

ECOSYSTEM SERVICES AS A METAPHOR IN ENVIRONMENTAL LAW: BALANCING INTRINSIC AND INSTRUMENTAL VALUES

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The ecosystem services concept is a useful tool in environmental law, as it allows nature to be considered on the same plane of comparison as proposed development. However, the concept has received significant criticism, with many critics arguing that nature should be valued for its intrinsic worth. This article synthesises the ethical objections to the ecosystem services concept, distinguishing objections to the concept itself, and objections to the commodification of nature. It considers how the concept has been used in Australian environmental law to date, drawing on examples from the coastal wetland context. It concludes that most applications have not involved commodification, and have incorporated notions of intrinsic value. It concludes with some observations for future progress in this field, considering how the ecosystem services concept can be balanced with concerns for respecting the intrinsic value of nature.

I INTRODUCTION

Across the globe, the natural environment is in crisis, with biodiversity declining at a rate unprecedented in human history.¹ According to the 2019 Intergovernmental Science–Policy Platform on Ecosystem Services (‘IPBES’) Report, ‘nature across most of the globe has now been significantly altered by multiple human drivers’.² Wetlands have been particularly degraded, with over 85 per cent of their global surface area lost to date.³

Historically, wetlands have not been universally valued as part of the natural landscape, with many viewing them as ‘foul smelling and unhealthy breeding

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¹ Intergovernmental Science–Policy Platform on Ecosystem Services, *Report of the Plenary of the Intergovernmental Science–Policy Platform on Ecosystem Services on the work of its seventh session*, 7th sess, UN Doc IPBES/7/10/Add.1 (29 May 2019) 5.

² *Ibid* 4.

³ *Ibid*.

grounds for mosquitos, vermin and disease', and 'obstacles to economic development',⁴ as well as prime development sites given their proximity to water.⁵ In contrast, other communities highly value wetlands for their intrinsic qualities, including cultural and spiritual values, and as sites for recreation.⁶ The growing recognition of the broader ecosystem services that wetlands provide may tip the balance toward their protection; a healthy, well-functioning wetland such as a mangrove forest can store large amounts of carbon dioxide, improve water quality, protect coastal communities from flood and storm impacts, support fish species, and contribute to meeting international environmental and climate change commitments.⁷

As a concept, 'ecosystem services' has its roots in Westman's work on 'nature's services',⁸ with the term itself appearing in literature from the 1980s,⁹ and the concept experiencing further refinement through the 1990s.¹⁰ The release of the Millennium Ecosystem Assessment in 2005 was a 'seminal moment in ecological research',¹¹ aiming to change public perceptions of natural ecosystems through increasing understanding of the services they provide, thus slowing their degradation.¹² These developments solidified the notion that the ecosystem services paradigm can be a useful tool in decision-making, as it places nature on the same plane of comparison as development.¹³

Despite the practical attraction of the ecosystem services concept, it does not appeal to everyone, as there are arguments that nature should be valued independently of the benefits it can offer to human beings. The debate about whether nature should be valued for what it is, as opposed to what it does, is nothing new, with scholarship on the intrinsic versus instrumental value of

⁴ Robert L Glicksman, 'Regulatory Safeguards for Accountable Ecosystem Service Markets in Wetlands Development' (2014) 62(2) *University of Kansas Law Review* 943, 949.

⁵ Office of Technology Assessment, Congress of the United States, *Wetlands: Their Use and Regulation* (Report, March 1984) 37 <<https://www.biodiversitylibrary.org/item/22759#page/3/mode/1up>>.

⁶ Ibid.

⁷ See, eg, Millennium Ecosystem Assessment, *Ecosystems and Human Well-being: Wetlands and Water Synthesis* (Island Press, 2005).

⁸ Walter E Westman, 'How Much are Nature's Services Worth?' (1977) 197(4307) *Science* 960, 963.

⁹ Paul R Ehrlich and Anne H Ehrlich, *Extinction: The Causes and Consequences of the Disappearance of Species* (Random House 1981).

¹⁰ See, eg, Gretchen C Daily, 'Introduction: What are Ecosystem Services?' in Gretchen C Daily (ed), *Nature's Services: Societal Dependence on Natural Ecosystems* (Island Press, 1997) 1; Lawrence H Goulder and Donald Kennedy, 'Valuing Ecosystem Services: Philosophical Bases and Empirical Methods' in Gretchen C Daily (ed), *Nature's Services: Societal Dependence on Natural Ecosystems* (Island Press, 1997) 23.

¹¹ Christian Mulder et al, '10 Years Later: Revisiting Priorities for Science and Society a Decade After the Millennium Ecosystem Assessment' (2015) 53 *Advances in Ecological Research* 1, 3.

¹² Millennium Ecosystem Assessment, *Ecosystems and Human Well-being: General Synthesis* (Island Press, 2005) 1.

¹³ Justine Bell-James, 'Integrating the Ecosystem Services Paradigm into Environmental Law: A Mechanism to Protect Mangrove Ecosystems?' (2019) 31(2) *Journal of Environmental Law* 291, 292.

nature dating back to the 1970s. This central debate has not yet been resolved. Today, arguments for prioritising the intrinsic value of nature exist within the legal scholarship on wild law, earth jurisprudence and rights of nature,¹⁴ while proponents of the ecosystem services paradigm argue for an approach that integrates concepts of instrumental value as well.

The central argument in this article is that balancing the use of the ecosystem services concept in environmental law with concerns raised in the environmental ethics literature is likely to yield the best results for nature, using coastal wetlands as the frame of reference. This is not to dismiss the plurality of opinions on this topic, and as Piccolo noted, ‘I have seen no environmental philosopher ... argue that a pluralism of viewpoints is unwelcome in solving our current ecological crisis — the opposite has been the case in fact’.¹⁵ However, this article argues that legal recognition of ecosystem services can represent a feasible compromise between environmental protection and prevailing social conditions, and can incorporate notions of intrinsic value. Countries like Australia, the United States and the United Kingdom have deeply conservative governments, and while widespread social change is a noble goal — and likely to become an imperative over the coming years and decades with the intensification of climate change impacts — working within the existing system may yield more effective and timely results. The reality is that nature is often considered less important than economic development in decision-making processes, and elevating nature to an even plane — not higher, but also not lower — is therefore an improvement. In his defence of ecosystem services, Ruhl has argued that ‘this is a classic case of not letting the perfect be the enemy of the good’.¹⁶ Ecosystem services may be characterised as a ‘good’ approach to environmental management, and can be used as a stepping stone in the pursuit of perfection.

Ecosystem services are also ubiquitous, and impossible not to use to some extent. If we breathe air, we are benefitting from filtration services provided by forests. If we eat food, we are benefitting from pollination services provided by bees. Our fundamental reliance on the existence of these services weighs in favour of explicitly protecting them and ensuring that they can be sustained into the future. It would therefore be preposterous to argue that any use of ecosystem services is inherently unethical. Jax et al have argued that juxtaposing an ecosystem services perspective with an ‘ethical perspective’ on nature is not useful and rests on overly narrow interpretations of the terms ‘ecosystem

¹⁴ See, eg, Peter Burdon (ed), *Exploring Wild Law: The Philosophy of Earth Jurisprudence* (Wakefield Press, 2011).

