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Daniel Rothenburg: Irrigation, Salinity, and Rural Communities in Australia's Murray-Darling Basin, 1945-2020

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Daniel Rothenburg's 'Irrigation, Salinity, and Rural Communities in Australia's Murray-Darling Basin, 1945-2020' (2023) provides a localised environmental history of community and pastoralist responses to salinity crises and their settler colonial legacies in the twentieth century. Focusing predominantly on two regional towns (Kerang and Shepparton) and the action groups formed to respond to salinity, Rothenburg's study illustrates the broader relationships between governments, community, and pastoralist groups in shaping environmental policy and conservation discourse in Australia. The book also illustrates how the construction of rivers and waterways connected to the Murray-Darling Basin are informed by policy and cultural imaginaries regarding the importance of white and non-Indigenous inland settlement. The latter's viability is challenged by the environmental changes brought about by agro-ecologies. As a consequence, finite water supplies have fostered a neoliberal approach to water management that promotes sustainable development as both possible and necessary.

Irrigation is a central project of settler colonial infrastructure and the infrastructuring processes of irrigation have had a significant impact on the environment of Australia. As Rothenburg outlines, irrigation is "a promise to realize the settler dream of a closely populated Australia and a modern venture to subjugate the allegedly useless Australian nature and utilize it" (8). The attempt to reshape and extract value from a supposedly under exploited land has resulted in the "salinization of soil and water" (8), which is a global problem resulting in agricultural productivity decline "in about one-third of the globally irrigated area" (9). Rothenburg uses the concept of slow violence (via Rob Nixon) to understand agriculture and irrigation's temporally delayed impacts, where "causes and effects are not always clearly linked across time and space" (9). Studies of settler colonisation and settler colonial infrastructuring also provide Indigenous centred conceptualisations of this phenomenon.[1] The author notes that First Nations are not responsible for these environmental imposts (14) and this justifies "why there are few mentions of Indigenous people in this book" (14). Salinization "is a story of European Australians, played out among them, without any role by Aboriginal people" (14).

1 See Aileen Moreton-Robinson: The White Possessive; Irene Watson: Aboriginal Relationships to the Natural World; Anne Spice: Fighting Invasive Infrastructures; Andrew Curley: Infrastructures as Colonial Beachheads.

In taking this approach, the author fails to recognise or make explicit how settler colonial infrastructuring facilitates an ongoing relationship between non-Indigenous peoples and Indigenous dispossession. The latter is an active agent shaping the policy, cultural, and community imaginaries examined by the book and the temporal effects of dispossession have significant impacts on contemporary First Nations sovereignty, nation building, and custodianship of Country.

Navajo scholar Andrew Curley develops the concept of colonial beachheads to explain how colonial infrastructure projects, and the nations who inherit them, enact "temporal encroachments on Indigenous lands and livelihoods that augment material and political difference over time and exacerbate inequalities".[2] Colonial administrators and later governments who inherit dispossessed land "can more easily accomplish what" they want "because of the political advantage made possible through" decades of expropriation and concessions made by First Nations.[3] Colonial and national infrastructure projects such as irrigation facilitate ongoing relationships to dispossession that circumscribe First Nations activities and initiatives during the time period discussed in Rothenburg's book. These practices are a crucial element of the localised and global environmental histories of agriculture and irrigation.

The book proceeds in a general chronological order, with chapters overlapping in places to illustrate the different policy, temporal, community, and environmental assemblages produced by salinisation. "Salinization is … understood as a phenomenon caused by reciprocal interaction between humans and the natural environment" (18). The value of non-Indigenous agriculture, the primary industries, and inland settlement has been the primary mediator of the different responses to salinisation. Rothenburg notes that "46 per cent of the gross value of Australia's irrigated products came from the MDB [Murray-Darling Basin]" and agriculture "consumes about 50-65 per cent of all water in Australia" (4). Despite this, agriculture's place in the Australian economy "has steadily declined" (4) and attempts to arrest this decline underpin the so-called "water wars" (7) – contestations over how to best secure water – examined in the book.

The book begins with the geography and geology of the MDB. "In the twentieth century, the MDB became Australia's most important agricultural region and its heartland of irrigated agriculture" (21). As a result, its flows have been engineered to provide water in the summer for irrigation, other rivers have been directed into it, and wetlands drained for agriculture (21). The canalisation of rivers is similar to the terrestrial cadastral model in the engineering of a particular spatial order onto the environment for human needs. "State power and resources have played a crucial role in the transformation of the environment, the patterns of settlement, and the living conditions of the people who inhabit the region" (28).

Rothenburg references James C. Scott's notion of 'seeing like a state' (1998) to emphasise how a mode of seeing the environment persists even when material

2 Andrew Curley: Infrastructures as Colonial Beachheads, p. 387.
3 Ibid, p. 388.

obstacles undermine the realisation of this seeing.[4] Despite this engineering, as Rothenburg points out, the agency of the river systems are apparent in salinisation (22), which thwarts modernist state planning.

