What does coproduction look like in the public lands context?

An informational tool provided as part of a toolkit for researchers and resource managers with an interest in coproducing actionable science to support public land management

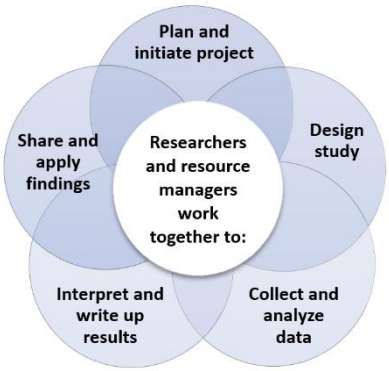
The federal government is committed to using science to inform decision making[1]. Federal staff need usable science products that can help inform management decisions and actions across multiuse landscapes. Adopting a coproduction approach to conducting science is one mechanism that can help ensure that science requested by federal staff will better meet their needs. Coproduction can also help researchers and resource managers produce knowledge and tools that are relevant, timely, and more easily integrated into agency work processes[2,3].
Staff in the Bureau of Land Management, U.S. Geological Survey, North Central Climate Adaptation Science Center, U.S. Department of Agriculture – Agricultural Research Service, and U.S. Fish and Wildlife Service worked together to develop an informational toolkit that can help support coproduction of science products that are intended to inform decision-making on federally managed public lands. As part of this effort, we talked to staff in multiple federal agencies and found that there was not a common understanding of what the term coproduction means. *This finding led our team to create the toolkit based on the following foundational ideas.*

Definitions

Coproduction is a highly effective approach to producing actionable science through collaboration between researchers, scientists, specialists, planners, managers, and related stakeholders to inform policy and management decisions[4,5,6]. **Actionable science** includes data, analyses, syntheses, projections, and tools that can support resource management decisions[4]. Coproduction is a process that both requires and fosters development of strong working relationships. The level of collaboration can vary widely depending on the nature of individual projects[6]. While coproduction can include stakeholders such as private landowners, Native American tribes, and many others, the focus of this toolkit is on coproduction between federal public land management agencies and science providers (resource managers and researchers).

Shared understanding, expertise, and roles

When partners decide to engage in coproduction, they do so with respect, trust, and a desire to learn from and work closely with each other. They also continually work to better understand each other's professional context, constraints, and opportunities. Many agency researchers have policy and resource management experience and many resource managers, planners, and decision makers are also often scientists. This overlap in expertise and willingness to learn and engage with others can facilitate successful research-management collaborations.



Engaging in coproduction means that staff from all agencies work together as partners on many, if not all, major aspects of projects, from conception to application (see figure)[6,8]. Individual staff roles and responsibilities will vary depending on the nature of the project.

Potential benefits of coproduction:

- Science that is actionable (relevant, timely, and useful for decision-making)[7,8,10,11]
- Science products that are more likely to be trusted, easy to integrate into agency work processes, and accessible (e.g., in formats beyond traditional scientific publications)[2,8,9]
- Resource management that is more responsive to environmental changes and stakeholder needs[3,6]
- Ability to better focus research investments on the science topics and deliverables that managers need[4,9,11]
- Meaningful and relevant development of professional skillsets for partners[8,9]
- Ongoing opportunities for networking that can support long-term programmatic and partnership growth[3,8,9,10]
- Commitment from scientists to provide support for use of products in agency work processes[9]

Potential challenges of coproduction:

- As a relatively new approach to conducting science, there are few standard tools or institutional structures that can facilitate and support coproduction[2,9]
- Extra time may be needed from all parties to identify partners and participants, develop and conduct the project, maintain good communication, and develop actionable products[8,9,10,11]
- Skills and staff specialized in information exchange and facilitation may be needed[8,9,11]
- Divergent individual motivations and career evaluation metrics may not support coproduction[8,9,10]
- Institutional structure, culture, and policies can complicate partnership interactions[8,9]

References:

[1] White House Memo
[2] Kruk et al. 2017
[3] Laursen et al. 2018
[4] Beier et al. 2017
[5] Bamzai-Dodson et al. 2021
[6] Meadow et al. 2015
[7] Cash et al. 2003
[8] Dilling and Lemos 2011
[9] Cvitanovic et al. 2019
[10] Pearman and Cravens 2022
[11] Naugle et al. 2020

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