

THE
TRANSDISCIPLINARY
JOURNAL

GAIiA

2 | 2020

ECOLOGICAL PERSPECTIVES FOR SCIENCE AND SOCIETY
ÖKOLOGISCHE PERSPEKTIVEN FÜR WISSENSCHAFT UND GESELLSCHAFT



- CORONAVIRUS AND THE EXPLOITATION OF NATURE
- REFORM DER EU-FISCHEREIPOLITIK
- NEUE PFLANZENZÜCHTUNGSVERFAHREN

12 QUESTIONS TO REBEKAH BROWN

1. From your point of view, what are today's most pressing environmental problems?

My passion and interest are in water and restoring quality ecological services in cities, but undoubtedly the most pressing environmental problem we face as a global community is climate change and its impacts on the planet and its people, which are exacerbated by land clearing and habitat destruction.

2. When looking at potential improvements in our environment, what gives you hope?

There is continuous work on solutions, from global frameworks like the *Sustainable Development Goals (SDGs)* to local innovations like the decoupling of pollutant flows to waterways. The dial is now shifting from merely describing the problem to developing solutions at scale, and it gives me hope that we are on the right path.

3. Is there a particular environmental policy reform you admire the most?

You can't look past the *Montreal Protocol* as an astonishing feat of consensus building across the globe and across sectors that averted an imminent disaster. Truly meaningful reforms, however, can and need to happen at many different scales. At a local scale, an initiative of Melbourne's urban water authority has been particularly impactful, which introduced a stormwater pollution offset scheme that incentivises land developers to integrate stormwater treatment into their development projects. It's been in place for nearly a decade, and I was quite sceptical at first, but today Melbourne is regarded as one of the global leaders in stormwater pollution management.

4. Which trend in environmental policy and politics do you consider an aberration?

I think the way we currently report on national greenhouse gas emissions is too coloured by politics and ideology, particularly in Australia. We will, I believe, eventually move past these unreliable measures to a more accurate and accountable stocktake of emissions globally, but just how remains an open question.

5. Why environmental research?

At its most basic level, the wellbeing of people and planet is dependent on the integrity of Earth's core environmental services. We must recognise that the environment has its own intrinsic value, and that it has been significantly shaped, altered and disturbed by human development. That's why I believe environmental research is so important, by putting human development on a pathway that is as restorative and protective of the environment as possible.

6. What has your experience been when it comes to transferring scientific insights into practice?

My experience is that it's a dedicated and nurtured activity in and of itself. The *Revitalising Informal Settlements and their Environments (RISE)* program I am currently leading is an example of this: we have purposely co-created the research, implementation and stakeholder influencing environments to turn our research insights into a practical solution through community-scale implementation whilst establishing the broader conditions for scaling. It's high risk, high stakes and can be incredibly challenging, and occurs in a space that is far beyond the time and funding boundaries of traditional research. I see this as being one of the most profound and exciting frontiers in environmental research, where we take on the stakeholding, advocacy and translation at scale as a new domain of transdisciplinary environmental research.

7. Besides the one you're working in, what field of research in the environmental sciences do you find most exciting?

I am fascinated by field ecology, working in natural environments to restore and protect important ecological populations and their habitats, whether that's forests, oceans or the Antarctic. It's exciting because it's so critical, so intimate and so different to my own work in urban environments.

8. Can you name any person or event that has had a particular influence on your commitment to environmental issues?

Not so much an event but an era. I grew up in a developing peri-urban area where I saw the progressive clearing of native bushland for suburban expansion and the destruction of creeks and waterways, which led to the abrupt disappearance of previously abundant native wildlife. I remember at the same time really resonating with what David Suzuki was saying about these global environmental issues, and how we needed a lot more scientists to get involved if we are going to save the planet.

9. What knowledge about the environment would you like to pass on to young people?

I want to help empower young people to understand that they are the next custodians of the planet, and their own choices and relationship with the environment will in turn determine the quality of life and wellbeing of the next generation after them. I grew up feeling very much the opposite, feeling disempowered about the changes happening around me. But I think we should help the younger generation ready themselves as the future custodians of our planet, and to be more accountable in that role than previous generations.

10. As a scientist concerned with sustainability, what contradictions do you face in everyday life?

There are, of course, the myriad and mundane contradictions of modern life, like how long I should take in the shower and all the packaging on everyday foods. The biggest and most disconcerting contradiction for me, however, is really that as an Australian of European descent, I'm a direct beneficiary of colonisation, with privilege not afforded to my fellow indigenous Australians who continue to suffer systemic disadvantage. It's fundamentally a social equity challenge, which is integral to a more sustainable future for both people and planet.