¹⁵ John J Piccolo, ‘Intrinsic Values in Nature: Objective Good or Simply Half of an Unhelpful Dichotomy?’ (2017) 37 *Journal for Nature Conservation* 8, 9.

¹⁶ JB Ruhl, ‘In Defense of Ecosystem Services’ (2015) 32(1) *Pace Environmental Law Review* 306, 335.

services' and 'ethics'.¹⁷ In particular, there is sometimes a tendency to conflate 'ecosystem services' with 'commodification of nature'. That said, Jax et al did not suggest that the concept be used unreservedly; they also argued that there is a need for responsibility in the use of ecosystem services concepts.¹⁸

A central premise in this article is that ecosystem services need not be an 'all or nothing' concept. A more nuanced approach may be to view different applications of the ecosystem services concept on a spectrum, which encompasses the full range of ecosystem services, from those we cannot help but use as they are necessary to our survival (at one end), through to ecosystem services that can be monetised and traded on a market (at the other). So conceived, a subjective point on this spectrum will exist at which a person may view the concept as crossing an ethical line.¹⁹

This article does not intend to draw any conclusions as to where this ethical line ought to be drawn in the context of the use and application of the ecosystem services concept in environmental law and policy. It highlights that many applications of the concept in law would fall on the lower end of the spectrum anyway, as demonstrated, in particular, by instruments that use ecosystem services as a 'metaphor' to allow natural values to be expressed in terms of services to humans. This article instead considers how current and proposed applications of the concept in environmental law can better integrate notions of intrinsic value and other concerns raised regarding its ethical dimensions.

This article will commence with an analysis of the moral and ethical arguments leveraged for and against ecosystem services, summarising the critiques into two categories: (1) those that are opposed to the concept absolutely, and (2) those that are opposed to particular applications of it — generally, measures to commodify nature. It will then consider the various ways that ecosystem services are used in law and policy, and analyse three cases studies of its use in Australia. Following on from this, it will consider how the law can move forward, integrating notions of ecosystem services and intrinsic values, while respecting the key ethical concerns regarding the ecosystem services concept.

¹⁷ Kurt Jax et al, 'Ecosystem Services and Ethics' (2013) 93 *Ecological Economics* 260, 262.

¹⁸ *Ibid* 265.

¹⁹ See, eg, Thomas Hahn et al, 'Purposes and Degrees of Commodification: Economic Instruments for Biodiversity and Ecosystem Services Need Not Rely on Markets or Monetary Valuation' (2015) 16 *Ecosystem Services* 74.

II CRITIQUES AND DEFENCES OF THE ECOSYSTEM SERVICES CONCEPT

Although the ecosystem services concept has gained momentum in both the conservation movement and the law and policy realm, it is acknowledged that it is not a universally popular concept. Within the literature on ecosystem services, there are numerous critiques of the idea, many of which are met with counter-critiques by other scholars. A majority of critiques are concerned very broadly with the ethical ramifications of valuing nature for what it can do, rather than what it is. Two recent works by Luck et al²⁰ and Schröter et al²¹ have synthesised and classified the large body of literature on this topic. Luck et al characterise ethical objections as being directed at the following aspects of ecosystem services: the anthropocentric framing, its role as an economic metaphor, monetary valuation, commodification, sociocultural impacts, changes in motivations, and equity implications. With some overlap, Schröter et al characterise critiques as being directed at: the anthropocentric framing, the exploitative human–nature relationship, conflict with biodiversity conservation outcomes, the economic–value focus, commodification of nature, vagueness of definitions, and the normative nature of the concept.

While these detailed syntheses of the literature are extremely useful, it is not the object of this article to undertake a fine-grained analysis of all facets of the critiques. For brevity, these critiques will be categorised more broadly in this paper as (a) those that are in opposition to ecosystem services as a concept generally, and (b) those that are in opposition to the separation, monetisation and commodification aspects of the concept.

A Opposition to the Concept of Ecosystem Services: Anthropocentrism vs Ecocentrism, and Intrinsic vs Instrumental Value

Many of the objections contained in Luck et al's and Schröter et al's summaries are captured by the decades long debates as to whether we should take an ecocentric or anthropocentric approach to nature,²² and whether nature should

²⁰ Gary W Luck et al, 'Ethical Considerations in On-Ground Applications of the Ecosystem Services Concept' (2012) 62(12) *BioScience* 1020.

²¹ Schröter et al, 'Ecosystem Services as a Contested Concept: A Synthesis of Critique and Counter-Arguments' (2014) 7(6) *Conservation Letters* 514.

²² See, eg, Suzanne C Gagnon Thompson and Michelle A Barton, 'Ecocentric and Anthropocentric Attitudes Towards the Environment' (1994) 14(2) *Journal of Environmental Psychology* 149. The authors note at 149 that 'ecocentric individuals value nature for its own sake and, therefore, judge that it deserves protection because of its intrinsic value. In contrast, anthropocentrists feel that the

be valued for its intrinsic or its instrumental value.²³ These concepts are generally presented as being dichotomous and irreconcilable. In fact, the meaning of ‘intrinsic value’ is not always expressed with clarity and explicitly defined, and Justus et al have noted that many scholars instead implicitly define it by reference to what it is not — that is, instrumental value.²⁴ Newman, Varner and Linquist have defined intrinsic value as something that ‘has value in and of itself, independently of its serving the ends, purposes, or goals of others’.²⁵ This is juxtaposed against instrumental value, which ‘refers to the value things have as means to some end, purpose, or goal’.²⁶

Importantly, the distinction between intrinsic and instrumental value does not hinge upon the ability to assign a dollar value to a thing, and to have instrumental value does not mean that a thing’s value must be quantifiable in monetary terms. For example, a famous work of art has instrumental value because of the pleasure that human beings derive from viewing it.²⁷ Davidson has suggested that, in this instance, the value ascribed to the work of art can still be instrumental; its existence value, or the satisfaction humans get from its existence, is a cultural ecosystem service. Davidson has argued that intrinsic value can be conceptualised from either a deontological or a consequentialist perspective, involving valuing either nature’s moral status or its wellbeing, respectively.²⁸ However, in either case, the focus is on nature itself, without regard to its relationship to humans.

The debate as to whether nature should be valued for its intrinsic value or its instrumental value has continued for several decades and shows no signs of slowing down. The debate has its foundations in the concept of ‘deep ecology’, which emerged in the 1970s. Naess has distinguished between ‘shallow ecology’, whereby humans fight against pollution and resource depletion in order to better the health of human beings in developed countries, and ‘deep ecology’, which recognises that humans are merely part of a complex web of intrinsic relations.²⁹

environment should be protected because of its value in maintaining or enhancing the quality of life for humans.’

²³ See, eg, James Justus et al, ‘Buying into Conservation: Intrinsic versus Instrumental Value’ (2009) 24(4) *Trends in Ecology and Evolution* 187.

²⁴ *Ibid* 187–8. See also Lynn A Maguire and James Justus, ‘Why Intrinsic Value Is a Poor Basis for Conservation Decisions’ (2008) 58(10) *BioScience* 910.

