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Public Resource Ownership and Community Engagement in a Modern Energy Landscape

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ARTICLE

Public Resource Ownership and Community Engagement in a Modern Energy Landscape

SAMANTHA HEPBURN*

*The most important structural solution to the rush toward
final disorientation is to restore some harmony between human
laws and the laws of nature by giving law back to networks of
communities.*

- Fritjof Capra & Ugo Mattei, "The Ecology of Law"

*Property belongs to a family of words that, if we can free them
from the denigrations that shallow politics and social fashion
have imposed on them, are the words, the ideas, that govern our
connections with the world and with one another:*

property, proper, appropriate, propriety.

- Wendell Berry

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I. INTRODUCTION

Spectacular increases in global energy demand over the last few decades have prompted a corresponding expansion in onshore energy production, facilitated by innovative and enabling technological advancements.¹ Within this context, existing resource ownership frameworks have been subjected to increasing conflict and tension.² This has been particularly apparent in public

1. See Ross H. Pifer, *A Greener Shade of Blue: Technology and the Shale Revolution*, 27 NOTRE DAME J.L. ETHICS & PUB. POL'Y 131, 134 (2013) (arguing that the technological revolution that underpins the development of shale has been responsible for reshaping the United States energy economy).

2. See Michael M'Gonigle & Louise Takeda, *The Liberal Limits of Environmental Law: A Green Legal Critique*, 30 PACE ENVTL. L. REV. 1005 (2013) (discussing the connectivity between energy growth and resource conflict and highlighting importance of implementing a new cultural narrative that looks beyond the paradigm of economic growth.); see also Carol M. Rose & Shelley Rose Saxer, *A Prospective Look at Property Rights*, 20 GEO. MASON L. REV. 721 (2013) (where the authors discuss the increasing tensions in ownership paradigms); INT'L ENERGY AGENCY, KEY WORLD ENERGY STATISTICS (2016), http://www.iea.org/publications/freepublications/publication/KeyWorld_Statistics_2015.pdf [https://perma.cc/VJG7-E595] (providing a statistical analysis of the advancements); U.S. ENERGY INFO. ADMIN., INT'L ENERGY OUTLOOK 2016 (2016), [http://www.eia.gov/outlooks/ieo/pdf/0484\(2016\).pdf](http://www.eia.gov/outlooks/ieo/pdf/0484(2016).pdf) [https://perma.cc/YZ4B-JCP4] (Over the past

resource frameworks, where ownership regimes have struggled to respond to interface schisms between public and private entitlements and escalating demand for greater community involvement in onshore resource development.³ The deceleration of fossil fuel production has contributed to these conflicts because the focus is increasingly shifting towards the acceleration of onshore gas as a strategic transitional resource within a carbon economy.⁴ The scale and form of the conflict in Australia has highlighted core structural deficiencies in the public resource framework.⁵ Public resource ownership is grounded in the disaggregation of private land from state resource ownership. The implicit assumption is that sub-strata resources should be vested in the state because the state has the administrative capability to reinject the benefits of resource exploitation back into the community. The public interest obligations of the state, as resource owner, are assumed to reside in efficiency imperatives. The income generated from sub-strata resource exploitation is collected by the state and managed for the benefit of the public as a whole.⁶

In a modern public resource framework, the justification for state ownership of sub-surface resources has, however, become increasingly unclear. As Huffman has stated, we presume that the public management of resources is preferable to the private,

decade, Australia's domestic gas production has increased by 3.5% and approximately 20% of that gas comes from coal bed methane production in onshore basins. The United States Energy Information Administration (US EIA) has estimated that technically recoverable onshore shale gas deposits in Australia to be 396 trillion cubic feet, which is enough gas to meet Australia's current needs for the next 396 years).

3. See Shannon O'Lear & Paul F. Diehl, *The Scope of Resource Conflict: A Model of Scale*, 12 WHITEHEAD J. DIPL. & INT'L REL. 27 (2011) (the authors outline three core elements instrumental to the expansion of resource conflict, those being: location, the nature of the stakeholders and the relationship that exists between stakeholders).

4. See generally INT'L ENERGY AGENCY, WORLD ENERGY OUTLOOK (2011), <http://www.worldenergyoutlook.org/goldenageofgas> [<https://perma.cc/R422-J4LL>] (describing the existing era as the 'golden age of gas').

5. See Tina Hunter & Michael Weir, *Property Rights and Coal Seam Gas Extraction: The Modern Property Law Conundrum*, 2 PROP. L. REV. 71, 77 (2012).

6. EUGENE KUNTZ, A TREATISE ON THE LAW OF OIL AND GAS 59-60 (1987); see generally Ian Murray, *The Mineral Resource Rent Tax Is Dead, Long Live Resource Rent Taxes?*, 40 U.W. AUSTL. L. REV. 111 (2015) (in Australia, even this assumption is questionable, given the capacity of the resource sector to minimize tax given the broad concessions available under the *Petroleum Resource Rent Tax Assessment Act*).

however, this presumption is grounded in coded behaviour.⁷ The actual situation is that public management of resources limits or controls the way in which private or special interests affect resource allocation. Thus, if the objective is to maximise the net benefits to all members of society, whilst at the same time ensuring fairness in the costs and benefits of that management, it is by no means clear that this is achieved by the conferral of controlled ownership of public resources in the state.⁸

This article argues the social, environmental and ecological complexity of onshore resource expansion requires a corresponding expansion in the public interest responsibilities owed by the state, as public resource owner. Public interest should not be treated as a presumptive fact and must involve a vigorous investigation by the state of the benefit and utility of each resource development proposal. This must necessarily include a thorough evaluation of all competing interests. A critical element in this process is the inclusion of community participation processes, ensuring that effective and transparent communication and disclosure protocols with community representatives are conducted. Public interest responsibilities are not satisfied where it is clear that resource development decisions have not been subjected to strong community engagement protocols. Public interest in the social, economic and environmental impacts of resource development must be evaluated through connection, disclosure, engagement and integration.⁹

The article is divided into five parts. Following the introduction, Part two evaluates the operational deficiencies associated with public resource frameworks in the context of an expanding onshore energy landscape. The public resource framework in Australia is based upon the largely unexamined fragmentation between surface ownership and sub-surface

7. James L. Huffman, *Public Land Management in an Age of Deregulation and Privatization*, 10 PUB. LAND L. REV. 29, 30 (1989).

8. *Id.*

9. *Id.* at 29-31 (discussing the problems connected with the public and private divide within public resource frameworks, noting that in order to maximize net social benefit within a public resource framework, more attention must be paid to the fundamental choice between public and private control); see also James K. Boyce, *From Natural Resources to Natural Assets*, in NATURAL ASSETS: DEMOCRATIZING ENVIRONMENTAL OWNERSHIP 7 (James K. Boyce & Barry G. Shelley eds., 2003).

resources.¹⁰ This ownership disaggregation has generated a number of schisms that have not been effectively addressed by either common law or statute.¹¹ This part examines the uncertainty, confusion and conflict generated by this fragmentation. It argues that these difficulties alter the underlying public interest responsibilities held by the state. Public interest within an ownership framework divided by unclear common law and statutory boundaries depends upon the implementation of improved governance that articulates public and private domains and clarifies how communities connect and engage with these domains.¹²

Part three examines two core social obligation doctrines that reinforce the importance of broad responsive public interest obligations. The first is the public trust doctrine and the second is the doctrine of propriety and the associated jurisprudence of land ethics.

The public trust doctrine imposes trust obligations on the state over public natural resources and in so doing, ensures ongoing state supervision of those resources.¹³ This part argues that the public trust doctrine should either be applied in Australia or, its core tenets should influence a stronger development of public

10. See Boyce, *supra* note 9, at 24 (The author notes that in practice, despite the potency of landowner control, property rights are neither fully specified or immutable. Thus, as societies change, so does the way in which they define and allocate property.).

11. Robert J. Duffy, *Political Mobilization, Venue Change and the Coal Bed Methane Conflict in Montana and Wyoming*, 45 NAT. RESOURCE J. 409, 414 (2005) (noting that land disputes are an issue for both public and private resource frameworks because to the frustration of landowners, mineral rights under both frameworks will generally take precedence over surface rights.); see generally Pamela O'Connor, Sharon A. Christensen, William D. Duncan, & Angela Phillips, *Regulation of Land Access for Resource Development: A Coal Seam Gas Case Study from Queensland*, 21(2) AUSTL. PROP. L.J. 110 (discussing the issue in the public resource framework noting some of the difficulties connected with private land access agreements which landholders and third parties enter into).

12. See Eric Freyfogle, *Goodbye to the Public-Private Divide*, 36 ENVTL. L. 7, 23 (2006) (arguing that the future is likely to see new and innovative ways in which the public interest in land will be identified and protected.).

13. See Michael C. Blumm, *The Public Trust Doctrine and Private Property: The Accommodation Principle*, 27 PACE ENVTL. L. REV. 649, 650 (2010); see also Nat'l Audubon Soc'y v. Superior Court, 658 P.2d 709, 712 (Cal. 1983) (holding that "the core of the public trust doctrine is the state's authority as sovereign to exercise a continuous supervision and control over the navigable waters of the state and the land underlying those waters").

interest duties in order to promote a more rigorous integration of community engagement protocols. The irreducible core of the public trust doctrine is posited on the assumption that property rights need to be responsive to evolving social and environmental concerns, and therefore must adapt to suit the needs of a changing community.¹⁴ Public resource ownership generates strong communitarian responsibilities and should be exercised in a manner that is consistent with broader social welfare objectives.¹⁵ Land and natural resources are a component of an interconnected habitat, which means ownership, should not be treated as an autonomous entitlement. As outlined by the Supreme Court of Wisconsin in *Just v. Marinette County*, an owner of land has “no absolute and unlimited right to change the essential natural character of his land so as [to] use it for a purpose for which it was unsuited in its natural state and which injures the rights of others.”¹⁶ The public trust doctrine uses trust duties to encourage the state to exercise their trust responsibilities by reference to the correlative entitlements of the community of life that exists around them.¹⁷ These principles have, in turn, encouraged an ecological reconstruction of ownership norms.¹⁸

The doctrine of propriety and the jurisprudence of land ethics are established social obligation principles that seek to impose stronger social responsibilities upon land and resource owners. The

14. The most significant public trust decision in the United States was *Illinois Central Railroad Co. v. Illinois*, 146 U.S. 387 (1892); see Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 489 (1970) (describing *Illinois Central Railroad Co. v. Illinois* as the most celebrated case in American public trust law); see also Richard A. Epstein, *The Public Trust Doctrine*, 7 CATO J. 411, 412 (1987) (examining the legal rules that limit the power of the legislature to dispose of public property.)

15. See generally Joseph William Singer, *The Reliance Interest in Property*, 40 STAN. L. REV. 611 (1988) (noting that resource ownership attracts variable).

16. *Just v. Marinette County*, 201 N.W.2d 761, 768 (1968).

17. See Sax, *supra* note 14, at 473 (noting that the public trust doctrine is one of the only legal concepts available in America which has the breadth and substantive content to allow it to respond to community concerns regarding natural resource management); see also Jennifer A. Kreder, *The Public Trust*, U. PA. J. CONST. L. 1425, 1446 (2016) (noting that the public trust is a trust for the benefit of the people and public good rather than a prerogative for the advantage of the government or the benefit of private individuals).

