

Australia's Concealed Commons: Why Land Degradation Is Not Easily Fixed

The idea of the tragedy of the commons is generally well known. As Garrett Hardin suggested in 1968, livestock owners using common land will degrade the land because the benefits of introducing more stock are captured by the individual while the costs are spread among all users of the common.

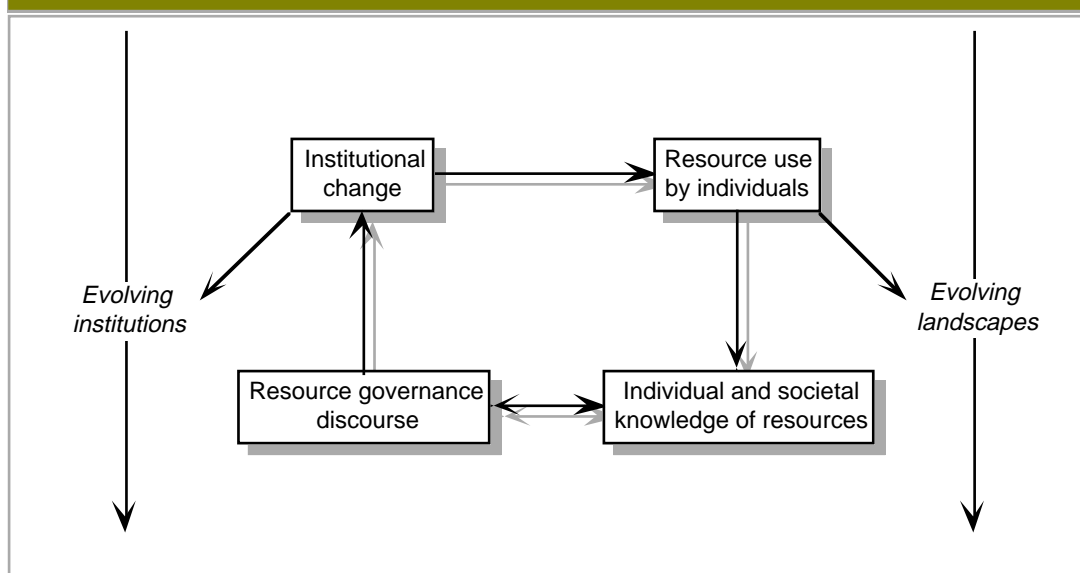
But most of Australia's rural land is in private ownership, so what is the relevance of commons? As Ian Reeve, Senior Project Director at the Centre, pointed out at a recent conference, concealed commons on privately owned land lie at the root of the land degradation problem.

Resource Governance Systems

Almost all societies have some system of beliefs, social norms or formal rules that regulate the access of individuals to land resources. Access to resources ranges in scale from indigenous people harvesting traditional foods, to open-cut coal mining. Resource access is not just the consumption of renewable and non-renewable resources, it also includes access to the assimilative capacity of the environment — the ability, for example, of rivers to absorb nutrients unwanted by towns and farms.

Resource governance systems range from the spiritual beliefs of traditional societies that regulate agricultural and harvesting activities, through social norms of resource using behaviour, to the vast volume of environmental legislation that has arisen since the 1960s in industrial societies. The environment itself evolves over time as a consequence of resource use and the changes may or may not be detected by society. If the environmental changes are detected and are considered undesirable, changes may be made to the resource governance system. In this sense, the environment and resource governance systems comprise co-evolutionary systems with landscapes and institutions evolving in parallel over time (figure 1).

Figure 1: Co-evolution of landscapes and resource governance systems.



Resource Governance in Rural Australia

At the time of the initial European settlement of Australia, the resource governance system was, *de facto*, an open access regime in which the Aboriginal owners were unable to defend their claims to ownership against the weapons of the settlers. As the land surveyors caught up with the pace of settlement, most of the land resources suitable for agriculture were encompassed by a private property regime of freehold and leasehold ownership. During the 20th century, and particularly in the latter half, a number of forms of land degradation caused by agriculture have emerged. These include soil erosion, soil acidity, soil structural decline, dryland and irrigation salinity, eutrophication of waterways and loss of biodiversity.

