

INTRODUCTION TO THE SPECIAL ISSUE ON ECOSYSTEM SERVICES AND THE LAW

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The importance of natural ecosystems to people and their societies has been articulated by scientists since the early 1960s. From this emerged the concept of ecosystem services in the 1970s and 1980s that began to categorize ecosystem services, value and monetarize them, against a backdrop of growing global degradation of natural ecosystems. The concept of ecosystem services has given rise to new inter-disciplinary fields (e.g. ecological economics, bioeconomics, and environmental management), which seek to provide knowledge on how the well-being of humans, which is dependent on ecosystem services from nature, can be maintained. The term has also helped connect ecological complexity and dynamics to human needs and wants, as ecosystem services fundamentally underpin human health, wellbeing and prosperity.

Essential to sustaining ecosystem services is regulation of their use in effective and appropriate ways through the law. But there are fundamental tensions between law, which aspires to certainty, and ecosystems and their services, which can vary spatially and temporally. This tension means that laws for ecosystem services can be ineffective and inappropriate, and that we must develop new ways to regulate and support ecosystem services. Recognition of this risk led to a workshop at UQ in March, 2020, and this special issue on ecosystem services and the law. This year marks the beginning of the United Nations Decade on Restoration, which highlights the importance of restoring and rehabilitating terrestrial, coastal, and marine ecosystems for the good of mankind. This special issue has a strong focus on law that regulates restoration, in recognition of the urgent need to facilitate ecosystem restoration, both on land and in the oceans.

One of the key themes emerging from the workshop is the need for law to be both forward-looking and backward-looking. While ecosystem services are sometimes accounted for in forward-looking decisions regarding development, the law does not adequately cater for the backward-looking function of ecological restoration. Hamman, Purandare and Pointon examine this issue in the context of Queensland, and highlight the deficiencies in the State's legal regimes. They conclude that change is required to ensure that restoration is properly viewed as

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distinct from other forms of development, and to ensure that restoration projects are facilitated.

The theme of restoration carries on through McCormack's article, in the context of bushfire. The workshop was held on the back of some of the most severe bushfires in Australia's history, which impacted on vast areas of the continent, including wetland areas. McCormack analyses how bushfire is projected to impact on wetlands into the future, and highlights a need for more restoration-focused laws to enable transformation in the face of changing climate hazards.

Boulot and Akhtar-Khavari also focus on restoration, through the lens of restorative inputs, and the need to add complexity to the governance system. They consider two case studies to demonstrate how restoration has not permeated environmental governance regimes deeply, and argue for an approach uncoupled from human goals and ambitions.

Techera's and Ruhl and Salzman's contributions add an international dimension to this collection. Techera focuses on the protection of mangroves in the Indo-Pacific, with a detailed review of how mangroves are protected through international and regional legal regimes. She highlights ways in which laws could be strengthened, including the implementation of more specific laws and policies incorporating ecosystem services, and greater recognition of the socio-cultural values of mangroves.

Ruhl and Salzman's contribution provides a more global assessment of the law and policy underpinning ecosystem services, with detailed attention to the regimes in Australia and the United States. They argue that one of the most effective ways to ensure that mangrove ecosystem services are translated into law is to highlight the clear links between conservation, and benefits provided by mangroves to humans. The shift may take some time, but they conclude that progress is already occurring in Australia.

Finally, Bell-James considers the ethical dimensions of using the ecosystem services paradigm in environmental law, distinguishing between ecosystem services as a metaphor, and ecosystem services as a basis for separating and monetising components of nature. She argues that the former approach is already widespread in Australian law, and is ethically defensible. She concludes that, while progress towards a more ecocentric approach to nature is a worthy goal, the ecosystem services paradigm presents a solid compromise between environmental protection and human ambition.