18. See Eric T. Freyfogle, *Ethics, Community, and Private Land*, 23 ECOLOGY L.Q. 631, 650 (1996).

doctrine of propriety builds upon the core Aristotelian notion that the human being is a social and political animal and cannot be self-sufficient when functioning from a purely individualistic perspective.¹⁹ Land ethics are a body of ethical premises relevant to the ownership of land.²⁰ The core assumption is that the decisions landowners make require greater collaborative input from the community in which the land exists because land is an integral part of our habitat. Land ethics provide a normative framework that encompasses the value of personhood and the important goal of enhanced social welfare.²¹ Ownership frameworks need to be informed by principles of propriety and public good because they focus upon social relations rather than pure market value giving them greater normative appeal.²²

Part four of the article examines the growing importance of social licensing protocols in the assessment and approval of onshore resource titles. It argues that this trend provides formal acknowledgement from industry that community engagement protocols have become public interest responsibilities.²³ The social license to operate is an important device for industries operating within the onshore resource sector as so many projects increasingly depend upon community approval in order to function without disruption. Social licensing mirrors the legal licensing process from

19. This concept is grounded in the jurisprudence known as ‘virtue ethics,’ which adopts an ethical perspective that seeks to emphasize virtues or moral character in contradistinction to duties, rules or the consequences of actions. As outlined by Rosalind Hursthouse, “[a] utilitarian will point to the fact that the consequences of doing so will maximize well-being, a deontologist to the fact that, in doing so the agent will be acting in accordance with a moral rule such as ‘Do unto others as you would be done by’ and a virtue ethicist to the fact that helping the person would be charitable or benevolent.” See ROSALIND HURSTHOUSE, *ON VIRTUE ETHICS 1* (Oxford University Press ed., 1999); see also RICHARD KRAUT, *ARISTOTLE ON THE HUMAN GOOD* 15-54 (1989) (discussing the Aristotelian perspective).

20. See Eduardo M. Peñalver, *Land Virtues*, 94 *CORNELL L. REV.* 821, 855-58 (2009) (arguing that virtue ethics offers a more effective approach to land-use policy than economics because it has the capacity to take account of incommensurable values).

21. *Id.* at 863.

22. Joseph William Singer, *Democratic Estates: Property Law in a Free and Democratic Society*, 94 *CORNELL L. REV.* 1009, 1035 (2009).

23. See Gregory S. Alexander, *Pluralism and Property*, 80 *FORDHAM L. REV.* 1017, 1023 (2011) (noting that social obligation theorists argue that property owners are both right and duty-holders).

a communitarian perspective, confirming that resource development is socially acceptable to the community in which it operates.²⁴ In this respect, social licencing operates as an auxiliary, non-mandatory process. In many ways however, social licensing has become more significant for industries operating in this sector because it improves the reputational legitimacy of the industry.²⁵ This part examines recent examples of social licensing to illustrate how community engagement has influenced corporate social strategies.

II. PUBLIC RESOURCE OWNERSHIP

A. Public and Private Ownership Models

Land and natural resources are privy to ownership under either public or private ownership frameworks. The adoption of one or other of these ownership regimes for the management and exploitation of land and natural resources is largely a consequence of history and legislative context.²⁶ It is also, inevitably, the consequence of market efficiencies.²⁷ The public ownership of sub-surface natural resources is formally justified on the grounds that it provides governments with economic benefits that may be distributed for community benefit.²⁸ On this basis, the Australia public resource framework assumes that whilst land may be subject to public or private ownership, the natural resources residing within the land are owned by the state and this

24. See generally Jen Schneider, *Barriers to Engagement: Why it is Time for Oil and Gas to Get Serious about Public Communication*, OIL AND GAS FACILITIES: CULTURAL MATTERS (Apr. 2013), https://www.academia.edu/3291942/Barriers_to_Engagement_Why_it_is_Time_for_Oil_and_Gas_to_Get_Serious_about_Public_Communication [<https://perma.cc/3US7-YHHR>].

25. See Don C. Smith & Jessica M. Richards, *Social License to Operate: Hydraulic Fracturing-Related Challenges Facing the Oil & Gas Industry*, 1(2) OIL & GAS, NAT. RESOURCES & ENERGY J. 81 (2015).

26. *Id.*

27. See Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. PAPERS & PROC. 347, 350 (1967) (where the author argues that property regimes will inevitably seek reallocation towards the most efficient system).

28. This market based efficiency response to natural resource management has been rejected by environmental ethicists; see, e.g., Mark Sagoff, *On Preserving the Natural Environment*, 84 YALE L.J. 205, 225 (1974) (noting that realistically there is no economic or even utilitarian rationale available for preserving the natural environment).

entitlement is formalized through the implementation of explicit statutory vesting provisions.²⁹ Private landowners in a public resource framework retain common law entitlements to the surface estate. Public resources are conceptually disaggregated from the bundle of rights that make up the land estate despite corporeal integration.³⁰

This framework has historical roots in the regalian system, whereby the minerals existing within the ground were assumed to belong to the king as the head of the state because this was for the greatest advantage of society.³¹ In a modern context, these historical assumptions form strong efficiency and management rationales.³² The postulation is that valuable sub-surface resources should be properly and strategically managed by the state to ensure that the economic benefits of commercial exploitation are proportionately distributed to all members of the public.³³ Theoretically, revenue generated by the commercialization of sub-surface resources is re-injected back into

29. Public resource ownership is operational in all states and territories in Australia. See generally Yinka Omorogbe & Peter Oniemola, *Property Rights in Oil and Gas Under Domanial Regimes*, in PROPERTY AND THE LAW IN ENERGY AND NATURAL RESOURCES 115, 118 (Aileen McHarg et. al. eds., 2010) (discussing the operational distinctions of private and public resource frameworks).

30. SAMANTHA HEPBURN, MINING AND ENERGY LAW IN AUSTRALIA 11 (2015) (noting that the public resource framework depends upon the fragmentation of land and resource ownership despite their physical coalescence, through legislative intervention.).

31. The term “regalian” refers to the right that the entire State, represented by the King, reserves to itself to dispose of the ownership of the underground as if it were public property, independent of the private property of the land which contains it and to do so for the benefit of society. See Omorogbe & Oniemola, *supra* note 29, at 120.

32. PROPERTY AND THE LAW IN NATURAL RESOURCES, *supra* note 29, at 12 (noting that ownership arrangements that separate land from mineral resources are good for state planning and administration but lay the foundation for conflict between public and private domains); see also Patrick Wieland, Going Beyond Panaceas: Escaping Mining Conflicts in Resource-Rich Countries Through Middle-Ground Policies, 20 N.Y.U ENVTL. L.J. 199, 209 (2013) (citing Emeka Duruigbo, The Global Energy Challenge and Nigeria’s Emergence as a Major Gas Power: Promise, Peril or Paradox of Plenty?, 21 GEO. INT’L ENVTL. L. REV. 395, 440 (2009)) (arguing that the main rationalization for public ownership of natural resources is that resources should be considered ‘public property’ to ensure that they are conserved and managed for the welfare of all citizens).

33. See Mario J. Rizzo, *The Mirage of Efficiency*, 8 HOFSTRA L. REV. 641, 642 (1980) (arguing that the efficiency norm is oblique and largely impractical because its success depends upon large informational input).

the community thereby improving public protection.³⁴ This rationale overlooks broader social values because, as environmental ethicists have argued, economic analysis tends to make efficiency our primary goal as it is based upon the assumption that efficiency corresponds with market preference.³⁵

A private resource framework is not disaggregated in this way. Ownership of the land and the resource are treated as a cohesive totality unless and until the landowner decides to sever the resource and create a mineral estate.³⁶ Any such decision will depend upon individual landowner preference and any unitization obligations.³⁷ The natural resources residing within the sub-strata of the land continue to be vested in the landowner and, subject to the rule of capture and any relevant statutory governance, the decision to exploit the resources resides with the private owner unless and until the lands are publically acquired.³⁸

The public and private ownership frameworks are sourced in two fundamentally different theories. Private resource ownership is grounded in the theory of accession, which assumes that the surface estate and the subsoil exist as a single cohesive ownership unit because, in accordance with natural law, the two are inherently indivisible.³⁹ The theory of accession is encapsulated

34. The classic argument is that public goods must be managed by the state because private producers would not have an incentive to manage them efficiently and in accordance with public interest; see Carol M. Rose, *The Comedy of the Commons: Customs, Commerce and Inherently Public Property*, 53 U. CHI. L. REV. 711, 717-19 (1986).

35. See ERIC T. FREYFOGLE, *Public Interest in Private Land*, in *THE LAND WE SHARE: PRIVATE PROPERTY AND THE COMMON GOOD* (2003).

36. See BARLOW BURKE & ROBERT BECK, *THE LAW AND REGULATION OF MINING: MINERALS AND ENERGY* 59 (2010).

37. See Wieland, *supra* note 32, at 206. Within a private ownership framework it is up to landowners to decide whether to exploit the resource and this means that it is possible for different landowners to diverge in land use preference. Unitization may occur where multiple owners of mineral rights to an oil or gas field are subject to contractual obligations to minimize redundant drilling and extraction processes. See Gary D. Libecapp & Steven N. Wiggins, *Contractual Responses to the Common Pool: Prorationing of Crude Oil Production*, 74 AM. ECON. REV. 87, 87-89 (1984).

38. Boyce, *supra* note 9, at 25.

39. See Earl C. Arnold, *The Law of Accession of Personal Property*, 22 COLUM. L. REV. 103, 103 (1922) (where the author outlines the different categories of accession which include that of 'confusion' or 'commixture,' which amounts to the intermixing of two similar things which cannot be distinguished); see also T. T. Clarke, *The Law of Accession*, 14 J. JURIS. 165 (1870) (noting that accession

within the *ad coelum* maxim, a common law principle that assumes that the owner of land retains rights to the minerals and resources in the sub-strata where those minerals are inextricably connected to the sub-strata.⁴⁰ The essential rationale of the *ad coelum* maxim is that physical connectivity denotes ownership. Consequently, the central design feature of the private resource framework is that private landowners capture all ‘increments in value that are prominently connected with the owned asset.’⁴¹

The public resource framework is grounded in the theory of separation.⁴² The theory of separation assumes that a surface estate is inherently divisible from the subsoil, and therefore minerals and hydrocarbons residing within the subsoil may be disaggregated from that sub-stratum.⁴³ In most public resource frameworks the statutory disaggregation occurs via explicit statutory vesting provisions. The vesting provisions allow minerals and hydrocarbons to be exploited directly by the state, and this in turn, allows the state to issue concessions to third parties. Where a concession is issued, and a third party acquires a resource title, ownership in the resource will generally remain with the state until extraction and subsequent transfer to a third party purchaser.⁴⁴

necessarily arises where the union of two things is so intimate that the one becomes a mere constituent part of the other, and its individuality is destroyed).

40. For a discussion of the *ad coelum* principle, see generally Owen L. Anderson, *Lord Coke, The Restatement, and Modern Subsurface Trespass Law*, 6 TEX. J. OIL GAS & ENERGY L. 203 (2011) (noting that *ad coelum* maxims assert that the surface owner retains ownership of all sub-surface strata down to the center of the earth. This has, however, been qualified and the author notes that United States courts have universally rejected a strict adherence to the *ad coelum* principle preferring to base recovery on proof of actual and substantial harm.).

41. Thomas W. Merrill, *Accession and Original Ownership*, 1 J. LEGAL ANALYSIS 459, 477-78 (2009) (arguing that prominent connection is “hard-wired in the psychology of human perception” so that there are “strong psychological forces that equate physical connectedness with ownership”).

42. Boyce, *supra* note 9.

43. *Id.*; see also Nicholas J. Campbell, Jr., *Principles of Mineral Ownership in the Civil Law and Common Law Systems*, 31 TUL. L. REV. 303, 310 (1956) (noting that state ownership of minerals is more prevalent in civil law countries).

44. For example, the regulation of minerals and hydro-carbons in the public resource system in Australia where legislative provisions explicitly state that ownership of the resource remains with the state until transfer. See, e.g., *Mineral Resources (Sustainable Development) Act 1990* s 11(2) (Austl.) (setting out that minerals that are separated from the land remain the property of the state).

B. Disaggregation of Resources from Land

The bifurcation of land and resource ownership within a public resource framework has generated strong delineational tensions particularly where surface estate activities conflict with the resource extraction processes.⁴⁵ The blurred nature of the ownership interface means that the division between the control rights held by the landowner (a common law ownership concept) and the control rights held by the resource owner (a statutory ownership concept) are indeterminate. This has generated inevitable legal and conceptual collisions.⁴⁶

This collision is particularly manifest in Australia in the vexed issue of land access for holders of onshore resource titles seeking access to sub-surface resources within privately owned land. The prevailing assumption is that the private landowner may preclude access to the public resource titleholder.⁴⁷ This assumption is not legislatively supported, and, further, is fundamentally inconsistent with public interest imperatives that depend upon the efficient exploitation of resources for the benefit of the community as a whole.