²⁵ Jonathan A Newman, Gary Varner and Stefan Linquist, *Defending Biodiversity: Environmental Science and Ethics* (Cambridge University Press, 2017) 26.

²⁶ *Ibid*.

²⁷ Justus et al (n 23) 188.

²⁸ Mark D Davidson, ‘On the Relation between Ecosystem Services, Intrinsic Value, Existence Value and Economic Valuation’ (2013) 95(C) *Ecological Economics* 171.

²⁹ Arne Naess, ‘The Shallow and the Deep, Long-Range Ecology Movement. A Summary’ (1973) 16(1–4) *Inquiry* 95.

Deep ecology does not involve short-range, single-issue goals, but rather encourages drastic transformation of human values towards nature.³⁰

In 1985, in a seminal essay, Soulé argued that ‘biotic diversity has intrinsic value, irrespective of its instrumental or utilitarian value ... [S]pecies have value in themselves, a value neither conferred nor revocable, but springing from a species’ long evolutionary heritage and potential or even from the mere fact of its existence’.³¹ Since Soulé’s essay there has been a wealth of literature published on the topic of intrinsic value, and Sandler has summarised three different accounts of it: interest-based intrinsic value, valuer-dependent intrinsic value, and intrinsic objective value.³² Interest-based intrinsic value arises when something has interests that humans ought to care about for their own sake. For example, species have interests, whereas rocks do not.³³ Valuer-dependent intrinsic value provides that something has intrinsic value if it is valued for what it is, not what it can do.³⁴ Finally, something possesses objective intrinsic value simply by virtue of its existence, irrespective of whether anyone recognises its value.³⁵ The latter category seems to align more with Davidson’s concept of intrinsic value discussed above.

Vucetich, Bruskotter and Nelson have argued that the implication of accepting the intrinsic value of nature is its practical importance to decision-making processes: ‘it would be unacceptable to harm or exploit an aspect of nature possessing intrinsic value unless there is compelling reason to do so — the burden of proof is on one wishing to harm or exploit’.³⁶ If their line of reasoning is accepted, it follows that a decision-maker solely focused on the instrumental value of an ecosystem could plausibly sacrifice it if a proposed development would offer a greater range of services. In contrast, an intrinsic-value approach means that the preservation of nature would prevail absent compelling reasons to harm it. Maguire and Justus have disagreed with this proposition and argue that intrinsic value is a poor basis for conservation decisions, because decision-making requires tradeoffs, which in turn requires the comparative evaluation of competing claims. If intrinsic value is weighed against an economic interest, in practice it is likely to be cast aside. However, they argue that values associated

³⁰ See, eg, Bill Devall, ‘The Deep Ecology Movement’ (1980) 20(2) *Natural Resources Journal* 299, 303.

³¹ Michael E Soulé, ‘What Is Conservation Biology?’ (1985) 35(11) *BioScience* 727, 731.

³² Ronald Sandler, ‘The Value of Species and the Ethical Foundations of Assisted Colonisation’ (2009) 24(2) *Conservation Biology* 424.

³³ *Ibid* 426.

³⁴ *Ibid* 427.

³⁵ *Ibid* 429.

³⁶ John A Vucetich, Jeremy T Bruskotter and Michael Paul Nelson, ‘Evaluating Whether Nature’s Intrinsic Value is an Axiom of or Anathema to Conservation’ (2015) 29(2) *Conservation Biology* 321, 327.

with intrinsic value such as aesthetic, spiritual, cultural and existence value can be captured as a category of instrumental value, but in a form that can be evaluated comparatively and used in conservation decision-making.³⁷

In a recent piece, Batavia and Nelson have defended intrinsic value. They argue that it should be central to the ecosystem services paradigm for logical, practical and ethical reasons. Logically, the ecosystem services paradigm is aimed at preserving human wellbeing, and human wellbeing is an intrinsic value itself, albeit an anthropocentric one — practically because it motivates, and ethically because we are moral agents who should treat anything possessing intrinsic value as an end rather than simply a means.³⁸

Schröter and Oudenhoven have also argued that the concept of ecosystem services integrates notions of intrinsic value. Although the concept is inherently anthropocentric, they note that ‘humans ... do not want to merely survive, but to live a life worth living. To achieve this, relationships with nature need to go beyond being a utilitarian toolbox.’³⁹ They argue that the focus of debate going forward should be on how to use the ecosystem services concept in a progressive and collaborative way, to conserve biodiversity for both the good of humanity and for its own sake.⁴⁰

Given that these debates have persisted for decades, it is unsurprising that calls have been made for a conceptual framework that balances these competing viewpoints. Some of these calls come from the community of scholars advocating for a ‘wild law’ or ‘earth jurisprudence’ approach. The theory of wild law proceeds on the basis that ‘one of the primary causes of environmental destruction is the fact that our governance systems are designed to perpetuate human domination of Nature, instead of fostering mutually beneficial relationships between humans and the other members of the Earth community’.⁴¹ Wild law instead maintains that humans and nature are both the holders of rights, and these rights are interconnected.

Emerging from the conservation biology literature is the relational-values approach, which has been proposed as a third alternative to intrinsic and instrumental value. Chan et al have suggested a move beyond the intrinsic versus instrumental value juxtaposition, stating that while these ‘are often presented as stark alternatives, many important concerns may be better understood as

³⁷ Maguire and Justus (n 24).

³⁸ Chelsea Batavia and Michael Paul Nelson, ‘For Goodness Sake! What Is Intrinsic Value and Why Should We Care?’ (2017) 209 *Biological Conservation* 366.

³⁹ Matthias Schröter and Alexander PE van Oudenhoven, ‘Ecosystem Services Go Beyond Money and Markets: Reply to Silvertown’ (2016) 31(5) *Trends in Ecology and Evolution* 333, 334.

⁴⁰ *Ibid.*

⁴¹ Cormac Cullinan, ‘A History of Wild Law’ in Peter Burdon (ed), *Exploring Wild Law: The Philosophy of Earth Jurisprudence* (Wakefield Press, 2011) 12, 13.

relationships with both aspects'.⁴² They advocate for a relational-values approach, which focuses on human interactions with nature, noting that 'caring for and attending to places can be essential for perpetuating cultural practices and core values', with relational values defined as 'preferences, principles, and virtues associated with relationships, both interpersonal and as articulated by policies and social norms'.⁴³ However, the relational-values approach has not been universally embraced; for example, Piccolo has argued that intrinsic value remains important, and that 'a moral concern for our own good ... ought not to substitute for a genuine moral concern for nature's own good'.⁴⁴ Stålhammar and Thorén acknowledge the benefits of the relational-values framing, but raise questions as to how it relates to existing concepts of value.⁴⁵

One interesting facet of the relational-values approach is that it may have some parallels with indigenous perspectives on nature. Discussing the relationship between the Ngarrindjeri peoples and nature, Hemming et al have noted that 'Ngarrindjeri and indigenous peoples internationally understand their humanity and their Indigenous sovereignty as being constituted in inextricable relations with the non-human world ... [Their] philosophy expresses the interconnectivity between the lands, waters and all living things.'⁴⁶ Hemming et al argue that the ecological character description ('ECD') process for Ramsar wetlands is at odds with the Ngarrindjeri worldview, which is

based on principles of connectivity, responsibility, reciprocity and mutuality — where humans are connected as part of the whole 'ecosystem'. In the first instance, the ECD framework compartmentalises Ngarrindjeri lands and waters into ecosystem components, processes and services. This does not align with Ngarrindjeri rights and responsibilities, which rely on the connectivity between lands and waters and all living things.⁴⁷

In this sense, the human-nature relationship is viewed as symbiotic — it is permissible for humans to rely on nature, but the relationship is reciprocal. The particular concern raised with the ecosystem services approach by Hemming et al was the segregation of different ecosystem service values, rather than considering them holistically. Nature is more than the sum of its parts and should be respected as such.

