, especially as it manifests in law, is a construct of communication, and its meaning cannot be derived separately from its embedded context. This does not mean that there is not an entity composed of beings and processes other than humans that is deserving of our concern and protection. Rather, it denotes the fact that our knowledge of the world is mediated through the frame of concepts, language and terminology that we employ to describe and analyse the environment—which includes ourselves.

In looking across the historical spectrum, two competing visions, broadly conceived, have been important to the delineation of what we now recognise as the environment that is protected through law. Each vision represents a simplification of a multifaceted situation but, for our purposes, we can regard them as signifiers of more complex concepts. The first vision is that of an organic, embedded sense of humans existing in a continuum of life forms not sharply differentiated from their surroundings—a world animated by religious and philosophical values that stress interconnection and unitary order. These sources for environmental ideas emphasise the contributions made by disciplines such as history, philosophy, anthropology, political and cultural studies. At various points in time this vision has contrasted with an approach where humans stand out in relief against a world which is conceived as comprising a collection of mechanistic, causal and systematic processes, and discrete elements which are amenable by means of rational thought to human control and direction. Concepts emanating from natural philosophy, and the Western tradition of science and technology, were instrumental in the adoption of such views. Nevertheless, ecological science was also decisive in a melding of these approaches in current conceptions of ecosystems, and, more recently, in providing approaches that challenge assumptions of predictable and determinate outcomes.

Oscillations in environmental conceptions throughout history have been accompanied by similar transformations in the scale at which concepts of environment resonate. While the slogan, 'think globally, act locally', has become a catchphrase for the environmental movement and broader concepts of sustainability, these ends of the spectrum represent

only two dimensions of the gradations of scale at which we can imagine the environment. An environmental issue may pertain to the infinitesimally small dimensions of modified genes in biotechnology production; suburban development and its impact on native vegetation retention; regional planning for coastal sea-level rise consequent upon climate change; or the immensity and flux of ocean warming. A strong trend since the 1970s has been to embrace higher-level scales for understanding environmental phenomena, with many problems attracting global attention. This has been productive of significant globalisation and harmonisation in the field of environmental law and policy, and the shift of many regulatory functions from purely local forms of governance to incorporate a role for global institutions and international law.

Australia has not been immune from broad paradigm shifts in knowledge and different calibrations in envisaging the scale of the environment relevant for legal processes. Yet there are many unique features that influence legal understanding of the environment in the Australian context. Foremost among these have been the prominent role played by administrative structures of the state from an early stage in the management of land and natural resources and, from the 1970s onwards, ongoing interactions between the federal and state governments to determine the extent of each government's environmental responsibilities.[217] The former has led to a view that gives pre-eminence to public institutions in addressing environmental problems. The latter has made the dynamics of federal–state environmental relationships a crucial factor in determining what environmental matters are prioritised in policy and the manner in which they are regulated. Over time, many factors have impacted on intergovernmental relations concerning the environment in Australia, including the growth of international environmental law and changes in the nature of the environmental issues capturing public debate at any one time.

In Chapter 2 we consider how these various factors have influenced the underlying objectives and principles of environmental law, including the central part played by notions of ecologically sustainable development as a foundation for environmental law and policy in Australia.

7 Review questions

1 What is the difference between anthropocentric and earth-centred (ecocentric) constructs of the environment?
2 Does environmental law embody an anthropocentric construct of nature?
3 How might other views of the environment be given effect in environmental law?
4 What changes do you observe in the legal definitions of the environment adopted in statutes, treaties and judgements over time?
5 How have international legal developments affected the scope and nature of domestic environmental law?

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217 Federal–state responsibilities for the environment (and disputes over their scope) are discussed further in Ch 3.

8 Further resources

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