Formally, the problem is a consequence of the unclear wording in the vesting provisions. The nature of the state's interest in the resource, and its connection with any underlying radical title to the land, is not defined, meaning that the entitlements of the private

45. See Michael A. Heller, *The Boundaries of Private Property*, 108 YALE L.J. 1163, 1173 (1999) (discussing the importance of boundaries in private ownership and noting that boundary rules are intrinsic, constitutive elements of well-functioning private property regimes that seek to limit spatial fragmentation through direct and indirect mechanisms); see also Hanoch Dagan & Michael A. Heller, *The Liberal Commons*, 110 YALE L.J. 549 (2001); Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus Principle*, 110 YALE L.J. 1 (2000).

46. See generally Bobbie Johnson, *Coalbed Methane Ownership Rights in Wyoming*, 8 GREAT PLAINS NAT. RESOURCES J. 46 (2004) (discussing the problem of individual entitlements in the context of overlapping resources in coalbed methane sites).

47. See JULIAN BODENMANN, MATTHEW CAMERON, KATHRYN O'HARE & EMMA ROSE-SOLOMAN, RESEARCH NOTE: A COMPARATIVE STUDY INTO THE RIGHTS OF LANDHOLDERS TO PREVENT ACCESS TO LAND BY MINING COMPANIES 44 (2012), <http://www.law.uq.edu.au/documents/pro-bonocentre/publications/Research-note-comparative-study-landholders-rights-July-2012.pdf> [https://perma.cc/CT3G-4P5K] (noting that none of the jurisdictions in Australia afford the landholder a general power of veto over land access).

landowners, particularly any right to veto access, is unclear.⁴⁸ Statutory property rights can arise through the validation of a pre-conceived entitlement or through the creation of new property with unknown internal configuration.⁴⁹ The vesting provisions make no attempt to explain how the interest has arisen. Thus, the right is assumed to pre-exist the implementation of the vesting provision. This is further complicated by the fact that prior to the implementation of the vesting provisions, the resource had no pre-existence because it was subject to the common law doctrine of accession.⁵⁰

This delineational uncertainty raises deeper structural concerns about the articulation and distribution of public interest responsibilities. All ownership frameworks must be predicated upon the existence and enforcement of a set of rules that articulate and define the scope and boundary of entitlements. This is particularly crucial in a public resource framework where public and private interests intermingle.⁵¹ Property rights in natural resources cannot simply emerge particularly, as Ostrom has noted, in complex overlapping environments.⁵²

Boundary rules are important because they prevent the over-accumulation of overlapping rights in a commons resource as well

48. See *Newcrest Mining (WA) Ltd v Commonwealth* (1997) 190 CLR 513 (Austl.) (discussing the connection between radical title and issued resource titles).

49. See Mathew Storey, *Not of this Earth: The Extraterrestrial Nature of Statutory Property in the 21st Century*, 25 AUSTL. RESOURCES & ENERGY L.J. 51, 54 (2006) (discussing the different ways of articulating the scope and nature of statutory property); see also Charles A. Reich, *The New Property*, 73 YALE L.J. 733 (1964) (describing government discretion within regulatory frameworks as an important new form of property).

50. See Merrill, *supra* note 41, at 467 (discussing the doctrine of accession and noting that *ad coelum* is a sub-category of the doctrine of accession).

51. Cf. Gregory S. Alexander, *Governance Property*, 160 U. PA. L. REV. 1853, 1870-71 (2012) (noting that the collection of norms and doctrinal tools governing conflict vary but the more social the institution, the greater the collective input); see also HANOCH DAGAN, *PROPERTY: VALUES AND INSTITUTIONS* 232-37 (2011) (arguing that property frameworks need to facilitate greater cooperation amongst intersecting interests).

52. See Elinor Ostrom, *Private and Common Property Rights*, in *ENCYCLOPEDIA OF LAW AND ECONOMICS* 334 (2000), <http://reference.findlaw.com/lawandeconomics/2000-private-and-common-property-rights.pdf> [<https://perma.cc/DE5M-SZED>] (noting that “rules and rulers are required to establish, monitor and enforce a property system”).

as the over-accumulation of rights of exclusion in an anti-commons environment.⁵³ The absence of boundary rules generates distrust and concern. This, in turn, exacerbates conflict resulting in stakeholders being forced to resort to private treaty. This inevitably externalises broader community members from private resource arrangements and diminishes public confidence in the state management processes. Ownership frameworks for natural resources must be explicable and coherent as they play a crucial role in advancing the normative vision of how society and the policy that governs it should be structured.⁵⁴

C. Public Interest Obligations

Public resource frameworks aim to implement an optimal interactive framework between humans and natural resources via the intermediary of the state.⁵⁵ The state, as *de jure* owner of the commons resource, must ensure that in exercising ownership entitlements in public resources, it acts in a manner that maximises public interest.⁵⁶ This is an onerous responsibility, particularly given the dramatic changes occurring within the onshore resource landscape. The increased connectivity between ownership norms, ecological imperatives and market forces has fundamentally shifted public interest beyond economic imperatives.⁵⁷ Neo-classical efficiency rationales no longer adequately capture the inherent value of the human-nature

53. See Heller, *supra* note 45, at 1194; see also Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621, 624 (1998) (outlining the broad anti-commons framework).

54. GREGORY S. ALEXANDER, *COMMODITY AND PROPRIETY: COMPETING VISIONS OF PROPERTY IN AMERICAN LEGAL THOUGHT, 1776-1970*, at 1-2 (1997).

55. *Cf.* Dagan & Heller, *supra* note 45, at 555-59 (noting that ownership frameworks reflect an outdated repertoire of the categories of human interaction).

56. See Omorogbe & Oniemola, *supra* note 29, at 118; see also Ostrom, *supra* note 52, at 335-37 (differentiating between open access resource ownership and common resource ownership and noting that *de jure* government property regimes often lack resources to monitor effective usage, particularly in developing countries).

57. See Lynda L. Butler, *The Pathology of Property Norms: Living Within Nature's Boundaries*, 73 S. CAL. L. REV. 927, 938 (2000) (outlining the connectivity between economics and individualism in ownership norms).

continuum.⁵⁸ A monistic view of public interest ignores social and environmental considerations that transcend market economics.

In *The Tragedy of the Commons*, Hardin argued that open access by all members of the community would encourage over consumption and degradation of common resources.⁵⁹ Hardin argued that the commons locks people into a system that compels them to increase in a world that is limited because “ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons.”⁶⁰ This is further encapsulated in the Aristotelian notion, “that which is common to the greatest number has the least care bestowed upon it.”⁶¹

One of the difficulties with articulating a broader conceptualization of public interest lies in the deeply entrenched notion that public resources must be controlled and the conferral of autonomy and entitlement is, in itself, a public benefit. Hardin argued that controlled ownership of commons resources presents a more effective management option for commons resources because it combats the overconsumption and collective degradation which can flow from an open access regime where unmitigated self-interest reigns.⁶² Hardin did not consider in any detail how private ownership regimes might themselves degrade common resources.

58. See, e.g., Douglas A. Kysar, *Climate Change, Cultural Transformation, and Comprehensive Rationality*, 31 B.C. ENVTL. AFF. L. REV. 555, 588 (2004) (arguing that questions of what we want in the context of climate change “depend not on cost-benefit balancing, but rather on the will of the global community to conceive of and to realize a transformation of culture toward some shared ideal”).

59. Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243, 1248 (1968), <http://science.sciencemag.org/content/sci/162/3859/1243.full.pdf> [<https://perma.cc/SX7F-LR5E>] (arguing that avoiding the tragedy of overexploitation of the commons means that the community must willingly surrender the unfettered “freedom” that characterizes common ownership).

60. *Id.* at 1244.

61. Aristotle, *Discussion of Ideal States*, in THE POLITICS AND CONSTITUTION OF ATHENS, BOOK II, at 33 (Stephen Everson ed., 2d ed. 1996).

62. See Hardin, *supra* note 58; see also James E. Krier, *The Tragedy of the Commons, Part Two*, 15 HARV. J.L. & PUB. POL’Y 325, 329-30 (1992) (explaining Terry Anderson and Donald Leal’s argument that it is wiser to harness self interest than to preach against it, and that social institutions need to provide constructive incentives and this is exactly what private property and free markets offer); Martin Froněk, *The Tragedy of the Commons: Four Decades Later*, 11 COMMON L. REV. 16, 18 (2010) (noting that private rights encourage owners to care for and preserve the resource); Demsetz, *supra* note 27, at 348.

Overuse by private entities licensed by the state has, in the absence of effective oversight, produced degradation and overconsumption. The consequences have been particularly dire where it involves the destruction or diminution of crucial commons resources.⁶³

For example, unconventional gas production has the capacity to significantly deplete or contaminate groundwater aquifers because large volumes of sub-surface water may be removed during the extraction process. This may cause irreversible damage to the water tables.⁶⁴ Groundwater is a crucial source of water in an age when surface supply of water has become less reliable and predictable. Groundwater is also a particularly important source of supply in times of drought. Detailed research about the state of groundwater supplies is yet to be carried out because of the cost and complexity associated with monitoring large aquifer systems. Recent studies have, however, revealed that groundwater systems across the globe are experiencing significant stress, with the large-scale depletion apparent in the Canning Basin in Australia being directly linked to onshore mining activities in the region.⁶⁵

Many subsequent property theorists have critiqued Hardin's essay. Heller argued that strong exclusionary rights in parcelized land might actually lead to an unproductive 'anti-commons' tragedy.⁶⁶ The anti-commons represent the inverse of the open-

63. See Carol M. Rose, *Energy and Efficiency in the Realignment of Common-Law Water Rights*, 19 J. LEGAL STUD. 261 (1990); see also Carol M. Rose, *A Dozen Propositions on Private Property, Public Rights, and the New Takings Legislation*, 53 WASH. & LEE L. REV. 265, 267 (1996) (arguing that Anglo-American legal principles recognized both private property rights and public rights, particularly in resources that are not easily turned into private property, and that takings law is essentially an effort to balance public and private rights as they evolve over time).

64. See M. Alexander Pearl, *The Tragedy of the Vital Commons*, 45 ENVTL. L. 1021, 1053 (2015) (arguing that the restoration of the "vital commons" is difficult and exhaustion is extremely dire due to the essential nature of the resource, "[o]veruse leading to depletion is the epitome of apocalypse").

65. Two University of California, Irvine studies indicate that a third of the groundwater basins across the globe are in distress. See Alexandra S. Richey et al., *Quantifying Renewable Groundwater Stress with GRACE*, 51 WATER RESOURCES RES. 5217, 5228 (2015); Alexandra S. Richey et al., 1, *Uncertainty in Global Groundwater Storage Estimates in a Total Groundwater Stress Framework*, 51 WATER RESOURCE RES. 5198 (2015).

66. See Heller, *supra* note 53, at 624 (arguing that with too many owners of property fragments, resources become prone to waste either through overuse in a

access problem in that conferral of multiple rights of exclusion can actually result in land and resources being utilized inefficiently.⁶⁷ In an anti-commons tragedy, “too many individuals have rights of exclusion over” a specified piece of property, and this excessive fragmentation generates widespread under-utilization of valuable resources.⁶⁸ Private owners are encouraged to hold out for high prices and this can often mean valuable resources go unused.⁶⁹ It can also produce high transaction costs resulting in welfare-enhancing improvements being overlooked.⁷⁰

Carol Rose argued that open access utilisation of commons resources is not always tragic, particularly where it reveals a common benefit. She noted that the increased utilisation of a common resource could, in some situations, stimulate greater investment and return.⁷¹ Elinor Ostrom argued that users of the commons could overcome the ‘tragedy’ scenario connected with the overconsumption and degradation of commons resources where well-structured governance and management regimes have been implemented.⁷²

Predicting behaviour within a commons framework is difficult given the infinite contextual and social variations that can exist.⁷³ The commons is, necessarily, a public domain as it contains a

commons or underuse in an anti-commons. Well-functioning property regimes prevent such waste by drawing boundaries that constrain owner’s choices about fragmentation).

67. Inefficiency in this context refers in the pure sense to the Pareto principle. A situation is Pareto ‘optimal’ or Pareto ‘efficient’ if there is no alternative which would constitute a Pareto ‘improvement.’ Gerard Debreu, *Valuation Equilibrium and Pareto Optimum*, 40 PROC. NAT’L ACAD. SCI. 588, 588 (1954).