⁴² Kai MA Chan et al, 'Why Protect Nature? Rethinking Values and the Environment' (2016) 113(6) *PNAS* 1462, 1463.

⁴³ *Ibid* 1462–3.

⁴⁴ Piccolo (n 15) 11.

⁴⁵ Sanna Stålhammar and Henrik Thorén, 'Three Perspectives on Relational Values of Nature' (2019) 14(5) *Sustainability Science* 1201.

⁴⁶ Steve Hemming et al, 'Ngarrindjeri Vision for the Ecological Character Description of the Coorong and Lower Lakes' in Luke Mosley et al (eds), *Natural History of the Coorong, Lower Lakes and Murray Mouth Region* (Royal Society of South Australia, 2019) 494, 494.

⁴⁷ *Ibid* 496–7.

While these alternative perspectives on the value of nature have introduced fresh perspectives to the debate, they have not resulted — and arguably have not intended to result — in a universally agreed-upon approach to values. This admittedly brief review of the extensive literature on environmental ethics has showed that there remains a wide spectrum of viewpoints on whether nature should be valued for what it is, or what it does, or some combination thereof. For theorists at one end of the spectrum who take a strict approach to respecting nature for its pure intrinsic value, the ecosystem services concept is unlikely to be palatable under any circumstances. However, there is also recent literature that suggests that the intrinsic versus instrumental value classifications may not be quite as dichotomous as initially thought. There are also scholars who argue for respect for nature's intrinsic value as part of a fuller assessment of environmental values. In this instance, the ecosystem services concept may be acceptable, subject to ethical caveats. It seems that for many commentators, the subjective ethical line may be crossed when one separates out the various services provided by nature, which may also be accompanied by the monetisation and commodification of those services. Thus, the concept of commodification needs to be explored in further depth.

B Opposition to the Separation, Monetisation and Commodification of Nature, and Focus on Economic and Monetary Values

The ecosystem services concept may be used as a purely theoretical construct to explain the different functions performed by nature. In this vein, Redford and Adams have suggested that 'ecosystem services have now become the central metaphor within which to express humanity's need for the rest of living nature'.⁴⁸ Alternatively, the concept may be used as a basis for monetising and commodifying nature. For example, payment for ecosystem service ('PES') approaches involve financial incentives provided to parties who create or protect particular environmental services, paid by the beneficiaries of those environmental services (often governments).⁴⁹

For some, the distinction between using ecosystem services as a metaphor, and using it as a basis to commodify nature, is where their ethical line is drawn. For example, Silvertown has distinguished between the anthropocentrism of the concept on one hand, and the monetisation of nature on the other. He argues that

⁴⁸ Kent H Redford and William M Adams, 'Payment for Ecosystem Services and the Challenge of Saving Nature' (2009) 23(4) *Conservation Biology* 785.

⁴⁹ See, eg, Paul J Ferraro, 'The Future of Payments for Ecosystem Services' (2011) 25(6) *Conservation Biology* 1134.

nature should not be commodified, but recognising nature's anthropocentric values can mean that 'it is possible to use the concept of ecosystem services in a more nuanced way to build upon the moral case for biodiversity conservation and not to displace or devalue it by monetization'.⁵⁰

This is backed by further vocal opposition to the monetisation and commodification of nature. McCauley has stated that the underlying object of the ecosystem services narrative is to identify ecosystem services, quantify their economic value, and bring conservation into the realm of market-based mechanisms.⁵¹ He strongly criticised this marketisation of nature, as it implies 'that nature is only worth conserving when it is, or can be made, profitable'.⁵² Kosoy and Corbera have argued that commodifying ecosystem services can actually be detrimental, as it reduces their value to single services rather than valuing them holistically. They argue that these issues can be addressed while maintaining the commodification approach, such as through bundling services and acknowledging multiple values. However, this would not satisfy McCauley's central concern, which was the need for nature to turn a profit in order for protection to be justified. An alternative and more radical approach would follow the lines of environmental ethics and discard commodification, instead treating the environment as a public good.⁵³ The problem of separating out nature's multiple values has also been highlighted by Boon and Prahalad, who pose the following question:

Do free-market speculators prefer wetlands as carbon stocks, or as bird habitats, or as areas that inspire artists, or as areas where people can maintain their mental health, or as areas that protect against shoreline erosion? Such economic analysis requires that complex dynamic ecosystem functions be reduced to suit the limited confines of economic models, based almost completely on narrowly determined human needs and desires.⁵⁴

It is also important to note that the concept of 'commodification' is more complex than it appears at first sight. Hahn et al have identified seven degrees of commodification within ecosystem services policy, defining the degree of

⁵⁰ Jonathan Silvertown, 'Have Ecosystem Services Been Oversold?' (2015) 30(11) *Trends in Ecology and Evolution* 641, 647.

⁵¹ Douglas J McCauley, 'Selling Out on Nature' (2006) 443 *Nature* 27, 27.

⁵² *Ibid* 27.

⁵³ Nicolás Kosoy and Esteve Corbera, 'Payments for Ecosystem Services as Commodity Fetishism' (2010) 69(6) *Ecological Economics* 1228, 1234–5.

⁵⁴ Paul I Boon and Vishnu Prahalad, 'Ecologists, Economics and Politics: Problems and Contradictions in Applying Neoliberal Ideology to Nature Conservation in Australia' (2017) 23(2) *Pacific Conservation Biology* 115, 119.

commodification as ‘the extent to which the value of biodiversity or an ecosystem service has become a tradeable commodity’.⁵⁵ These seven degrees are as follows:

- Zero is no commodification, including appreciating ecosystems for their intrinsic value. This may include designating areas as nature reserves, and it aligns with paradigms such as the rights of nature.⁵⁶
- One involves a shift to framing nature according to its instrumental value, but without explicit efforts at valuation.⁵⁷
- Two involves ‘new property rights and liabilities involving measurements of biodiversity or ecosystem service units but without monetary valuation or price signals’ — for example, biodiversity offsets.⁵⁸
- Three involves ‘deliberate efforts to express or “demonstrate” the value of nature in monetary terms’. This is a step towards commodification.⁵⁹
- Four involves taxes and subsidies to enhance ecosystem values.⁶⁰
- Five includes markets for ecosystem services, tradeable biodiversity offsets, etc.⁶¹
- Six is financialisation or complete commodification and involves a commodity being re-packaged and re-sold as financial instruments.⁶²

Hahn et al concluded that any use of the ecosystem services concept involves commodification in at least an analytical, if not normative, sense, because of their instrumental value focus.⁶³ Thus, a person’s ethical ‘line’ may not be drawn between commodification or no commodification, but rather at a particular degree of commodification. For example, degrees zero, one and two on Hahn et al’s scale might fall within the ‘ecosystem services as a metaphor’ categorisation, while degrees three and above are true examples of monetisation and commodification. Degree two may be a grey area, though, as it could involve the separation of distinct ecosystem services, if not the monetisation of them.

