

*Embracing the wisdom in everyday practice can help ecologists produce usable knowledge*

Simon West, Ruth Beilin and Hendrik Wagenaar

Ecologists have long sought to be useful. This interest is especially strong in light of today's pressing environmental challenges. One of the main ways that ecologists contribute to nature conservation is through 'adaptive management.'

Adaptive management proposes that nature is so complex – with many different aspects that are interconnected and continually changing – that in order to reach a given set of goals a manager should try out different actions and learn from what happens.

Ecologists have introduced tools to rigorously monitor 'what happens' with the aim of improving the learning process.

Conventional views of science suggest that usable knowledge is produced through the correct application of technical procedures, tools and concepts to produce objective information.

Yet ecologists seeking to apply their tools in adaptive management face a series of dilemmas. While technical procedures provide general steps to follow, they cannot offer definitive guidelines on how to match these steps to specific real-world situations.

Ecologists ask: "But how do I set up a monitoring program in this landscape, given these management objectives, and in light of these deadlines and available resources?"

To do a good job of resolving these dilemmas, ecologists have to draw on a range of additional skills. These include building tangible experience of the situation they are working in – through active 'tinkering' with the landscape, improvisation and conversation with colleagues – to make educated practical judgments.

Practicing ecologists are well aware of the importance of these skills, yet conventional views of science make explicit recognition of them irrelevant or embarrassing. We suggest, however, that they are essential, inescapable and immensely valuable aspects of producing usable scientific knowledge.

In our paper we develop these ideas by introducing a 'practice perspective' on adaptive management. We follow a group of ecologists tasked with monitoring in an Australian national park, and describe what they say and do.

Our work is important for ecologists because it highlights underappreciated competencies in producing usable knowledge, and provides ideas to improve science-policy relationships: close interaction, critical reflection and realistic expectations.

In a 'post-fact' climate it is tempting to retreat behind conventional images of science. Yet unrealistic images will further undermine trust in science. We need to develop ways of thinking that value the 'messy,' open-ended processes of science as important aspects of learning in a complex world.



*Image credit: Zoë Barker (Zoë Barker Draws)*

Plain language summary from article: West, S, Beilin, R, Wagenaar, H. Introducing a practice perspective on monitoring for adaptive management. *People Nat.* 2019; 1: 387– 405. <https://doi.org/10.1002/pan3.10033>