

Conservation, mismatch and the research–implementation gap

R. M. Jarvis^{A,B}, S. B. Borrelle^A, B. Bollard Breen^A and D. R. Towns^A

^AInstitute for Applied Ecology New Zealand, School of Applied Sciences, Auckland University of Technology, Auckland 1142, New Zealand.

^BCorresponding author. Email: rjarvis@aut.ac.nz

Abstract. Despite calls to better link research and practice, the gap between knowing and doing continues to limit conservation success. Here we report on the outcomes from a workshop at the Society for Conservation Biology Oceania Conference 2014 on bridging the research–implementation gap. The workshop highlighted how the gap is still very real in conservation and the importance of bringing together researchers and practitioners to discuss their work. Workshop participants discussed how the research–implementation gap influenced their conservation efforts, identified five key mismatches between research and practice, and recommended seven ways we can work together to bridge the gap. The outcomes identified by the workshop are highly relevant to conservation efforts around the world.

Additional keywords: communication mismatch, institutional mismatch, knowing–doing gap, priority mismatch, scale mismatch, temporal mismatch.

Received 21 October 2014, accepted 3 December 2014, published online 15 May 2015

Introduction

Conservation science has long been established as a mission-driven discipline (Soulé 1985), and yet two-thirds of conservation assessments published in peer-reviewed literature do not plan for action (Knight *et al.* 2008). Despite calls to better link research and practice beginning decades ago (e.g. Saunders and Burbidge 1988), the gap between knowing and doing is still widely acknowledged in conservation management. Therefore, we need to better understand how to bridge this gap in order to achieve the substantial improvements in conservation outcomes that are required. Here we report on significant outcomes from a workshop at the Society for Conservation Biology Oceania Conference 2014 in Fiji on bridging the research–implementation gap.

Participants identified themselves as a researcher or practitioner based on whether they believed their work focused more strongly on research or implementation. The 11 participating researchers were mostly early- to mid-career academics joined by several scientists employed by conservation organisations. The five practitioners included conservation professionals working in stakeholder engagement, natural resource management and planning. Experience of individuals in either group ranged from several years to more than a decade. During the workshop, participants discussed how the research–implementation gap affects their work, identified five key mismatches between research and practice, and recommended seven ways we can work together to bridge the gap. The outcomes identified are highly relevant to conservation efforts around the world.

Scale mismatch

Practitioners at the workshop were more likely to work at a local scale as they felt they were better able to integrate local knowledge into decision-making and increase the involvement of communities for more effective outcomes. Researchers worked from local to global scales, with many working on the latter, due to the broader scope of grants, funding and publication. Both researchers and practitioners highlighted the difficulties in translating conservation goals at broader scales to actions specific to local areas, and emphasised the need for greater multiscale thinking in the future.

Temporal mismatch

Practitioners and researchers appeared to work within different time frames. Practitioners were more adaptive and focussed on resolving emerging local issues so that they did not negatively impact communities or the environment in the future. Researchers were mainly observational, often developing methods to resolve knowledge gaps that had been identified within the scientific literature. Researchers and practitioners agreed that conservation science needed to more effectively combine information from past and present while looking to the future, to ensure actions are evidence-based and grounded in theory, while being as proactive as possible in the field.

Priority mismatch

Researchers' objectives often focused on ecosystem dynamics and threats to species, while practitioners focused on how best

to work within local and social systems for more effective action. When rating the importance of participant's individual conservation objectives, both researchers and practitioners agreed that the most important objectives for successful conservation outcomes were: (1) building and supporting community capacity for local action; (2) training, education, and awareness to implement research recommendations; and (3) understanding the social and ecological factors that best support communities and conservation. Both environmental and social objectives were considered important, but researchers and practitioners highlighted that a key priority of future conservation efforts should be to focus on how to better implement research to deliver action on the ground.

Communication mismatch

Researchers noted that they often had no knowledge of what projects the practitioners were implementing and what actions had been successful or unsuccessful in the past. Practitioners emphasised that they often had limited access to research findings due to their organisations not being able to afford the subscription rates of academic journals. Indeed, a recent paper by Fuller *et al.* (2014) found that only 9% of conservation papers were open access, with only 4% allowing material to be freely reused. Both researchers and practitioners stressed the need for better communication and access to knowledge about each other's work. Greater shared knowledge would ensure that new efforts did not duplicate work that had already been done, identify new opportunities for collaboration, and ensure that conservation is informed by the experiences of both research and practice.