⁵⁵ Hahn et al (n 19) 75.

⁵⁶ Ibid.

⁵⁷ Ibid.

⁵⁸ Ibid 76.

⁵⁹ Ibid.

⁶⁰ Ibid 77.

⁶¹ Ibid 78.

⁶² Ibid.

⁶³ Ibid 81.

In summary, these sources suggest that there are two distinct but interlinked problems raised by critics of ecosystem services: first, the separation of an ecosystem into its constituent parts; and, second, commodification and monetisation of those parts (or some of those parts). It also indicates that it is important to distinguish between ecosystem services as a concept or a metaphor on the one hand, and commodification schemes such as payment for ecosystem services on the other. For example, Schröter et al have urged caution in conflating 'ecosystem services' with 'payment for ecosystem services'.⁶⁴ Indeed, the following discussion will demonstrate that, in the Australian context, most applications of the ecosystem services concept in law have been in the metaphorical sense, with few examples of true commodification schemes.

III HOW ECOSYSTEM SERVICES IS — AND CAN BE — USED IN LAW

While there is a wealth of scholarship debating the ethical boundaries of the ecosystem services concept, what is currently lacking in the literature is a discussion of the ethical implications of the ecosystem services concept as it is used in law and legal frameworks. This is unsurprising, as the literature on ecosystem services and law generally is also quite scant, and the law has lagged behind scientific developments on this issue by several decades.⁶⁵ Writing in 2010, Ruhl noted that the ecosystem services concept had only begun to penetrate United States environmental policy in the previous few years.⁶⁶ Progress has been even slower in Australia, and in a 2020 review of wetland law and policy, Bell-James, Boardman and Foster could identify no piece of Australian legislation referring explicitly to ecosystem services, although there is some recognition of the concept in policy.⁶⁷ While progress has been gradual and slow, there have been a number of analyses of how the concept can be translated into legal and policy frameworks.

In 2012, Luck et al noted that the ecosystem services concept was becoming more visible in government policy and programs, including payment for

⁶⁴ Schröter et al (n 21).

⁶⁵ This lag between scientific and technological developments and legal response has been observed in many areas: see, eg, Frederick K Beutel, 'The Lag between Scientific Discoveries and Legal Procedures' (1953) 33(1) *Nebraska Law Review* 1; Lyria Bennett Moses, 'Recurring Dilemmas: The Law's Race to Keep Up with Technological Change' [2007] *University of New South Wales Faculty of Law Research Series* 21.

⁶⁶ JB Ruhl, 'Ecosystem Services and the Clean Water Act: Strategies for Fitting New Science into Old Law' (2010) 40(4) *Environmental Law* 1381, 1383.

⁶⁷ Justine Bell-James, Tessa Boardman and Rose Foster, 'Can't See the (Mangrove) Forest for the Trees: Trends in the Legal and Policy Recognition of Mangrove and Coastal Wetland Ecosystem Services in Australia' (2020) 45 *Ecosystem Services* 101148.

ecosystem services schemes, spatial planning, greening of national accounting schemes, and strategic considerations in high-level policy and lawmaking.⁶⁸ The authors observed that the concept can be used purely as a communication tool to help people understand the importance of nature, and it can also be used to influence policy and assist with decision-making.⁶⁹ This was echoed by Jax et al, who noted that it may be used to denote a generic idea regarding the role of nature in sustaining human life; it can be used at the policy level to support decision-making, for example by making clear the trade-offs arising from different land-use policy decisions; or, finally, it can be used to measure, monetise and commodify nature.⁷⁰

Writing from a legal perspective, Pardy has stated that there have been at least three approaches proposed for the protection of ecosystem services in law: first, a regulatory approach, whereby law restricts actions that may affect ecosystem services; second, payment for ecosystem services schemes; and, third, the creation of markets for ecosystem services.⁷¹

In 2015, Ruhl produced a detailed analysis of the current themes in ecosystem services law and policy in the United States, and he noted that the concept had gained traction in five different legal and policy realms: government payment programs, regulatory programs, public lands programs, impact assessment programs, and common law.⁷² PES schemes include payments to farmers for improving water flows into the watershed.⁷³ Regulatory programs require government agencies to take ecosystem services into account in decision-making processes.⁷⁴ Public land management programs are those that incorporate ecosystem services considerations into decisions regarding public land.⁷⁵ Impact assessment programs have received a lot of traction in the United States recently, with ecosystem service impacts factored into some decision-making regarding infrastructure projects.⁷⁶ Finally, ecosystem services have been considered in some judicial decisions; for example, a court upheld a development refusal as runoff from the development would affect a marshland, thereby constituting nuisance.⁷⁷

⁶⁸ Luck et al (n 20) 1020.

⁶⁹ Ibid 1021.

⁷⁰ Jax et al (n 17) 265.

⁷¹ Bruce Pardy, 'The Logic of Ecosystems: Capitalism, Rights and the Law of 'Ecosystem Services'' (2014) 5(2) *Journal of Human Rights and the Environment* 136, 138.

⁷² Ruhl (n 16) 320.

⁷³ Ibid 321.

⁷⁴ Ibid 322.

⁷⁵ Ibid.

⁷⁶ Ibid 323.

⁷⁷ Ibid 324.

Building on these categories, Bell-James, Boardman and Foster have categorised current approaches in Australia. They identify three main ways in which the ecosystem services concept has been used, either explicitly or implicitly, in Australia in the context of coastal wetlands.⁷⁸ First, it has been utilised in development approval laws and policies, such as laws and policies that require impacts on a wetland to be taken into account in making a decision about development. This aligns with Ruhl's impact assessment program category. Second, the concept has been adopted in the context of resource conservation laws that require the consideration of impacts on a wetland in decision-making that is not related to development. Finally, there are protected areas laws and policies that allow a decision-maker to declare an area as being of a class of protected areas and therefore subject to limits on use therein. This partially aligns with Ruhl's public lands programs category.⁷⁹ There are also emerging regimes for providing monetary benefits related to nature restoration (payments for ecosystem services), for example through the Federal Climate Solutions Fund/Emissions Reduction Fund and Queensland Land Restoration Fund, both of which provide financial incentives and/or carbon credits for restoration projects.⁸⁰ To date, there are few true commodification schemes in Australia that allow for generation of tradeable credits.⁸¹ Further, even in the contexts identified, the ecosystem services concept has not always been incorporated in law, and decision-makers are often simply required to consider impacts on the resource — not the services provided by that resource.⁸²

What these analyses demonstrate is that there are many different ways that the ecosystem services concept can be used in law, with these different mechanisms aligning with different points on the Hahn et al commodification scale. In many instances, the concept is used only in the metaphorical context contemplated by Redford and Adams, in the sense that a decision-maker is only required to consider ecosystem services provided by a resource in determining whether to allow an aspect of the environment to be harmed. They need not take the additional step of quantifying the monetary value of the services provided, and determining whether this value exceeds the monetary value of a proposed development. For example, Queensland decision-makers must aim to ensure that

⁷⁸ Bell-James, Boardman and Foster (n 67).