68. Heller, *supra* note 53, at 677.

69. For further discussion on the anti-commons, see Heller, *supra* note 53, at 633-640. See also Edward J. Janger, *Privacy Property, Information Costs, and the Anticommons*, 54 HASTINGS L.J. 899, 921 (2003).

70. See Heller, *supra* note 53, at 688.

71. See Rose, *supra* note 34, at 768.

72. ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION 88-102 (1990) (providing a list of different circumstances where such well-structured systems have worked effectively).

73. See generally E. Donald Elliott, *The Tragi-comedy of the Commons: Evolutionary Biology, Economics and Environmental Law*, 20 VA. ENVTL. L.J. 17 (2001) (noting that the complexity of commons resources and of human interactions and reactions to those resources makes it difficult to predict commons behavior).

diverse array of natural and cultural resources, each of which have multiple dimensions. The conferral of de jure ownership rights to the state in commons resources must therefore be subject to broad, evolving public interest responsibilities that transcend ownership paradigms and connect to the comprehensive public management obligations of the state.

These obligations have progressed significantly in the context of natural resource ownership. There has been a clear delineational shift away from the early preservationist perspective of environmental legislation, which was directed at the actions of governmental agencies, to more recent preventionist legislation, directed at the actions of private individuals.⁷⁴ Within this context, the community has become more attuned to the obligation of the state, as public resource owner, to manage common resources in accordance with progressive social welfare issues.⁷⁵

Public participation and community engagement protocols have a much higher significance within this context.⁷⁶ Community engagement in this context has evolved into a strong public interest responsibility. Determining which communities are affected by resource development and how those communities feel about the prospect of such development is increasingly crucial because it provides important insight into social attitudes and behaviour.⁷⁷

74. Cf. Allan Kanner & Mary E. Zeigler, *Understanding and Protecting Natural Resources*, 17 DUKE ENVTL. L. & POL'Y F. 119, 122 (2006) (noting that there has been a shift from a 'great places' approach to natural resources to a 'reclaiming' approach).

75. See, e.g., Paul Rose, *The Management of Public Natural Resource Wealth* 22-25 (Ohio St. Moritz Coll. of Law, Working Paper No. 191, 2013) (examining governance of natural resource funds).

76. For a discussion on the importance of holistic ownership and community engagement in unconventional gas expansion, see David E. Pierce, *Carol Rose Comes to the Oil Patch: Modern Property Analysis Applied to Modern Reservoir Problems*, 19 PA. ST. ENVTL. L. REV. 241, 245-46 (2011) (arguing that individual rights to oil and gas reservoirs, where many individuals possess similar rights and duties, each impact the community and should be viewed as affirmative correlative rights which more completely recognize private individuals rights, particularly in regards to their "status as a member of the reservoir community").

77. See David Lametti, *The Concept of Property: Relations Through Objects of Social Wealth*, 53 U. TORONTO L.J. 325, 366 (2003) (arguing that private property should be framed, particularly in the context of public resources, as spectrum metaphor for property entitlements and responsibilities).

The state cannot make decisions that maximize social good if it does not fully understand or appreciate the nature and texture of the community, what its priorities are and the potential impact of a public resource decision upon that community.⁷⁸ The deep-rooted notion that the public has no legitimate societal interest in decisions made within the private ownership domain has no relevance to public resources owned the by state. This is particularly true given the potent issues that underpin environmental management, ecological sustainability and biodiversity.⁷⁹ Non-engagement with communitarian values and perspectives disconnects common resources from their evolving social and ecological macrocosm.⁸⁰

D. The Onshore Resource Sector and Co-operative Governance

Public resource systems need to be reconfigured to properly support and facilitate a broader public interest imperative that takes greater account of co-operative governance norms.⁸¹ The state, as resource owner, must ensure that the public, as resource users, are informed and connected. Co-operative governance depends upon the facilitation of collaborative processes. In a public

78. Cf. Alexander, *supra* note 23 (presenting theories of property where ownership comes with obligations of support towards the community); John O'Neill, *Property, Care and Environment*, 19 ENV'T & PLAN. C: GOV'T & POL'Y 695, 696 (2001) (noting that "[c]are for particular places which embody the life of a community [. . .] is often expressed through resistance to liberal property rights").

79. Joseph L. Sax, *Ownership, Property, and Sustainability*, 31 UTAH ENVTL. L. REV. 1, 10 (2011) (noting that "understanding the nature of sustenance and biodiversity calls for a rethinking of our assumptions about landownership").

80. Cf. Myrl L. Duncan, *Reconceiving the Bundle of Sticks: Land as a Community-Based Resource*, 32 ENVTL. L. 773, 780 (2002) (arguing that one of the most serious flaws in the bundle of rights metaphor lies in the treatment of individual parcels of land as "free standing and unrelated to other bundles or the larger community").

81. For a discussion on the nature and importance of co-operative governance norms, see John R. Nolon & Steven E. Gavin, *Hydrofracking: State Preemption, Local Power, and Cooperative Governance*, 63 CASE W. RES. L. REV. 995, 1037 (2013) (noting that the adoption of bans may be the product of political reaction and reflective of the fact that communities may not have access to best practices in law and/or science, which may be overcome by state agencies investing time and money in creating a regulatory framework that implements a co-operative state-local approach to controlling local impacts and promoting regional interests).

resource framework, collaboration is incentivized through the implementation of normative behavioural standards that facilitate a broader dialogue between public policy networks, community stakeholders and representatives before, during, and after the resource development process.⁸² This is particularly imperative in the onshore resource sector where competition for public resources has generated significant conflict, which has been exacerbated by structural ambiguities.

The recent developments in the state of Victoria, Australia, provide an interesting case study and are illustrative of the difficulties facing a public resource framework with ineffectual collaborative governance. In August 2016, the Victorian state government announced a permanent ban on all onshore unconventional gas development as well as an extension of the existing moratorium on conventional onshore gas development until 2020.⁸³ A moratorium had been in place since 2012 over all conventional and unconventional onshore gas development, including all approvals for fracking, exploration, drilling activities and the use of chemicals in fracking.⁸⁴ Moratoriums and bans have been utilized in the United States, and whilst many have been long lasting, they are provisional in nature, signaling the need for substantive change in governance.⁸⁵

82. This is broadly consistent with what is known as a reflexive law model where decision-making processes can involve a range of stakeholders including government, industry and civic stakeholders who cooperatively develop and implement performance based solutions. *See generally* Sanford E. Gaines, *Reflexive Law as a Legal Paradigm for Sustainable Development*, 10 BUFF. ENVTL. L.J. 1 (2003).

83. *Victoria Bans Fracking to Protect Farmers*, VICTORIA (Aug. 2016), <http://www.premier.vic.gov.au/victoria-bans-fracking-to-protect-farmers/> [<https://perma.cc/QJ5S-FBBJ>].

84. *Id.* The ban has been passed and incorporated in legislation in March 2017. It is now set out in the *Mineral Resources Sustainable Development Act 1992* (Vic) ss 8(A) and 8(D) (Austl.), and the *Petroleum Act 1998* (Vic), s 16(A) (Austl.).

85. *See, e.g.*, Abrahm Lustgarten & Nicholas Kusnetz, *New York Passes Temporary Ban on Hydraulic Fracturing*, PROPUBLICA (Aug. 4, 2010), <https://www.propublica.org/article/new-york-senate-passes-temporary-ban-on-hydraulic-fracturing> [<https://perma.cc/LUG4-XSLB>] (discussing the temporary moratorium passed in New York banning hydraulic fracturing until May 2011 with the aim of giving the legislature more time to investigate the associated environmental impacts); Joe Smydo, *City OKs Ban on Gas Drilling*, PITT. POST GAZETTE (Nov. 17, 2010), http://www.uppermon.org/news/Pgh-Alleg/PPG-PGH_Drilling_Ban-17Nov10.html [<https://perma.cc/E4T4-BVHV>] (discussing the 2010 ban by the city council of Pittsburgh on natural gas drilling within the city limits).

The permanent ban in Victoria followed the findings of an inquiry in 2015 into onshore unconventional gas development in Victoria.⁸⁶ These findings indicated a widespread failure by the state government to develop effective community engagement protocols involving a sufficient cross-section of community representatives. The finding also revealed transparency failures because communities have not been informed of relevant information regarding chemicals and toxins used within hydraulic fracturing processes. The non-disclosure of chemicals used in hydraulic fracturing processes was found to be commonplace within ‘commercial in confidence’ arrangements, a practice that was compounded by the absence of any legal obligation mandating public disclosure of the types, concentrations or toxicity of any such chemicals.⁸⁷

The inquiry found that community concern regarding the social and environmental impacts of onshore unconventional gas was extensive and had not been dispelled. This concern was apparent from the broad range of submissions received from a cross-section of community stakeholders including farmers and other landholders, environmental groups, land-care groups, medical professionals, hydro-geologists, tourism operators, small business owners, and local councils.⁸⁸

For example, the submission received from a community group describing themselves as the ‘Gasfield Free Seaspray’ in the Otway region, an area renowned for agriculture and tourism, made it clear that 98 per cent of those surveyed in the community did not want gas fields in the Seaspray community or surrounding areas.⁸⁹ Further, it asserted that the community had unilaterally declared itself to be ‘gas field free’ on 28 July 2013, despite the absence of

86. PARLIAMENT OF VICTORIA: ENV'T & PLANNING COMM., INQUIRY INTO ONSHORE UNCONVENTIONAL GAS IN VICTORIA: FINAL REPORT (2015), http://www.parliament.vic.gov.au/file_uploads/EPC_58-03_Text_WEB_BYPNWy4W.pdf [<https://perma.cc/49YR-MSSL>] [hereinafter FINAL REPORT].

87. *Id.* at 56

88. *See, e.g., id.* at app. (listing over 1600 submitters over a six month period); *id.* at 66 (noting that since 2012 over 60 communities in Gippsland and Western Victoria declared themselves ‘gas field free’ and formed local action groups); *Inquiry into Unconventional Gas in Victoria: Submissions*, PARLIAMENT OF VICTORIA: ENV'T & PLANNING COMM., <http://www.parliament.vic.gov.au/epc/article/2636> [<https://perma.cc/QH2P-PR6W>].

89. PARLIAMENT OF VICTORIA, FINAL REPORT, *supra* note 86, at 66.

any government or industry engagement. The community proceeded to mark the occasion with the formation of a human sign, comprised of 650 people, spelling out the words 'No Gas Fields.'⁹⁰

The eventual imposition by the state government of a permanent ban on all onshore unconventional gas development amounted to a failure of governance. The absence of cooperative measures within the regulatory framework capable of properly supporting the integration of deep-rooted community concerns over the social and environmental impacts of unconventional gas extraction combined with the absence of a clear ownership interface between private land ownership and public resource ownership were critical issues. The deficiencies generated community distrust, anxiety and disengagement.

Whilst the ban alleviates the immediate environmental concerns associated with unconventional gas extraction, it is not a solution. The entire purpose of a ban or a moratorium is the suspension of private activities in the interests of broader public benefit. A ban does not provide resolution and indeed, its presence is indicative of deeper social, economic and regulatory concerns that require attention.⁹¹ The endpoint for a moratorium or ban is therefore legal reform. This should include greater cooperative governance between state and federal governments within a federal framework because working together to achieve comprehensive outcomes is the most effective way of addressing entrenched social and environmental issues relevant to onshore energy development.⁹² A ban should not act as a subterfuge or impediment to the expedient implementation of regulatory development that is consistent with progressive public interest obligations—otherwise it is regressive.

90. *Id.*

91. See Bram Thompson, *What Is a Moratorium?*, 42 CAN. L. TIMES 761, 762 (1922) (“[a] [m]oratorium is simply a [l]aw to delay the exercise of some right which in the absence of the Moratorium would be in complete operation.”).

92. See, e.g., Hannah J. Wiseman & Hari M. Osofsky, *Regional Energy Governance and U.S. Carbon Emissions*, 43 ECOLOGY L.Q. 143, 153 (2016) (arguing that improving coordination in energy governance depends upon further changes being implemented to federalism models).