The third chapter titled 'Antecedents' examines the physiographical history of the area prior to sustained European irrigation. The 'problem' of irrigation emerged out of a scientific rationality regarding how to best redistribute existing water towards agriculturally productive ends. Rothenburg notes that Aboriginal landscape engineering worked with a similar set of logics, though directed towards more sustainable and continuous ends (31). The land settled by agriculturalists was explored by Thomas Mitchell and described as 'Australia Felix' (34), due to the apparently favourable conditions for productivity. "Mitchell's prophecy of a settled agricultural landscape, thanks to its suitability for channels, its permanent watercourses, and plentiful rainfall, was widely promoted in Australia and Britain" (35). Of course this landscape had been carefully managed for thousands of years by Wamba Wemba and Yorta Yorta Nations, among others. In just two decades, the Indigenous population fell by 80 per cent (36) and "settlers increased the country's fragility and their vulnerability to drought conditions" (39). White Australia Policy architect Alfred Deakin was a strong proponent of the yeoman ideal and helped pass the Victorian Irrigation Act 1886 (40); though early irrigators included Chinese market gardeners (39). Ownership of water became invested in the state and water rates were introduced after 1886 (43). Human induced salinity "was recorded in Victoria as early as 1853" (46).

The remaining chapters examine the assemblage of non-Indigenous actors responding to the salinisation crisis. Chapter Four examines post-WWII salinisation mitigation efforts in the context of the dialectic of environmental security. "River regulation was regarded as a benevolent force and environmental deterioration as a necessary loss in the pursuit of the common good. The special aura of irrigation influenced national goal-setting and defense interests" (52). These schemes are at war or battle (56) with the environment and overcoming the latter "was the way into a utopian future" (53). Realising these future gains involved a conceptual transformation of the Murray from a 'natural' entity to an asset connected to environmental security (53). Environmental security was also co-extensive with racial security as fears of an 'Asian invasion' fuelled the need for inland settlement as a form of defence (54). Similarly to the ways the White Australia Policy responded to a broader set of global socio-economic paradigms, irrigation plans in Australia also reflected global practices of damming; about two-thirds of water were managed through dams globally by the 1990s (58). These water security practices are also bound up in the continuing dispossession of First Nations and their economic circumscription or colonial beachheads as identified by Curley. For instance, the Roosevelt administration's Tennessee Valley Authority (151), and other water management schemes, were directly implicated in the legislative undermining of First Nations sovereignties.

4 For a similar notion of 'seeing like a settler' in relation to environment, heritage planning, and colonial imaginaries, see also Holly Randell-Moon: Seeing Like a Settler. Place-making, Settler Heritage, and Tourism in Dubbo, Australia.

While First Nations sovereign aspirations were being constrained by this infrastructural approach to water security, farmers received subsidies from governments throughout much of the twentieth century. Nearing the 1980s, protectionist policies were abandoned or wound down (87). From this period, water management shifted to "environmental *in*security" (98) and the introduction of neoliberal approaches to water markets to incentivise efficiency and sustainability. Against the imposts of economic rationalisation, local organisations in the Kerang region argued for irrigation as an 'asset' with significant social structures for rural communities (101). This reinforced the social as well as economic and environmental crises attributed to salinisation (102). Depopulation and declining farms or 'absentee-owned farms' meant the town's socio-economic capacities were reduced (103). Rural decline is also a story of white flight that obfuscates First Nations populations in rural and regional areas. The crises and inequalities experienced in Kerang were not the same for Shepparton (106), with the former appearing to have been consigned to the status of a sacrifice zone in order to ensure sustainability for the wider agriculture sector. The book connects here with recent scholarship on 'left behind places'.[5] The upstream/downstream politics of the Murray, prompted by the governing rationalisations of water management (109), continue to be seen more broadly in regional and rural grievances regarding spatial injustice.

How these injustices were worked through at a community level involved community agricultural science projects as well as conservation efforts. A key insight from the book is that "the Salinity Action Groups show their lasting significance as key actors in the previously untold pre-history of Landcare in Australia" (263) and broader environmentalism in Australia. These groups sometimes came into conflict with non-human stakeholders in the Murray and their relative importance vis-à-vis human activity where for instance, some communities were aggrieved that birds and trees were supposedly being prioritised over humans (120). The persistence of settling inland, despite significant environment obstacles, is linked to the settler ideals and the notion of 'countrymindedness' (118). The heavy settlement on the coasts of Australia means that the inland is rendered peripheral and the periphery central.[6] Despite differing stages of technical and infrastructural responses to salinisation, in the end, the consensus was that living with salinity was the reality (194), which may never be alterable by humans. The current approach, influenced in part by the action groups from the affected communities (149), is whole-of-catchment and attempts to manage the Murray as an inter-locking set of social, political, environmental, and economic dynamics – that does include a place for First Nations stakeholders.

While the slow violence of salinisation creates its own temporal crises, the flip-side, as Rothenburg suggests, is that the longevity of the problem creates apathy (138). "Development of the region for European agriculture resulted in the removal of 95 per cent of native forests and woodlands" (245) but this forms a normative backdrop to irrigation activities over a century. For Rothenburg,

5 See Andrés Rodríguez-Pose: The Revenge of the Places That Don't Matter (and What to do About It).

6 See Holly Randell-Moon: Aero-Regionalism.

ignorance of this slow violence and lack of settler responsibility is hard to sustain given the evidence that proponents knew then and now what the ecological impacts of irrigation was (251). Ultimately, non-Indigenous governance and policy of irrigation has been largely "exculpatory toward the pioneers" (252). This is because, "notwithstanding the rise of ecological consciousness, the promise of development was never fundamentally put into question" (264) by community groups and other stakeholders. These logics can be seen in initiatives such as the Sustainable Development Goals (SDGs), which are attempts to mitigate the slow violences of geographically dispersed and localised over-development of the kind brilliantly analysed in this book.

Daniel Rothenburg's 'Irrigation, Salinity, and Rural Communities in Australia's Murray-Darling Basin, 1945-2020' This is an excellent book that will be of interest to environmental historians, local climate change studies, and for scholars interested in the interdependence between neoliberalism and sustainability.

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