⁷⁹ Ibid.

⁸⁰ See discussion in Justine Bell-James and Catherine E Lovelock, 'Legal Barriers and Enablers for Reintroducing Tides: An Australian Case Study in Reconverting Poned Pasture for Climate Change Mitigation' (2019) 88 *Land Use Policy* 104192.

⁸¹ But see, eg, *Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002* (NSW), which provides for credits to be issued for increases in water quality. These credits can then be traded on a market.

⁸² See, eg, Bell-James (n 13).

development does not impact on coastal processes, which includes the role of wetlands in filtration and flood mitigation.⁸³ In this respect, the purpose of the legal requirement is to place nature on the same plane of comparison as development.⁸⁴ In Australia, certainly, there are as yet few examples of the higher parts of the Hahn et al commodification scale reflected in law or policy.

This analysis also shows that, despite lingering debates as to the appropriateness of the ecosystem services concept, it already permeates decision-making and law and legal processes, and has in some cases resulted in the delivery of environmental benefits. It has also rarely been used in the context of that part of the spectrum of ecosystem service narratives that is of most concern to scholars. To further demonstrate this point, the following sections will analyse three different applications of the ecosystem services concept in Australia, aligning with the three categories identified by Bell-James, Boardman and Foster: resource protection, development approval, and protected areas.

A Ecosystem Services in Resource Conservation Laws and Policies

A review of legislation and policy protecting wetlands in Australia has shown that some of the strongest and most consistent protection is delivered through fisheries legislation.⁸⁵ Because of the fisheries focus, wetland protection is not an explicit purpose of that legislation. For example, the purpose of the *Fisheries Act 1994* (Qld) is 'to provide for the use, conservation and enhancement of the community's fisheries resources and fish habitats in a way that seeks to apply and balance the principles of ecologically sustainable development, and promote ecologically sustainable development'.⁸⁶ 'Fish habitat' is broadly defined to include 'plants associated with the life cycle of fish',⁸⁷ which incorporates wetlands. These wetland plants (including mangroves and saltmarsh) are prima facie protected under the legislation, as a person must not unlawfully remove, destroy or damage a marine plant⁸⁸ without obtaining the requisite approval.⁸⁹

⁸³ *Coastal Protection and Management Act 1995* (Qld) and Queensland Department of Infrastructure, Local Government and Planning, *State Development Assessment Provisions: State Code 8: Coastal Development and Tidal Works* (2017) PO1.

⁸⁴ See Bell-James (n 13) 292.

⁸⁵ See, eg, *Fisheries Act 1994* (Qld); *Fisheries Management Act 1994* (NSW); *Fisheries Act 1995* (Vic); *Fisheries Act 1988* (NT); *Fisheries Management Act 2007* (SA). See also Kerry Lee Rogers et al, 'The State of Legislation and Policy Protecting Australia's Mangrove and Salt Marsh and Their Ecosystem Services' (2016) 72 *Marine Policy* 139.

⁸⁶ *Fisheries Act 1994* (Qld) s 3(1).

⁸⁷ *Ibid* Dictionary sch 1.

⁸⁸ *Ibid* s 123(a).

⁸⁹ Queensland Department of Infrastructure, Local Government and Planning, *State Development Assessment Provisions: State Code 11: Removal, Destruction or Damage of Marine Plants* (2017).

Similarly, the primary object of the *Fisheries Management Act 1994* (NSW) is 'to conserve, develop and share the fishery resources of the State for the benefit of present and future generations'.⁹⁰ Mangroves, seagrasses and other declared marine vegetation are protected in circumstances where they are located in a 'protected area',⁹¹ unless there is a permit to harm marine vegetation.⁹²

The motivator for these legislative protections is inherently economic. The economic benefits of fisheries protection are quantifiable, with scientists noting a direct negative impact on fisheries production as a result of wetland degradation, and a corresponding increase in production where efforts are made to repair affected wetlands.⁹³ On the flipside, it has been recognised that, at the global scale, overexploitation through fishing has had a negative effect on wetlands.⁹⁴ Policymakers therefore face the challenge of striking a delicate balance between ensuring the continued health of wetlands and the sustainability of the fishing industry. In Queensland, policy underpinning fisheries legislation attempts to address this balance by requiring that any development involving the removal, destruction or damage of marine plants 'maintains the extent, distribution, diversity and condition of marine plant communities and protects the ecological functions to which they contribute'.⁹⁵ Significantly, this incorporates some recognition of the intrinsic value of wetlands, as well as their holistic value as more than just a habitat for fish.

There are certainly criticisms that can be levelled against the fisheries focus of much wetland protection law. The focus on a single ecosystem service is at odds with some views of nature,⁹⁶ and scientists have also argued that prioritising nature for provision of a single service does not necessarily lead to co-benefits.⁹⁷ It also means that nature may not be deemed important enough to conserve where a cost-benefit analysis does not favour preservation. On the other hand, protection through fisheries legislation has slowed the degradation of wetlands and delivered an environmental benefit in a situation where environmental factors may otherwise have been overlooked. However, this preservation has been an end product, rather than a means. These themes will be explored in further case studies.

⁹⁰ *Fisheries Management Act 1994* (NSW) s 3(1).

⁹¹ *Ibid* ss 204(2), 204A, 205. 'Protected areas' include any public water land, any area subject to an aquaculture lease, and the foreshore.

⁹² *Environmental Planning and Assessment Act 1979* (NSW) s 91A.

⁹³ Colin Creighton et al, 'Repairing Australia's Estuaries for Improved Fisheries Production — What Benefits, at What Cost?' (2015) 66(6) *Marine Freshwater Research* 493.

⁹⁴ Intergovernmental Science-Policy Platform on Ecosystem Services (n 1) 5.

⁹⁵ Queensland Department of Infrastructure (n 89) [11.1].

⁹⁶ See, eg, Kosoy and Corbera (n 53) 1234–5.

⁹⁷ Scott C Atkinson et al, 'Prioritising Mangrove Ecosystem Services Results in Spatially Variable Management Priorities' (2016) *PLOS ONE* DOI:10.1371/journal.pone.0151992.

B *Development Approval Laws and Policies*

The fisheries context is one example of where a healthy, well-functioning wetland is not only harmonious with, but also crucial to, a major economic industry. Preserving wetlands is therefore advantageous to nature and the economy. One of the challenges with using ecosystem services in laws regarding development decision-making is that these win-win situations will not always occur, and there will be situations where preservation of a natural feature, like a wetland, does not stack up against the proposed economic use. This is the concern raised by Vucetich, Bruskotter and Nelson, who have argued for intrinsic value to be incorporated into decision-making,⁹⁸ while Maguire and Justus have argued that intrinsic values should be incorporated into decision-making as a form of instrumental value.⁹⁹ For example, if the cultural and recreational values associated with nature are considered as part of a balancing of values, it may tip the scales towards its preservation or protection.