The Ecologically Driven Transition to Commons

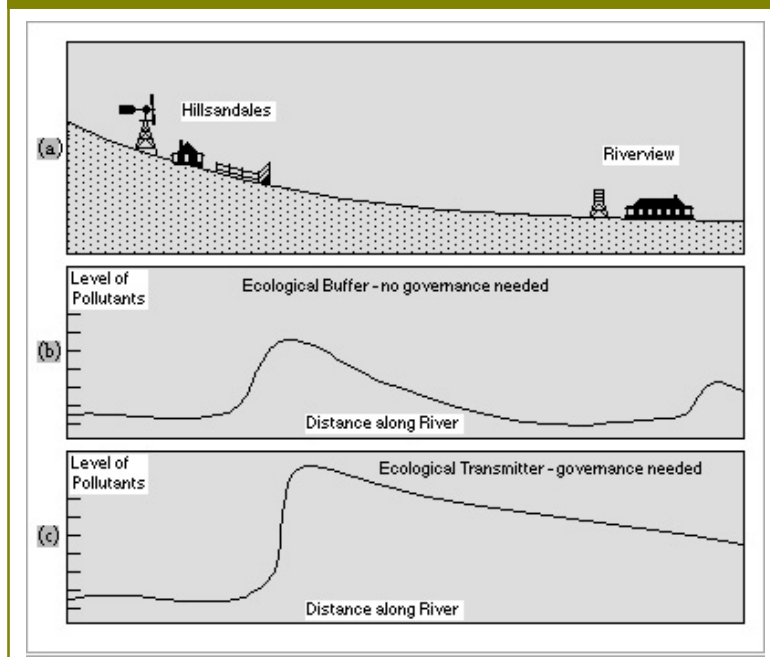
Figure 2 shows the effect on water quality of increasing stocking rates and increasing amounts of nutrients and sediment entering the river at a property, *Hillsandales* upstream of another property, *Riverview*. Over time, the zone of adversely affected water quality gradually extends downstream, until it reaches *Riverview*, imposing costs on this farm because of the poor water quality (figure 2(c)). At this point, the riverine ecosystem has been transformed from a buffer between the two farms to a transmitter of harm, or externalities.

This hypothetical example illustrates how agricultural development over time leads to externalities that are transmitted by ecosystems. The trend over time in rural Australia has been for the buffering capacity of ecosystems to decrease and more externalities to emerge as the long term adjustments of ecosystems take place, as new technologies are introduced, and as land is used more intensively.

In the example above, a river has, in effect, become a commons with respect to nutrient assimilative capacity. An individual riparian landowner captures the benefit of not having to limit nutrient discharges, but the costs in reduced water quality and reduced assimilative capacity are spread across all downstream users.

Regions affected by dryland salinity provide a further example. When vegetation clearance on recharge areas is limited, the rise in saline watertables is insufficient to reduce agricultural productivity. As watertables in a predominantly cleared landscape come closer to the surface, the amount of freeboard between the land surface and the watertable assumes the characteristics of a commons. A landowner situated on a recharge area may capture the benefit of additional clearing of trees, but the costs in higher watertables are spread across all landowners in the discharge areas.

Figure 2: Transition to a commons and the need for governance.



Concluding Comments

Slight changes in the state of ecosystems can bring about radical changes in how the activities of resource users impact on each other. In the space of a few years, or a few centimetres of rising watertables, an agricultural frontier, in which individualism and private property rights in land are adequate institutional arrangements, is transformed into a resource commons, where land degradation can only be avoided by coordinated collective action. The hallmark of the frontier society — the freedom to use one's land as one wishes — becomes overtly anti-social behaviour as ecosystems are transformed from buffers between the activities of individuals to transmitters of harmful externalities.

The solution to land degradation is not simply a case of making existing institutional arrangements more effective. The emergence of concealed resource commons in rural Australia is a fundamental change in the relationships between resource users and the environment and it is likely to require equally fundamental changes in systems of resource governance.

More information:

Reeve, I.J. (1998): 'Commons and Coordination: Towards a Theory of Resource Governance'. In: Epps, R. (ed) *Sustaining Rural Systems in the Context of Global Change*. Proceedings of the Conference of the Joint IGU Commission for the Sustainability of Rural Systems and the Land Use - Cover Change Study Group, University of New England, Armidale, 5th-12th July, 1997. School of Geography, Planning, Archeology and Palaeoanthropology, University of New England, Armidale. 54-65.

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