III. SOCIAL OBLIGATION JURISPRUDENCE

A. The Public Trust Doctrine

The public resource framework in Australia has much to learn from the public trust doctrine, which has been so influential in the regulation and management of natural resources in the United States. The doctrine has been profoundly important because it imposes trust obligations upon state governments, and compels them to take account of public values when making decisions that impact vital natural resources within their ownership domain.⁹³ In this respect, the public trust doctrine functions in an anticipatory mode,⁹⁴ because its ultimate objective is to facilitate change in social and governmental behavior. Whilst the public trust doctrine has been criticized as illegitimately substituting informed administrative discretion with informed judicial opinion,⁹⁵ it nevertheless remains a crucially important doctrine in terms of its capacity to protect and manage some of the fundamental changes occurring within natural resource domains. These changes are vast and disruptive and include significant transitional alterations connected with the deployment of carbon abatement strategies that necessarily include the implementation of onshore renewable energy projects and the expansion of conventional and unconventional gas production. The changes are a product of social, technological and environmental progression and necessarily involve expanding public interest assessments. Within

93. See Sax, *supra* note 14, at 484 (where the author famously argues that “certain interests are so intrinsically important to every citizen that their free availability tends to mark the society as one of citizens [T]o protect those rights, it is necessary to be especially wary lest any particular individual or group acquire the power to control them.”). See generally Joseph D. Kearney & Thomas W. Merrill, *The Origins of the American Public Trust Doctrine: What Really Happened in Illinois Central*, 71 U. CHI. L. REV. 799 (2004); Alexandra B. Klass, *Modern Public Trust Principles: Recognizing Rights and Integrating Standards*, 82 NOTRE DAME L. REV. 699 (2006); Richard L. Lazarus, *Changing Conceptions of Property and Sovereignty in Natural Resources Law: Questioning the Public Trust Doctrine*, 71 IOWA L. REV. 631 (1986).

94. Timothy Patrick Brady, “*But Most of it Belongs to Those Yet to Be Born:*” *The Public Trust Doctrine, NEPA, and the Stewardship Ethic*, 17 B.C. ENVTL. AFF. L. REV. 621, 631 (1990).

95. Steven M. Jawetz, *The Public Trust Totem in Public Land Law: Ineffective- and Undesirable- Judicial Intervention*, 10 ECOLOGY L.Q. 455, 457 (1982).

this context, the public trust doctrine plays a vital role, monitoring the progression of government activities.⁹⁶

Historically, the public trust doctrine is a derivation of common law and Roman civil law. The Institutes of Justinian stated that, in accordance with the law of nature, “these things are common to mankind—the air, running water, the sea, and consequently the shores of the sea.”⁹⁷ The public acquired usufructuary rights in these common resources through what was known as *res communis* ownership, which the state protected. This meant that the public held rights to fish in rivers and ports as well as rights of passage and navigation in navigable rivers and the sea.⁹⁸

The public trust doctrine emerged in the United States in the 19th century through a series of seminal cases. In these cases, relief was granted upon the basis that the state owned all the navigable waterways and the land beneath those waterways as a trustee under a public trust.⁹⁹ The trust played an important role in this context because it prevented the state from transferring public land to private owners so as to preclude the public from the right to use the waterways.¹⁰⁰ As outlined by the United States Supreme Court in *Illinois Central Railroad v. Illinois*, where it was held that the navigable waters of Lake Michigan, which the State Government owned and had alienated for a railroad development, were:

96. For example, the ability of the public to engage in commerce is an established public interest that the public trust seeks to protect. *See Ill. Cent. R.R. Co. v. Illinois*, 146 U.S. 387, 454 (1892). The application of the public trust to new resources of environmental significance was discussed by Jordan M. Ellis, *The Sky's the Limit: Applying the Public Trust Doctrine to the Atmosphere*, 86 TEMP. L. REV. 807, 814 (2014) (noting that “[w]hen considering the reach of the public trust doctrine, courts are guided by the present interests and values of society”).

97. THE INSTITUTES OF JUSTINIAN 158.2.1.1 (Thomas Collett Sandars trans., 1876).

98. The principle is derived from THE INSTITUTES OF JUSTINIAN which characterizes certain types of property as ‘common to all’; *see* Patrick Deveney, *Title, Jus Publicum and the Public Trust: An Historical Analysis*, 1 SEA GRANT L.J. 13, 23 (1976).

99. *See Ill. Cent. R.R. Co.*, 146 U.S. at 466 (Shiras, J., dissenting).

100. *See Martin v. Lessee of Waddell*, 41 U.S. 367, 413 (1842); *Arnold v. Mundy*, 6 N.J.L. 1 (1821).

. . . held in trust for the people of the State that they may enjoy the navigation of the waters, carry on commerce over them, and have liberty of fishing therein freed from the obstruction or interference of private parties. . . The trust devolving upon the State for the public, and which can only be discharged by the management and control of property in which the public has an interest, cannot be relinquished by a transfer of the property. The control of the State for the purposes of the trust can never be lost, except as to such parcels as are used in promoting the interests of the public therein, or can be disposed of without any substantial impairment of the public interest in the lands and waters remaining.¹⁰¹

Subsequent decision applied the public trust principle to other areas of natural resource governance and, in 1970, Joseph Sax famously argued that the public trust doctrine had the potential to apply to a wide range of areas “in which diffuse public interests need protection against tightly organized groups with clear and immediate goals.”¹⁰² Sax argued that the protective focus of the public trust gave it great functionality within a large range of vulnerable natural resource areas.¹⁰³

The primary utility of the doctrine lay in its capacity to ensure that the state complied with strict trustee responsibilities when managing common resources for the benefit of the public. The public holds the beneficial title and can compel the state to comply with trustee responsibilities. State Attorney Generals, as trustees, may sue for any damages to natural resources held on public trust by the state.¹⁰⁴

To establish a claim for damages, a state Attorney General must prove that the actions of the state amount to a breach of trustee responsibility in that the action constitutes “an unreasonable interference with the use and enjoyment of trust rights.”¹⁰⁵ In some states natural resource damages may be recovered for a breach relevant to any natural resource. In other

101. *Ill. Cent. R.R. Co.*, 146 U.S. at 452-53.

102. Sax, *supra* note 14, at 556.

103. *Id.*

104. Allan Kanner, *The Public Trust Doctrine, Parens Patriae, and the Attorney General as the Guardian of the State's Natural Resources*, 16 DUKE ENVTL. L. & POL'Y 57, 59 (2005).

105. *Id.*

states, however, recovery is restricted to natural resources actually owned by the state.¹⁰⁶

The state Attorney-General also has the power to bring a *parens patriae* action, where recovery of natural resource damages is sought on the basis of an injury to the sovereign or quasi-sovereign interests of the state and this includes injury to the environment.¹⁰⁷ The recent decision of the California Superior Court in *Environmental Law Foundation, et al. v. State Water Resources Control Board, et al.* is illustrative of the scope of the action. In that case, the court held that the state had a “fiduciary-like” duty to consider the possible environmental impacts upon navigable water following the pumping of nearby groundwater.¹⁰⁸ The applicants argued that the depletion of groundwater decreased flows in the river because the river was hydrologically connected to the groundwater systems. This, in turn, harmed river fish populations and had a deleterious effect upon navigability. The court held that the diversion of groundwater was, in the circumstances, harmful to public interests that were explicitly protected by the public trust doctrine and this could generate natural resource damages.¹⁰⁹

106. *Id.* at 59 (citing *State by Stuart v. Dickinson Cheese Co.*, 200 N.W.2d 59 (N.D. 1972); *Commonwealth v. Agway Inc.*, 232 A.2d 69 (Pa. Super. Ct. 1967)). Both cases were referred to by EDWARD H. P. BRANS, *LIABILITY FOR DAMAGE TO PUBLIC NATURAL RESOURCES* 53 (2001), explaining that the courts in both cases held that state claims for natural resource damages due to loss of fish could not succeed because the state did not own the fish).

107. *See id.* at 59; *see also* Carter H. Strickland, Jr., *The Scope of Authority of Natural Resource Trustees*, 20 COLUM. J. ENVTL. L. 301, 318 (1995); Michael McGrath, *The Role of State Attorneys General in National Environmental Policy*, 30 COLUM. J. ENVTL. L. 449, 451 (2005) (noting the strong common law responsibility of the state attorney-generals under the public trust doctrine to protect natural resources within state boundaries).

108. *Envtl. Law Found. v. State Water Res. Control Bd.*, 2014 WL 8843074, at 6 (Cal. App. Dep’t Super. Ct. July 15, 2014); *see also* Nat’l Audubon Soc’y v. Superior Court, 658 P.2d 709, 728 (Cal. 1983) (where it was held that the public trust doctrine bestows on the state a positive duty to consider the impact of government action on public trust resources. In practical terms this means that the state must try to minimize or avoid harm to interests protected by the public trust.).

109. *See Env’tl. Law Found.*, 2014 WL 8843074 at 8. This principle provides governmental agencies enforcing the Sustainable Groundwater Management Act a defense against a takings claim. *See also* Adam Bowling & Elizabeth Vissers, *The Public Trust Doctrine and its Groundwater Application in California*, 18 U. DENV. WATER L. REV. 468 (2015).

The public trust doctrine has been articulated as a state doctrine given its application to state owned natural resource interests. In *Alec L. v. Jackson*, the district court dismissed a claim by six federal agencies which had allegedly violated their fiduciary duty to preserve and protect the atmosphere as a commonly shared public trust in accordance with the public trust doctrine.¹¹⁰ The court held that the public trust doctrine was a matter of state rather than federal law and consequently the court did not have jurisdiction.¹¹¹ Further, even if the public trust doctrine did apply to federal constitutional law, the provisions of the Clean Air Act displaced it.¹¹² This was the explicit conclusion of the Supreme Court in *American Electric Power Co. v. Connecticut*, where it was held that the environmental protection actions authorized by the Clean Air Act precluded any federal common law right to seek abatement of carbon dioxide emissions from carbon intensive power plants.¹¹³

The non-application of the public trust doctrine to federal agencies was recently revisited by the district court in *Kelsey Cascade Rose Julianana et al v. United States of America* where Judge Coffin indicated a preparedness to entertain a federal action grounded in public trust principles.¹¹⁴ In that case, the plaintiffs included a group of young people, aged 19 years or younger as well as activist associations who argued they were beneficiaries of a federal public trust which had been breached because they had been harmed by government action and inaction in generating carbon pollution and allowing fossil fuel exploitation.¹¹⁵ The plaintiffs argued that the approval and promotion of fossil fuel development, including exploration, extraction, production,

110. *Alec L. v. Jackson*, 863 F. Supp. 2d 11 (D.D.C. 2012), *aff'd sub nom. Alec L. ex rel. Loorz v. McCarthy*, 561 F. App'x 7 (D.C. Cir. 2014).

111. *Id.* at 15 (where District Judge Wilkins concluded that the plaintiffs have not raised a federal question to invoke this Court's jurisdiction under § 1331).

112. *Id.* at 16; *see also* the Clean Air Act, 42 U.S.C. §§ 7401-7642 (2012). The act was first enacted in 1970 and was substantially amended in 1990. *Evolution of the Clean Air Act*, EPA, <https://www.epa.gov/clean-air-act-overview/evolution-clean-air-act> [<https://perma.cc/Y2P5-NEM9>] (last updated Jan. 3, 2017).

113. *Am. Elec. Power Co. v. Connecticut*, 564 U.S. 410, 411 (2011).

114. *Juliana v. United States*, No. 6:15-CV-1517-TC, 2016 U.S. Dist. LEXIS 52940 (D. Or. 2016).