A glance at the decisions made under Australia's national environmental legislation, the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), shows that development typically prevails. Of 6403 referrals received in an almost 20-year period, a total of 21 proposals have been refused¹⁰⁰ — a mere 0.3 per cent. Importantly, this is also a regime where ecosystem services are not explicitly part of the decision-making framework, but the broad discretion given to decision-makers means that ecosystem services can be considered.

Of the few projects that have been refused, ecosystem services have sometimes factored into the decision-making context. One such project was the proposed canal estate at Ralphs Bay in Lauderdale, Tasmania.¹⁰¹ Opposition to the project focused on the ecosystem services provided by the bay, including denitrification of water, habitat for a wide range of species and migratory birds, and aesthetic, community and recreational values.¹⁰² Ultimately the project was refused, with ecosystem services cited as a reason for refusal, and the decision-maker concluding that the likely ecological and social impacts of the development

⁹⁸ Vucetich, Bruskotter and Nelson (n 36) 327.

⁹⁹ Maguire and Justus (n 24).

¹⁰⁰ Australian Government Department of the Environment and Energy, *Annual Report 2018–2019, Appendix 4A: Statistics and Other Information* (Report, 2019) <<https://www.transparency.gov.au/annual-reports/department-environment-and-energy/reporting-year/2018-2019-57>>. Note that this figure, which is current to May 2020, includes actions deemed 'clearly unacceptable' at the referral stage, and actions not approved at the approval stage.

¹⁰¹ Australian Government, Department of the Environment and Heritage, *EPBC Act Referral no 2006/3193*.

¹⁰² Jane MacDonald and Jess Feehely, 'Ralphs Bay Saved: A Tasmanian Story' (2010) 1(2–3) *National Environmental Law Review* 38, 38.

would outweigh the economic benefits.¹⁰³ However, this was not an easily won victory; it was the outcome of years of targeted campaigning and legal action.¹⁰⁴

A large-scale, multi-year community campaign also influenced the outcome in another high-profile project refusal — the Traveston Crossing Dam. This project was proposed by the Queensland State Government in 2005 as a solution to extensive and prolonged drought in the south-east of the State. As a major infrastructure project, it required a number of approvals at both the State and Commonwealth levels. After a lengthy and controversial environmental impact assessment process,¹⁰⁵ the Queensland Government recommended it be approved, subject to approximately 1200 conditions.¹⁰⁶ However, the project was refused approval at the Commonwealth level, due to likely significant impacts on listed threatened species and communities,¹⁰⁷ namely, the Mary River cod, the Mary River turtle and the lungfish.

The proposed dam was to be constructed on the Mary River in South East Queensland, which was recognised as one of the last remaining spawning sites of the Queensland lungfish, a species dating back 180 million years. Importantly, key habitats for the lungfish had been destroyed by other dam and weir development.¹⁰⁸ Although these species do not provide a service for humans that can be valued economically, the existence value of such endemic species is a clear cultural value.

While the refusal of approval was a win for this cultural value, both in substance and in effect, there were many more complex issues underpinning the refusal. There had been a heavily coordinated opposition effort, spearheaded by an unlikely alliance of environmentalists, farmers, indigenous peoples and landholders.¹⁰⁹ The dam would have resulted in the acquisition and flooding of high-quality agricultural land, homes, communities, and sites of Aboriginal significance. It was also viewed as a sacrifice of peri-urban land and values as a

¹⁰³ Ibid 46.

¹⁰⁴ See *ibid* for a detailed analysis of the process.

¹⁰⁵ See, eg, Kim de Rijke, 'The Symbolic Politics of Belonging and Community in Peri-Urban Environmental Disputes: The Traveston Crossing Dam in Queensland, Australia' (2012) 82(3) *Oceania* 278.

¹⁰⁶ Queensland Government Coordinator-General, *Coordinator-General's Evaluation Report: Traveston Crossing Dam Stage 1* (Report, October 2009) <<http://www.statedevelopment.qld.gov.au/resources/project/traveston-crossing-dam/traveston-crossing-dam-synopsis-full-report.pdf>>.

¹⁰⁷ Notice of Proposed Decision 2006/3150.

¹⁰⁸ Larissa Waters, 'Queensland and the Traveston Dam' in Tim Bonyhady and Andrew Macintosh (eds), *Mills, Mines and Other Controversies: The Environmental Assessment of Major Projects* (Federation Press, 2010) 125, 148–9.

¹⁰⁹ de Rijke (n 105).

solution to a water crisis in a major city (Brisbane),¹¹⁰ epitomising the city/country divide that has permeated discourse in environmental decision-making in Queensland.¹¹¹

In some ways, the Traveston Dam example is the reverse of the wetland protections under fisheries laws in the example above. In the fisheries context, the economic protection of fish habitat was the motivator for protection of wetlands, with protection of the more intrinsic values of wetlands a by-product of this. In the Traveston Dam example, the intrinsic value of a handful of endemic species was the stated motivation for the decision, with flow-on effects for societal and economic values. Although it may be tempting to point to the Traveston Dam example to prove that intrinsic values are well integrated in development approval laws and policies, the decision is a statistical outlier, making it very much the exception rather than the rule.

What these examples do demonstrate is that the current system for environmental assessment and approval in Australia, heavily influenced by administrative discretion, does not favour environmental protection. The examples where projects have been refused have involved appeals based on both ecosystem services and intrinsic value, indicating a place for both framings. However, these examples have also arisen in contexts where communities and environmental groups have fought hard for ecosystem services and intrinsic value to influence the outcome, suggesting a need for those concepts to permeate the decision-making framework at a deeper level.

C *Protected Areas*

Protected areas that are quarantined from development offer the strongest protections for nature at this point in time. For example, the object of the *Nature Conservation Act 1992* (Qld) is the 'conservation of nature', and that conservation object is not expressed as a factor to be weighed against development, economic, social or any other competing interests.¹¹² Nature is defined to include 'all aspects of nature', and includes, without limitation, 'ecosystems and their constituent parts, all natural and physical resources, natural dynamic processes and the characteristics of places, however large or small that contribute to their biological

¹¹⁰ Julie Matthews, Tim Smith and Robert Mangoyana, 'The Conquest of Peri-Urban: Sustainability and Postcolonialism' (2009) 5(4) *International Journal of Environmental, Cultural, Economic and Social Sustainability* 1.

¹¹¹ See, eg, Rowena Maguire et al, *Environmental, Planning and Climate Law in Queensland* (LexisNexis, 2020) 30.

¹¹² *Nature Conservation Act 1992* (Qld) s 4.

diversity and integrity or their intrinsic or scientific value'.¹¹³ The Act achieves this through the declaration of various classes of protected areas, such as national parks, conservation parks, resource reserves and nature refuges on private land, and the management of wildlife therein.

A national park may be declared by regulation,¹¹⁴ and must be managed to:

- (a) provide, to the greatest possible extent, for the permanent preservation of the area's natural condition and the protection of the area's cultural resources and values; and
- (b) present the area's cultural and natural resources and their values; and
- (c) ensure that the only use of the area is nature-based and ecologically sustainable; and
- (d) provide opportunities for educational and recreational activities in a way consistent with the area's natural and cultural resources and values ...¹¹⁵

This provides a strong degree of protection for nature, in that there is little scope for discretion; unlike a development approval law, a decision-maker does not have scope to weigh up development potential against environmental protection goals. However, the regime does not exist purely to protect intrinsic values; the very fact that 'cultural resources and values' are mentioned introduces a human concept of valuation into the law. It also allows for some human use and enjoyment of national parks, although in a manner consistent with protection of environmental values. What this indicates is that, at this point in time, even the laws most aligned with intrinsic views on nature incorporate notions of instrumental value, yet strong environmental protection has still been delivered.