11. What are you reading at the moment?

Phosphorescence by Julia Baird. It's such a multifaceted, interesting book. It asks the question of us, as individuals, about what sustains us in life and keeps us going even in periods of darkness. It really highlights the wonder of the natural world, the awe and imperfection of nature, and how valuable that is to the human condition.

12. Apart from the ones we've raised here, what is the most important question of our day?

What are the material consequences of inequality on our planet? There are different degrees of self-actualization across the planet – there are those that have it and those that are very far from it. We can look at the progress we have made as a global community in lifting over a billion people out of extreme poverty over the past 30 years, but there are now over a billion people living in informal settlements, which are often unsanitary and highly polluted and present significant environmental and public health challenges.



Rebekah Brown,

Professor of social science, Senior Vice-Provost (Research) at Monash University, Australia, director of the *Revitalising Informal Settlements and their Environments (RISE)* program at the Monash Sustainable Development Institute, Australia.

Born 1973. Bachelor of engineering, Monash University, Australia; practicing civil engineer. 2003 PhD in environmental sociology, University of New South Wales, Australia. 2015 to 2018 director of Monash Sustainable Development Institute, Australia, and chief research officer, Cooperative Research Centre for Water Sensitive Cities.

Research focus: sustainable urbanisation and cities, water, sociotechnical transformations, sustainable development, research methods, inter- and transdisciplinary research.

Selected memberships: Member of Victorian Environment Protection Authority's Governing Board | Editorial Boards *Global Challenges*, *Urban Water Journal*, *Environmental Innovations and Societal Transitions*.

Selected publications: Interdisciplinary Research and Impact (*Global Challenges*, 2019) | Towards water sensitive cities in Asia: An interdisciplinary journey (*Water Science and Technology*, 2017) | Interdisciplinarity: How to catalyse collaboration (*Nature*, 2015) | Actors working the institutions in sustainability transitions: the case of Melbourne's stormwater management (*Global Environmental Change*, 2013) | Urban water management in cities: Historical, current and future regimes (*Water Science and Technology*, 2009).

© 2020 R. Brown; licensee oekom verlag. This article is distributed under the terms of the Creative Commons Attribution License CC BY 4.0 (<http://creativecommons.org/licenses/by/4.0>). <https://doi.org/10.14512/gaia.29.2.2>

REBEKAH BROWN ...

... has made remarkable scholarly contributions that clarify the process of transdisciplinary research. Transdisciplinary research is crucial to environmental science because our environment is a product of complex interactions that are best explored at multiple scales through multiple disciplinary approaches. Especially at these times when the anthropogenic impacts on the environment are so large that they threaten the broader earth system and the health of future generations, it is crucial to convene scientists from many disciplines for productive collaboration. But such collaboration is difficult, because different disciplines bring different vocabularies, different norms, different epistemologies and different considerations about what counts as evidence to these conversations. The difficulties are not only methodological, but also social. Professor Brown's scholarship provides both insight and a roadmap for how transdisciplinary teams can work together.

Rebekah has also contributed substantially to the development of water sensitive cities as a scalable approach to leverage nature-based processes that capture, purify and re-use water that would otherwise run off and carry pollution downstream. Water is an essential resource for healthy cities, but as cities grow, especially in arid environments, managing the water requirements of the city and the local ecosystem

The whole field of environmental science is enriched by Rebekah's scholarship and leadership.

needs innovative architectural design and civil engineering combined with attention to how municipal and regional level storm water and wastewater engineering decisions are made. The water sensitive city approach offers a transformative social-technical framework to address these pressing concerns.

If we are to address the pressing environmental crises of our time, we need to leverage the insights from environmental science within the academy to assist decision makers in the world. Rebekah has moved insights from collaborative environmental science research into policy and practice through her visionary inclusive leadership to mainstream the water sensitive city approach. There are over 14,000 water sensitive urban design based installations implemented across Australia, at a range of scales. The approach has been replicated in other countries including Singapore, Israel and China. Rebekah is currently leading a major project, *Revitalizing Informal Settlements and their Environment (RISE)*. This is a randomized controlled trial adapting water sensitive city interventions into informal settlements in Makassar, Indonesia and Suva, Fiji. These communities face both high flood risk and substantial animal and human fecal pollution all exacerbated by climate change. Rebekah's leadership in productively convening a large transdisciplinary group and her ability to explain to policy makers and donors how healthy water systems are essential to healthy environments and healthy communities has provided unparalleled attention to these approaches. The whole field of environmental science is enriched by Rebekah's scholarship and leadership.

Stephen Luby, professor of medicine, director of research, Center for Innovation in Global Health, Stanford University