Institutional mismatch

Both researchers and practitioners agreed that institutions and their funding sources affected the type of work they did. Practitioners highlighted how their organisations often had much less funding or resources than academic institutions, and that they did not have as many opportunities as they wished to learn new skills or stay up to date with emerging research methods. Conversely, researchers felt they were not allocated enough time to implement or action their research, instead feeling pressure from their own institutions to publish their findings and move on to the next research project. Further, researchers stressed that while they felt there was a real need to implement their work, taking time to do so could leave them at a career disadvantage in an institutional system that rewards publication outputs over action. Workshop participants stressed that the priorities of the different institutions were often divergent, despite researchers and practitioners wanting to foster greater collaboration. Therefore, new practices need to be developed so that their work can become aligned and well-resourced.

Bridging the gap – what now?

Participants proposed five recommendations to specifically address the mismatches identified by the workshop, highlighting how researchers and practitioners should aim to: (1) develop

multiscale projects coordinating broader goals with local actions; (2) ensure that action is adaptive and future-oriented, while being grounded in theory; (3) design research with action in mind; (4) develop an international open-access resource of existing and proposed projects; and (5) find ways for institutions to provide adequate time and resources to encourage collaboration, skill development and action. Further, participants also suggested that (6) academic students should be co-supervised by researchers and practitioners to ensure they develop complementary skills in research and implementation; and (7) a role should be developed for connectors to identify the most valuable links between researchers, practitioners and projects.

The workshop highlighted how the research–implementation gap is still very real in conservation, and the importance of bringing together researchers and practitioners to discuss their work. However, it is important to note that many of the fundamental points raised by the workshop were not new (see Saunders and Burbidge 1988; Knight *et al.* 2008). Recommendations for bridging the gap have been proposed in the past, but have often been overlooked and quickly forgotten. The main reason for this lack of action appears to be due to institutions not recognising or rewarding time spent bridging the gap. While many individuals felt they were doing what they could within their current roles, real conservation progress can only be possible if institutions begin to prioritise and support the recommendations outlined by the workshop. These findings reflect recent calls in the literature for a revolution in research assessment, highlighting the need to build a collaborative infrastructure between funding sources, research institutions and practitioners (e.g. Largent and Lane 2012; Calver *et al.* 2013). Until institutions rethink the criteria by which they measure success and allocate funding, they will continue to reinforce mismatches between research and practice. Ultimately, the points raised by the workshop may not be new, but they are important, and need to be repeated until there is change. The success of conservation depends on bridging the research–implementation gap to ensure that management is evidence-based, effective and actionable.

Acknowledgements

We extend our thanks to all the participants of the 'Bridging the research–implementation gap' workshop at the Society of Conservation Biology Oceania Conference 2014. We also thank the University of the South Pacific (USP) for hosting the conference and to the conference organisers for their support. We acknowledge Professor Steve Pointing, the Director of the Institute for Applied Ecology New Zealand, for sponsoring us to attend the conference. We also thank Associate Professors Len Gillman and Mike Calver for their insights, and two anonymous reviewers for constructive comments.

References

- Calver, M. C., Lilith, M., and Dickman, C. R. (2013). A 'perverse incentive' from bibliometrics: could National Research Assessment Exercises (NRAES) restrict literature availability for nature conservation? *Scientometrics* **95**, 243–255. doi:10.1007/S11192-012-0908-1
- Fuller, R. A., Lee, J. R., and Watson, J. E. M. (2014). Achieving open access to conservation science. *Conservation Biology*. doi:10.1111/COBI.12346

- Knight, A. T., Cowling, R. M., Rouget, M., Balmford, A., Lombard, A. T., and Campbell, B. M. (2008). Knowing but not doing: selecting priority conservation areas and the research–implementation gap. *Conservation Biology* **22**, 610–617. doi:[10.1111/J.1523-1739.2008.00914.X](https://doi.org/10.1111/J.1523-1739.2008.00914.X)
- Largent, M. A., and Lane, J. I. (2012). STAR METRICS and the science of science policy. *The Review of Policy Research* **29**, 431–438. doi:[10.1111/J.1541-1338.2012.00567.X](https://doi.org/10.1111/J.1541-1338.2012.00567.X)
- Saunders, D. A., and Burbidge, A. A. (1988). Ecological theory and biological management of ecosystems. Occasional Paper No. 1/88. Department of Conservation and Land Management WA, Perth.
- Soulé, M. E. (1985). What is conservation biology? *Bioscience* **35**, 727–734. doi:[10.2307/1310054](https://doi.org/10.2307/1310054)