IV ETHICAL USE OF THE ECOSYSTEM SERVICES CONCEPT IN LAW AND LEGAL FRAMEWORKS

Several broad observations about the current legal framework may be drawn from the case studies outlined above. First, ecosystem services as a concept already informs some environmental law and policy and decision-making in Australia, although not always in an overt way. Second, in discretionary decisions, lobbying for the consideration of ecosystem services and intrinsic value has resulted in better outcomes for the environment. Third, law can and does incorporate notions of the intrinsic value of nature, although generally not exclusively. Even the strongest recognition of intrinsic value (in protected areas law) also incorporates notions of instrumental value (eg recognition of cultural value). Finally,

¹¹³ Ibid s 8.

¹¹⁴ Ibid s 29(1)(b).

¹¹⁵ Ibid s 17(1).

incorporating intrinsic value as a form of instrumental value has still resulted in robust protection of natural areas, as well as allowing it to be considered as part of the decision-making framework in discretionary decisions.

If one is to accept that the ecosystem services concept is valid to integrate into decision-making — acknowledging this does not appeal to everyone — there are already examples of it working in practice that can be built upon. In many instances, the ecosystem services concept is not expressly integrated into legislation, but doing so would ensure its consideration in decision-making processes — especially if it were coupled with a decrease in administrative discretion. Ensuring that notions of intrinsic values are incorporated into this legislation and decision-making processes will not necessarily appease the strongest critics of the ecosystem services paradigm, but it will go some way towards ensuring that their valid concerns are taken into account.

The incorporation of the intrinsic value concept into legislation could be supplemented by guidance within the literature as to how that concept can be used ethically. Jax et al argue that three ethical questions must be considered: who makes the choices regarding use, which values are included or highlighted and which are excluded or obscured, and who is impacted by choices regarding ecosystem service use.¹¹⁶ Decisions must be made on a participatory basis, including the viewpoints of those who are affected by ecosystem services.¹¹⁷ Policy-makers must also be careful to ensure that non-monetary values are not obscured by monetary values,¹¹⁸ and it must be accepted that the ecosystem services narrative may be used in different ways.¹¹⁹ There is also a need to consider trade-offs and conflicts, and to understand that the provision of an ecosystem service and the preservation of biodiversity are not always the same thing.¹²⁰ For example, Bell-James and Lovelock discuss how removal of bund walls may increase the extent of saltwater wetlands and provide a carbon sequestration service, but this may occur at the expense of freshwater wetlands and biodiversity such as birds, which are dependent on these habitats.¹²¹

Luck et al argue that the context is essential when determining the ethical bounds of the ecosystem services concept:

¹¹⁶ Jax et al (n 17) 262–5.

¹¹⁷ *Ibid* 264.

¹¹⁸ *Ibid*.

¹¹⁹ *Ibid* 265.

¹²⁰ *Ibid* 266.

¹²¹ Justine Bell-James and Catherine E Lovelock, 'Legal Barriers and Enablers for Reintroducing Tides: An Australian Case Study in Reconverting Pondered Pasture for Climate Change Mitigation' (2019) 88 *Land Use Policy* 104192.

[A]pplications of the ecosystem services concept that involve the monetisation or commodification of nature raise a raft of ethical issues that are not necessarily pertinent to using the concept to raise awareness or develop strategic arguments. Therefore, it is vital to recognise the context dependence of ethical concerns to ensure that the most relevant concerns are addressed for a given application.¹²²

Where the concept is being used as a metaphor without commodification, Luck et al argue that the anthropocentric framing of the concept can be addressed by using multiple metaphors to describe nature, and not just by relying on ecosystem services (eg stewardship of nature). The ethical considerations regarding commodification can be addressed by using non-monetary measures of valuation as well.¹²³ Schröter et al suggest that the concept can be used ethically, especially where notions of intrinsic value are integrated. It may also be a way to reconnect an increasingly modernised society with nature.¹²⁴ Similarly, Ruhl suggests that the ecosystem services concept can be used to complement consideration of ecological and intrinsic values, rather than to replace those values.¹²⁵

A recent example from Victoria may address some of these issues, as well as concerns regarding the separation of ecosystem services. Victoria's Marine and Coastal Policy 2020 recommends the use of an ecosystem service-based approach to manage the marine and coastal environment in a way that sustains ecosystems to meet both their intrinsic needs and the needs of humans.¹²⁶ Following on from this, the policy suggests that 'the ability of marine and coastal ecosystems to support the provision of goods and services must be maintained'.¹²⁷ These goods and services are very broadly defined in Appendix 3 to include air purification, climate regulation, regulation of water flows, food and water services, as well as recreation, aesthetic and spiritual experience, inspiration for culture, art and design, and cultural heritage.¹²⁸ While some flaws exist with this policy — for example, it is non-binding — it is a good example of drawing together ecosystem services, both intrinsic and instrumental, to require that they be considered holistically. It could also be used as a model for developing binding rules about protecting and sustaining ecosystem services, including in other contexts.

¹²² Luck et al (n 20) 1027.

¹²³ Ibid 1025.

¹²⁴ Schröter et al (n 21) 515.

¹²⁵ Ruhl (n 16) 332.

¹²⁶ Victoria State Government, *Marine and Coastal Policy* (March 2020) <https://www.marineandcoasts.vic.gov.au/___data/assets/pdf_file/0027/456534/Marine-and-Coastal-Policy_Full.pdf> 2.1.

¹²⁷ Ibid 2.3.

¹²⁸ Ibid Appendix 3.

V CONCLUSIONS

There are many criticisms of the ecosystem services concept, with opponents either against the concept absolutely, or against the commodification of nature. This article has not entered into the debate regarding commodification. Rather, it has demonstrated that most applications of the ecosystem services concept in Australia to date do not involve commodification, and instead involve it being used as a metaphor for nature.

This article has also argued that the ecosystem services concept can be used in law in an ethically defensible way, by integrating anthropocentric values (eg carbon sequestration, shoreline protection) with intrinsic values, and ensuring that they are considered holistically in decision-making. It is acknowledged that this is not an approach that will appease the strongest critics of ecosystem services, but it aims to strike a balance between their concerns and the need to ensure more robust protection for the natural environment.

Further, it is acknowledged that separation and commodification of ecosystem services are increasingly common in Australia's policy framework — for example, through the Emissions Reduction Fund. In addition to the ethical concerns raised regarding commodification, there is a risk that nature simply may not win when balanced against other considerations. For example, when considering the storm surge protection capacity of mangroves, in some instances allowing mangroves to retreat inland will be economically sound, perhaps due to the economic value of carbon sequestered. However, in other areas, defending multi-million dollar coastal properties with hard structures while sacrificing wetlands may be more defensible from a purely economic perspective. Untangling these complex issues is beyond the scope of this article, but it is an area in need of further analysis.