115. *Id.* at *4.

transportation, importation, exportation and combustion resulted in violations their fundamental constitutional rights to be free from government actions that harm life, liberty and property.¹¹⁶

The defendant argued that the public trust doctrine is a matter of state law and does not depend upon Federal Constitutional law.¹¹⁷ Judge Coffin disagreed, holding that there were constitutional parameters connected with the emission of greenhouse gases from fossil fuel exploitation.¹¹⁸ He argued that:

. . .the intractability of the debates before Congress and state legislatures and the alleged valuing of short-term economic interest despite the cost to human life, necessitates a need for the courts to evaluate the constitutional parameters of the action or inaction taken by the government. This is especially true when such harms have an alleged disparate impact on a discrete class of society.¹¹⁹

He concluded that:

When combined with the EPA's duty to protect the public health from airborne pollutants and the government's public trust duties deeply ingrained in this country's history, the allegations in the complaint state, for the purposes of a motion to dismiss, a substantive due process claim.¹²⁰

These cases reveal a deep-rooted consciousness of the overarching relevance of the public trust doctrine in United States constitutional jurisprudence.¹²¹ This has imbued the public trust doctrine with a blend of both common law and constitutional elements.¹²² The explicit obligation imposed on the government by the public trust, to protect natural resources within its domain, includes protection against the impact of onshore resource development as well as protection against the broader impacts of

116. *Id.* at *5-8.

117. *Id.* at *25-28.

118. *Id.* at *16.

119. *Id.* at *17.

120. *Id.* at *39-40.

121. *Id.*

122. See Charles F. Wilkinson, *The Headwaters of the Public Trust: Some Thoughts on the Source and Scope of the Traditional Doctrine*, 19 ENVTL. L. 425 (1989).

the climate change crisis.¹²³ This is because the public interest responsibilities of the state government are encapsulated within an explicit duty of loyalty that is owed towards the public beneficiaries of the trust, to act in their interests when making decisions that affect natural resources. The breadth of the public trust doctrine in the United States has also encouraged significant legislative developments, at both the state and federal level, in areas that include environmental protection and natural resource management.¹²⁴

In Australia, there has been resistance to any application of the public trust doctrine despite its clear utility within a public resource framework.¹²⁵ There have been a number of reported instances where the courts have drawn upon the language of the public trust doctrine to illustrate, largely in a metaphorical sense, the special responsibilities of the state towards the public resources it owns or controls, however no formal adoption has occurred.¹²⁶

123. Courtney Lords, *Protection of Public Trust Assets: Trustees' Duty of Loyalty in the Context of Modern American Politics*, 23 J. ENVTL. L. & LITIG. 519, 524 (2008) (noting that the sovereign trustees must act to defend the trust against injury, and this duty links the doctrine to the climate change crisis).

124. It has been argued that the implementation of this legislation has resulted in the public trust doctrine having outlived its utility. See Lazarus, *supra* note 93, at 633 (arguing that trends in legislative development indicate that the public trust doctrine lacks the utility it previously had and it now “obscures analysis and renders more difficult the important process of reworking natural resources law”).

125. The prospect of applying the public trust in Australia was examined by Tim Bonyhady, *A Usable Past: The Public Trust in Australia*, 12 ENVTL. & PLAN. L.J. 329 (1995); P. Stein, *Ethical Issues in Land-use Planning and the Public Trust*, 12 ENVTL. & PLAN. L.J. 13, 593-601 (1996) (the author argued that the whilst the public trust has had little influence on the evolution of environmental law in Australia, two nineteenth century cases reveal that the trust is nevertheless deeply embedded in Australian law). See also Tim Bonyhady, *An Australian Public Trust*, in ENVIRONMENTAL HISTORY AND POLICY: STILL SETTLING AUSTRALIA 258-72 (Stephen Dovers, ed., 2000); GERRY BATES, ENVIRONMENTAL LAW IN AUSTRALIA 41-43 (LexisNexis Butterworths, 7th ed. 2010).

126. See, e.g., *Willoughby City Council v Minister for the Env't* (1989) 78 LGERA 19, 34 (Austl.) (noting that “[N]ational parks are held by the State in trust for the enjoyment and benefit of its citizens, including future generations”). A public trust argument was raised in *Upper Mooki Landcare Inc v Shenhua Watermark Coal Pty Ltd & Minister for Planning* (2016) NSWLEC 6, 152 (Austl.), where the applicant argued that the principles of ecological sustainable development are informed by the public trust, however the argument was rejected on the grounds that a duty to consider an application “affirmatively,

This is unfortunate given the clear value such a doctrine would bring to an ownership framework where public interest is crucial because sub-surface resources have been vested in the state. Two primary reasons have been put forward for its rejection. In the first place, it has been argued that the existence of the public trust may interfere with the sovereign powers of the Crown as the ultimate owner of all land within a feudal hierarchy. As a trustee under a public trust, the state must act in the interests of the public and it has been suggested that the application of such a rigorous fiduciary obligation may conflict with the effective exercise of sovereign constitutional power.¹²⁷ Secondly, it has been argued that the fiduciary responsibilities generated by the public trust are inconsistent with statutory powers and therefore interfere with the robust adaptability of established judicial review principles.¹²⁸

These objections are increasingly difficult to justify within a changing onshore resource context. It has been suggested that any application of the public trust principle within Australia would require a fundamental “reconceptualization of the importance of such rights in our jurisprudence. . .”¹²⁹ The dramatic changes to the onshore energy landscape arguably justify such revision because the rights of the public, as the ultimate beneficiaries of natural resources, require strong, institutional protection. It is crucial to ensure that the state exercises power over vested natural resources in accordance with strict public interest responsibilities. Monitoring the shifting and somewhat amorphous nature of these public responsibilities would be more appropriately conducted through the application of equitable responsibilities under a trust

fundamentally and properly” effectively amounted to a merits review rather than a judicial review.

127. See *Tito v. Waddell* (No. 2) [1977] 3 All ER 129 (Eng.) (where the court argued that the Crown had acted in breach of trust and fiduciary obligations owed to them regarding phosphate mining royalties that had been paid into ‘trust funds’ for the indigenous communities. Megarry V-C held that this created not a true trust but rather a ‘higher form’ trust because it involved a relationship with the Crown. The ‘higher form’ trust was more an emanation of governmental obligation than specific fiduciary responsibility.). For further discussion, see Stephen Gray, *Holding the Government to Account: The ‘Stolen Wages’ Issue, Fiduciary Duty and Trust Law*, 32 MELB. U.L.R. 115 (2008).

128. See Paul Finn, *Public Trusts, Public Fiduciaries*, 38 FED. L. REV. 335, 340 (2010) (the author argues that judicial review operates in a distinct manner to the discretionary dimensions of the fiduciary power).

129. *Id.* at 345.

mechanism. Indeed, the overriding importance of the public trust doctrine has already been recognized in the context of coastal waters, where the threat of coastal recession due to extreme weather events and sea level rises has prompted calls for its prompt implementation.¹³⁰

The equitable duties of the government, as public trustee, ensure consideration is given to the interests of the public as a whole, because the public is the ultimate owner. The significance of the public trust, like the private trust, lies in the fact that the ownership held by the trustee is not absolute. Trustees must look after the trust assets vested within them so that they are protected against loss and so that the interests of existing and future beneficiaries are managed. The duty of loyalty also requires governments to communicate and disclose to public beneficiaries all relevant information regarding natural resource management and exploitation.¹³¹ Strong transparency and accountability requirements are consistent with the emerging importance of community engagement protocols.¹³² The public trust doctrine would require all documents connected to decisions made regarding public resources to be publicly accessible. All such documents are trust documents but it would not include information relevant to the exercise of administrative discretion. This is consistent with the private law principle that information relevant to the exercise of discretion is not a trust document.¹³³ The obligation to communicate and disclose would significantly enhance the capacity of the state to satisfy public interest

130. See generally Bruce Thom, *Climate Change, Coastal Hazards and the Public Trust Doctrine*, 8 MACQUARIE J. INT'L & COMP. ENVTL. L. 21 (2012).

131. Cf. 76 AM. JUR. 2D *Trusts* § 356 (2005).

132. The constitutional framework in Australia imposes a system of representative government however the pattern of governmental organizations which it ordains has resulted in the creation of power relationships, institutional arrangements and practices and policy processes which have made the Australian public vulnerable. See the discussion by P. Finn, *Public Trust and Public Accountability*, 3 GRIFFITH L. REV. 224, 227 (1994).

133. *In re Londonderry's Settlement*, [1964] 3 All ER 6 (Eng.); see *Marigold Pty Ltd v Belswan (Mandurah) Pty Ltd* (2001) 209 WASC 23 (Austl.) (“[T]he right of a beneficiary to inspect trust documents, whether founded on proprietary right or fiduciary duty is not unqualified. Confidentiality or privilege are circumstances in which a discretion to refuse inspection may arise.”).

obligations towards communities impacted by resource development.¹³⁴

Further, where trust principles are breached, there is significant scope for awarding relief. The state, as public trustee, would act to defend the trust assets against injury and, where damage occurs, the state would be obliged to restore the trust assets.¹³⁵ The availability and scope of relief for the breach of a public trust duty would provide a stronger incentive for a broader and more rigorous protection of vested natural resource assets by the state as well as stronger adherence to community engagement processes.

The public trust doctrine is an important transitional tool because of its ability to provide institutional guidance and stability as it actively seeks to protect reasonable expectations in the relative stability of relationships from the destabilizing effects of change.¹³⁶ The integration of the public trust principle into Australian jurisprudence would provide members of the public, as beneficiaries under a broader public trust, with improved rights of communication and disclosure. It would improve the capacity of localized residents and stakeholders to engage in governmental decisions regarding public trust assets that affect the community. In this respect, adopting the public trust doctrine would facilitate greater adherence to collaborative government norms. This would be a constructive and positive development given the capacity of state decisions to affect ecologies, biodiversity, climate change, food security and at a macro level, principles of intergenerational equity.¹³⁷

134. See generally Chris Ballard & Glen Banks, *Resource Wars: The Anthropology of Mining*, 32 ANN. REV. ANTHROPOLOGY 287 (2003) (the authors discuss the different forms of community engagement that have emerged within mining communities in Australia).

135. See generally Mary Christina Wood, *Nature's Trust: Reclaiming an Environmental Discourse*, 25 VA. ENVTL. L.J. 243 (2007).

136. See Joseph L. Sax, *Liberating the Public Trust Doctrine from Its Historical Shackles*, 14 U.C. DAVIS L. REV. 185, 186-88 (1980).

137. In the United States, courts have applied the public trust doctrine to ensure, for example, the protection of public lands for climate change benefits and the promotion of international principles of ecological sustainability. See generally Paul A. Barresi, *Mobilizing the Public Trust Doctrine in Support of Publicly Owned Forests as Carbon Dioxide Sinks in India and the United States*, 23 COLO. J. INT'L ENVTL. L. & POL'Y 39 (2012).

B. Land Ethics and the Doctrine of Propriety

Land ethics may be described as a set of normative connections that humans make when interacting with the land.¹³⁸ These normative connections seek to delineate ‘right’ and ‘wrong’ ways of living on the land.¹³⁹ In this way, land ethics are interconnected with the ownership of land because they embody the concept of property as ‘propriety.’ Propriety has an established jurisprudential background.¹⁴⁰ Conceptually, it stems from the assumption that ownership is directly connected to social order because it functions as a private entitlement that promotes public good.¹⁴¹

Proprietarians generally assume that ‘public good’ has some sort of comprehensible substantive denotation, despite its conceptualization proving to be somewhat elusive. Public good is not generally synonymous with the commodification of property because market-oriented perspectives often obscure social welfare values that seek to prevent behaviour that endangers the livelihood of the communities in which owners reside.¹⁴² Hence,

138. See ALDO LEOPOLD, *A SAND COUNTY ALMANAC: AND SKETCHES HERE AND THERE* 201 (1949) (where the term ‘land ethics’ was first used in this essay as an organizing concept). For subsequent evaluation of this, see Eric Freyfogle, *The Land Ethic and Pilgrim Leopold*, 61 U. COLO. L. REV. 217 (1990) (where the author argues that property is in ‘metamorphosis not decline’ and this shift is, in part, attributable to its changing relationship with the natural environment).

139. For an interesting discussion on the connection between resource titles and community norms, see Fred P. Bosselman, *Four Land Ethics: Order, Reform, Responsibility, Opportunity*, 24 ENVTL. L. 1439 (1994).

140. MORTON J. HORWITZ, *THE TRANSFORMATION OF AMERICAN LAW, 1870-1960*, at 110-11 (1977); Richard F. Babcock & Duane A. Feurer, *Land as a Commodity ‘Affected with a Public Interest’*, 52 WASH. L. REV. 289 (1977); C. Edwin Baker, *Property and Its Relation to Constitutionally Protected Liberty*, 134 U. PA. L. REV. 741 (1986); Donald W. Large, *This Land is Whose Land? Changing Concepts of Land as Property*, 1973 WIS. L. REV. 1039 (1973).

141. See RICHARD BARNES, *PROPERTY RIGHTS AND NATURAL RESOURCES* (2009) (noting that the proprietary perspective forces one to realize that property indeed has a central role in ordering society and shaping social relations).

142. See Joseph William Singer, *The Ownership Society and Takings of Property: Castles, Investments and Just Obligations*, 30 HARV. ENVTL. L. REV. 309, 330 (2006) (proposing a ‘citizenship model’ of ownership which seeks to confer freedom and equality on all persons, and simultaneously places owners in the role of guardians of social order).

proprietary interests would subordinate economic imperatives wherever they are found to conflict with or threaten the social good.¹⁴³

Fundamentally, proprietorship examines the role that property systems play in shaping community and social order.¹⁴⁴ Owning land or natural resources necessarily involves taking responsibility for the management and control of that land or natural resource.¹⁴⁵ Owners with a greater community values instead of individuals voicing particularized entitlement concerns.¹⁴⁶ This connects with our shared perception of the stewardship responsibilities held by all land and natural resource owners who are taking care of a vital public resource rather than controlling it.¹⁴⁷ Land ethics foster a greater awareness and appreciation of the collective nature of environmental and

143. Gregory S. Alexander, *Property as Propriety*, 77 NEB. L. REV. 667, 668 (1998).

144. See Alexander, *supra* note 54 (especially Part 1, The Civic Republican Culture 1776-1800, where Alexander traces the connection between property and social order within the civic republican era).

145. Eric T. Freyfogle, *Ownership and Ecology*, 43 CASE W. RES. L. REV. 1269, 1295-97 (1993) (outlining the importance of land-owner responsibilities, which include caring for and managing natural resources, in an environment where sustainable living is a goal. The author goes on to suggest that: "by now we must know that the land does not belong to us. We belong to it. Our charge is to avoid injury to this enlarged community and if we can go further, to foster its health and beauty.").

146. See Eric T. Freyfogle, *Property and Liberty*, 34 HARV. ENVTL. L. REV. 75, 87 (2010) (questioning whether we should continue to allow landowners collectively to make decisions about the shared use of their interconnected land or whether we force them to act alone and render infeasible a public or collective vision of development); see also Jedediah Purdy, *A Freedom Promoting Approach to Property: A Renewed Tradition for New Debates*, 72 U. CHI. L. REV. 1237 (2005) (arguing that property law needs to be structured by a more refined understanding of the meaning of liberty). See generally FRITJOF CAPRA & UGO MATTEI, *THE ECOLOGY OF LAW: TOWARD A LEGAL SYSTEM IN TUNE WITH NATURE AND THE COMMUNITY* (2015), <http://site.ebrary.com/lib/pacelibrary/reader.action?docID=11121699&ppg=2> [<https://perma.cc/E9D2-X656>] (arguing that a new ecological order has three strategic objectives: (i) to disconnect law from power and violence (the nation-state); (ii) to make communities sovereign; and (iii) to make ownership generative).

147. See Alexander, *supra* note 51, at 1857-58 (distinguishing between 'exclusion property' where one owner has full control over the asset and enforceable rights are in rem in character, and 'governance property,' which are regulated by wide-ranging internal governance norms including cooperation, engagement and broader norms that contribute to the development of human flourishing).

sustainability concerns.¹⁴⁸ All public and private land and natural resources should be subjected to internal governance norms that more effectively promote community engagement and mutual cooperation. The core objective of a public resource system is for the state to nurture macro dispositions of cooperation and in so doing minimize interface collisions and satisfy public interest duties.¹⁴⁹

Integrating land ethics into the public resource framework will also counter-balance the structural monism of ownership regimes defined by the right to exclude. If one value system becomes definitive of the entire normative framework, it necessarily inhibits a greater understanding of differing value perspectives.¹⁵⁰ Cooperative norms have a centrifugal focus. They are directed away from the exclusionary core because they compel multi-dimensional perspectives.¹⁵¹ The heuristic process of understanding and responding to community concerns requires stronger ethical assimilation to ensure that the state and the private owner exercise ownership entitlements in consonance with broader public interest and social welfare imperatives.

IV. SOCIAL LICENSING OBLIGATIONS

A. Formative Concepts

The importance of community engagement and communitarian values for onshore resource development is clearly

148. See Anna di Robilant, *The Virtues of Common Ownership*, 91 B.U. L. REV. 1359, 1360 (2011) (arguing that properly designed, common ownership 'forms' can achieve a variety of policy goals that individualistic frameworks and rights cannot and that this facilitates more cooperative and active communities).

149. Alexander, *supra* note 51, at 1884.

150. Hanoch Dagan, *Pluralism and Perfectionism in Private Law*, 112 COLUM. L. REV. 1409, 1416 (2012) (arguing that sharing and cooperation within existing ownership principles are a constitutive feature of the property institution and concerns about insider's governance may be as or even more important than concerns regarding outsiders' exclusion).

151. See Thomas W. Merrill & Henry E. Smith, *The Morality of Property*, 48 WM. & MARY L. REV. 1849, 1851-52 (2007) (arguing that norms operating beyond the exclusion focus are refinements to the 'core exclusionary regime' of property); Dagan, *supra* note 150, at 1419 n.38 (arguing that the conceptualization of property as exclusion by Merrill and Smith amounts to "one of the most influential accounts of structural monism").

apparent from the rise of what has become known as the social license to operate. The social license to operate was a phrase initially referenced at a 1997 World Bank meeting for the purposes of mining and extractive industries. Community approval processes have had a particular resonance in these contexts because of the significant impact extractive industries have upon the local environment in which they operate. This makes improving transparency and gaining the support of affected communities crucial.¹⁵² The same logic is applicable to all onshore energy projects. Expanding resource development into new areas traditionally associated with agriculture has created strong environmental and social concerns that directly impact upon the quality and livelihood of local communities

The social license to operate eludes precise definition, as it is, in essence, a risk management strategy that has a particular cogency in circumstances where public unease about industry practices is strong. The fact that society is, in general, becoming more attuned to the impact of resource development, particularly those projects involving the extraction of fossil fuels, upon the environment, the atmosphere and the landscape, means that industry has had to become more adept at responding to the needs, expectations and concerns of community stakeholders. This is especially true in the context of onshore resource projects, which are amenable to post-normal technologies, such that the impact upon the landscape, the environmental and the community is often unclear.¹⁵³

The social license to operate is therefore a goal oriented, negotiated tool utilized by industry to promote information transparency and accountability and encourage community

152. See N.Z. SUSTAINABLE BUS. COUNCIL, SOCIAL LICENCE TO OPERATE 4 (2013), https://www.sbc.org.nz/_data/assets/pdf_file/0005/99437/Social-Licence-to-Operate-Paper.pdf [<https://perma.cc/MN7B-WLUC>] (noting that the 'social licence' terminology is now widely used in many sectors including" agriculture, energy, manufacturing, mining, pharmaceutical, transport, telecommunications and tourism).

153. See J. RAVETZ & S. FUNTOWICZ, INTERNET ENCYCLOPEDIA OF ECOLOGICAL ECONOMICS: POST-NORMAL SCIENCE 1 (2003), http://leopold.asu.edu/sustainability/sites/default/files/Norton,%20Post%20Normal%20Science,%20Funtowicz_1.pdf [<https://perma.cc/DY67-LNTL>] (discussing the post-normal science explaining that it characterizes a methodology of inquiry that is appropriate for cases where "facts are uncertain, values in dispute, stakes high and decisions urgent").

acceptance and involvement. The primary aim is to generate strong community approval so as to minimize disruption. Gaining approval is a multi-dimensional process that depends upon voluntary acts of communication and disclosure surpass formal legal processes. The assumption is that such will promote community confidence because industry appears to be acting in a 'legitimate, transparent and socially acceptable manner.'¹⁵⁴

The rise in importance of the social license reveals the growing importance of community engagement and risk management protocols in the onshore resource sector.¹⁵⁵ The social license now has cogency within a range of different corporate areas highlighting a growing preference for governance informed by the input of impacted civil communities.¹⁵⁶ It is legitimate to expect that those most affected by the impacts of expanding resource development should have the most to say about whether or not that development should proceed.¹⁵⁷ Social licensing is critical to the progression of a sustainability paradigm for land and natural resources because it optimizes the capacity of the community as a whole to protect and preserve nature's capital.¹⁵⁸

B. Social Licensing and Corporate Strategy

There are some excellent examples of social licencing processes that have achieved strong social welfare and community engagement outcomes and in doing so, shifted corporate strategic focus. One such example lies with Rio Tinto, a mining company

154. See Neil Gunningham, Robert A. Kagan & Dorothy Thornton, *Social License and Environmental Protection: Why Businesses Go Beyond Compliance*, 29 L. & SOC. INQUIRY 307 (2004).

155. See generally Austin Shaffer, Skylar Zilliox, & Jessica Smith, *Memoranda of Understanding and the Social Licence to Operate in Colorado's Unconventional Energy Industry: A Study of Citizen Complaints*, 35 J. ENERGY & NAT. RESOURCES L. 69 (2017).

156. Ian Thomson, *Understanding and Managing Public Reaction to 'Fracking'*, 33 J. ENERGY & NAT. RESOURCES L. 266 (2015).

157. See Jason Prno & D. Scott Slocombe, *Exploring the Origins of 'Social License to Operate' in the Mining Sector: Perspectives from Governance and Sustainability Theories*, 37 RESOURCES POL'Y 346 (2012).

158. Claire Richert, Abbie Rogers & Michael Burton, *Measuring the Extent of a Social License to Operate: The Influence of Marine Biodiversity Offsets in the Oil and Gas Sector in Western Australia*, 43 RESOURCES POL'Y 121, 122 (2015); see also Smith & Richards, *supra* note 25, at 100.

increasingly cognizant of the impact of the mining and natural resource sector upon the health, environment and safety of impacted, local communities. Rio Tinto has actively sought to improve their relationship with community stakeholders by ensuring, in accordance with the articulated United Nations Millennium Development Goals, that every project has a localized and publically reportable set of social performance indicators.¹⁵⁹ These indicators demonstrate the economic contribution of the project to the communities and the regions in which they operate and include compliance with any negotiated local employment targets.¹⁶⁰ They also reveal the level of engagement of the company with communities via jointly operated community programs and strategic outreach facilities.¹⁶¹

For example, according to its annual report, in 2012 Rio Tinto contributed US\$292 million to over 2,700 socio-economic programmes covering activities such as health, education, business development, environmental protection, housing and agricultural development.¹⁶² Rio Tinto were the largest private sector employer of indigenous Australians and they actively sought to form partnerships with universities, NGOs and industry to facilitate research into global environmental and natural resource concerns including biodiversity loss, climate change, water depletion and contamination, environmental justice and corruption.¹⁶³

The current strategic objective of Rio Tinto is to consistently review, reassess and reframe their approach to ensure the material

159. See DEP'T OF ECON. & SOCIAL AFF. OF THE U.N. SECRETARIAT, MILLENNIUM DEVELOPMENT GOALS REPORT, (2015), http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20%28July%201%29.pdf [<https://perma.cc/U4JR-D66N>]; see also *Sustainable Development 2012, Engagement*, RIOTINTO, <http://www.riotinto.com/sustainabledevelopment2012/governance/engagement.html> [<https://perma.cc/P964-UFCU>].

160. See RIOTINTO, OUR APPROACH TO COMMUNITIES AND SOCIAL PERFORMANCE (2012), http://www.riotinto.com/documents/RT_Rio_Tintos_approach_to_communities_and_social_performance.pdf [<https://perma.cc/E4Z3-NN> DZ]. This policy includes the objective of establishing local targets and performance indicators on the basis of our social and economic knowledge base, informed analysis and community engagement.

161. *Id.*

162. See *Annual Report 2012 - Key Performance Indicators*, RIOTINTO, http://www.riotinto.com/annualreport2012/overview/key_performance_indicators.html [<https://perma.cc/B2XD-Q9PV>].

163. *Id.*

risks and concerns relevant to community stakeholders are addressed and risk management is optimized.¹⁶⁴ Community engagement is a strong focus in this strategic plan. One particularly successful example of this shift in strategic focus has been in Michigan where, in addition to the environmental oversight of state regulatory processes, an independent community environmental monitoring program has been established at the Eagle Mine at Humboldt Mill in order to examine the environmental effects of a nickel and copper mine.¹⁶⁵ Monitoring focuses on groundwater and surface water resources, air quality, flora and fauna.¹⁶⁶ The community monitoring program, known as the Superior Watershed Partnership, implements the community monitoring program in collaboration with universities, contractors and EPA approved laboratories.¹⁶⁷ The project, which has been well received, has involved the establishment of an oversight board with representation from the community, the environmental sector, the mining sector as well as the local indigenous population, the Keweenaw Bay Indian Community.¹⁶⁸ Community forums have been held in a wide number of regions including: Marquette, Big Bay, Humboldt and Michigamee and the discussion has included not only existing and potential impacts but also future proposals for monitoring improvement.¹⁶⁹

164. RIO TINTO, 2016 STRATEGIC REPORT 29 (2016), http://www.riotinto.com/documents/RT_2016_Strategic_report.pdf [<https://perma.cc/932V-QLMA>] (“To support our Communities and Social Performance target for 2016-2020, sites began collecting data relating to the effective capture and management of community complaints. All sites are required to have a complaints, disputes and grievance mechanism in place in line with the effectiveness criteria for operational-level grievance mechanisms.”).

165. *Community Environmental Monitoring of the Rio Tinto Eagle Mine*, RIO TINTO (2012), <http://swpcemp.org/wp-content/themes/cemp/pdfs/CEMP-Diagram.pdf> [<https://perma.cc/SH65-VCB3>] [hereinafter *Community Environmental Monitoring Diagram*].

166. *Id.*

167. *Mine Monitoring*, SUPERIOR WATERSHED P'SHIP & LAND TRUST, <http://swpcemp.org/monitoring/mine-monitoring> [<https://perma.cc/R9X9-RVD9>].

168. *Community Environmental Monitoring Diagram*, *supra* note 165, (discussing the framework for the program).

169. *See* SUPERIOR WATERSHED P'SHIP, 2016 WORK PLAN FOR THE COMMUNITY ENVIRONMENTAL MONITORING PROGRAM OF THE EAGLE MINE 7 (2016), http://swpcemp.org/wp-content/uploads/2013/05/CEMP-2016-Work-Plan_062016.pdf [<https://perma.cc/WU79-TXFP>].

V. CONCLUSION

Ownership in land and natural resources invariably results in the destruction or diminution of our human habitat.¹⁷⁰ This is because humans are fated to live on the planet and this means that the pattern of land and resource entitlements adopted is critical to social organization and progression. As Joseph Sax has stated, “habitat inheres in land.”¹⁷¹ Our imaginative and moral investment in our landscape and our community has always surpassed its pure functionality as an ownership commodity.¹⁷²

Despite this, deeply ingrained assumptions about rights to exclusivity and autonomy endure.¹⁷³ Private and public land and resource owners have come to expect that, within their boundaries and subject to negative externalities, they will be immunized against state coercion or obligation.¹⁷⁴ In the words of Carol Rose, “[t]he property owner has a small domain of complete mastery, complete self-direction, and complete protection from the whims of others.”¹⁷⁵ This stems from the libertarian belief that, in the absence of harm, non-intervention should be the “presumptive

170. See Lynda L. Butler, *The Resilience of Property*, 55 ARIZ. L. REV. 847, 858 (2013) (noting that the interests of neighbouring landowners in the ecosystem are not protected under traditional common law and public right theories do not provide sufficient justification for uncompensated regulation of private property to preserve critical environmental resources).

171. Sax, *supra* note 79, at 10 (arguing that the social relevance of land is connected to its articulation as a ‘habitat’ which allows it to be conceived as a component of the natural economy).

172. See JEDEDIAH PURDY, *THE MEANING OF PROPERTY, FREEDOM COMMUNITY AND THE LEGAL IMAGINATION* 1-5 (2010) (discussing the economic rationalization of property as a response to limited resources); see also Carol M. Rose, *Privatization: The Road to Democracy?*, 33-34 (Yale Law Sch., Pub. Law & Legal Theory, Working Paper No. 106, 2006) (arguing that property is a legal relationship that stimulates our imagination).

173. ERIC T. FREYFOGLE, *ON PRIVATE PROPERTY: FINDING COMMON GROUND ON THE OWNERSHIP OF LAND* (2007); see also Sax, *supra* note 79, at 2.

174. In *Florida v. Jardines*, 133 S. Ct. 1409 (2013), Justice Kagan concluded in her comments that “[t]he law of property ‘naturally enough influences’ our ‘shared social expectations’ of what places should be free from governmental incursions” (quoting *Georgia v. Randolph*, 547 U.S. 103, 111 (2006)) (referenced by Andrew D. Selbst, *Contextual Expectations of Privacy*, 35 CARDOZO L. REV. 643, 701 n.359 (2014)).

175. Carol M. Rose, *Canons of Property Talk, or, Blackstone’s Anxiety*, 108 YALE L. J. 601, 604 (1998).

posture of the state.”¹⁷⁶ Ownership therefore confers a legal and political sphere where individuals are free to exercise preference without governmental or external coercion.

These entrenched attitudes have created profound relational divisions between the individual, the state and the community.¹⁷⁷ They have also impeded the capacity of the state, within a public resource sector, to comply with its public interest mandate.¹⁷⁸

Social contract theorists such as Hobbes support autonomous ownership, arguing that private ownership is a benefit flowing from the conferral of individual authority to the state.¹⁷⁹ Ownership autonomy therefore represents the material foundation for social order as it maximizes preference satisfaction and makes resources more valuable.¹⁸⁰ Similarly, Locke argued that this implicit social contract, which exists as an idea of reason rather than an assumption of fact, justifies the powers of the modern state and forms the foundation of our social and legal order.¹⁸¹

These private law assumptions have, however, been consistently challenged. Rousseau argued that the act of ownership and the capacity of an individual to distinguish and assert exclusivity and control split the self from the world.¹⁸² Hence, autonomy removes the individual from the primary human condition connecting them to nature as a whole. Thus humanity is undone “if you forget that the fruits of the earth belong to all and

176. See Jennifer S. Hendricks, *Renegotiating the Social Contract*, 110 MICH. L. REV. 1083, 1083 (2012).

177. Alexander, *supra* note 143. See generally ALEXANDER, *supra* note 54.

178. See Melissa K. Scanlan, *Implementing the Public Trust Doctrine: A Lakeside View into the Trustee's World*, 39 ECOLOGY L.Q. 123, 176 (2012) (the author discusses the legitimacy concerns that exist where public interest considerations are influenced by private interests); Huffman, *supra* note 7, at 53 (noting that the history of public resource management is one of private interests seeking benefits from public land resources.).

179. See generally JOHN RAWLS, *THEORY OF JUSTICE* (2d ed. 1999).

180. See CAROL ROSE, *PROPERTY AND PERSUASION* 58, 62 (1994) (describing the medieval and view of property as "propriety," because ownership carried social and political responsibilities).

181. See IMMANUEL KANT, *On the Common Saying: This May Be True in Theory But it Does Not Apply in Practice*, in KANT'S POLITICAL WRITING 61 (Han Reiss ed., 1970); see also Jeremy Waldron, *Theoretical Foundations of Liberalism*, 37 PHIL. Q. 127, 127 (1987).

182. JEAN-JACQUES ROUSSEAU, *DISCOURSE ON THE ORIGIN OF INEQUALITY* (Paul Negri & Greg Boroson eds., 2004) (1754).

the earth to no one!”¹⁸³ Ownership autonomy means that land and natural resources are treated as a fungible commodity, disengaged from their social and ecological communities.

Public resource ownership is not subject to the same level of autonomy as private resource ownership because it is moderated by public interest responsibilities. It is not amenable to the contractarian rationales that underlie private ownership entitlements. Hence, the state must ensure that all autonomous entitlements in public resources are managed in accordance with communitarian responsibilities.¹⁸⁴ Public resource ownership is increasingly defined not by the capacity to exclude and control but rather, by the right to harness social and community approval. These rights reflect a growing differentiation between private and public resource ownership. The growing importance of community involvement within public resource development highlights our evolving appreciation of ownership as a product of human communities with a relational focus that is both “human-regarding and object-regarding.”¹⁸⁵

Public resource frameworks need to facilitate assessment processes for onshore resource development that cohere with the underlying philosophy of the ownership structure. State ownership in natural resources is only justifiable if the state is appropriately connected with the concerns of the community and is therefore equipped to evaluate the interests and priorities of intersecting interests. Autonomous ownership entitlements in public resources must be exercised in accordance with the ‘calculus of social interests’ via an evaluation process that integrates the needs, expectations and interests of impacted communities.

Community is of course a dynamic concept. Communities change and evolve over time meaning that public interest assessments require readjustment. The norms and values that existed when the public resource framework was first introduced in Australia are no longer reflective of current attitudes. Social,

183. *Id.* at 24.

184. See Edward L. Rubin, *The Illusion of Property as a Right and its Reality as an Imperfect Alternative*, 2 WIS. L. REV. 573 (2013) (arguing that the role of property in modern society has evolved into a more communitarian notion).

185. Craig A. Arnold, *The Reconstitution of Property: Property as a Web of Interests*, 26 HARV. ENVTL. L. REV. 281, 332 (2002).

environmental and community perspectives have progressed and public interest protocols must reflect this.

In the current energy landscape communities need to be properly and transparently informed about the scope and impact of onshore resource development. This is particularly imperative in a public resource framework where, in the absence of a public trust doctrine, neither the public interest responsibilities of the state nor the boundaries between state and private ownership domains are clearly defined

Community representatives must be given the opportunity to provide feedback and to engage with government and industry during the assessment and approval process. The state must actively satisfy itself that any proposed resource development is consistent with the needs of the impacted community. This must be a collaborative assessment process where the community is informed and has the opportunity to respond. Community engagement needs to be implemented at every stage of a resource development project to ensure it is effective. This should include feedback in the initial proposal and assessment, community representation in all private access negotiations and community involvement in all cumulative environmental monitoring, management and rehabilitation programs.

Promoting a comprehensive and structured approach to community engagement ensures that the public most affected by the development is also the public most intricately involved in its progression. Community values have always been inextricably connected to the public resource ownership given the connectivity between property and social order.¹⁸⁶ Community engagement and communitarian values are not integrated into the bundle of rights that inform the core ownership framework because ownership models evolved at a time when individual or indeed state exploitation of natural resources was deemed to be a social good and therefore automatically in the public interest.

186. See Carol M. Rose, *Property as Wealth, Property as Propriety*, in NOMOS XXXIII: COMPENSATORY JUSTICE 223-47 (John Chapman ed., 1993) (arguing that private property is an important component for the maintenance of social and political order and proprietary).

In a modern context, this must be balanced against the needs of our eco-system as a whole.¹⁸⁷ Onshore resource development has the capacity to devastate communities and landscapes. With this in mind, the normative assumptions that have long informed public resource frameworks require adjustment. Regulatory frameworks need to be updated. In Australia, the importance of the public trust doctrine demands reconsideration. Public interest responsibilities must be carefully rationalized because now, more than ever, property norms need to mirror the contextual ethics from which they have evolved.¹⁸⁸

187. Freyfogle, *supra* note 18, at 639. For a discussion on the nature and scope of land ethics, see Large, *supra* note 140, at 1082.

188. Freyfogle, *supra* note 18, at 637-38 (arguing that “[f]rom earliest-known times, human communities found it useful to develop norms authorizing the private control of land. . . .” These norms were created by the community and “were enforced only when and so long as the community stood behind them.”); *see also* Carol M. Rose, *The Several Futures of Property: Of Cyberspace and Folk Tales, Emission Trades and Ecosystems*, 83 MINN. L. REV. 129, 177 (1999) (arguing that individuals within communities are capable of working out intricate sets of internal rights, responsibilities and overarching norms of expected give and take).