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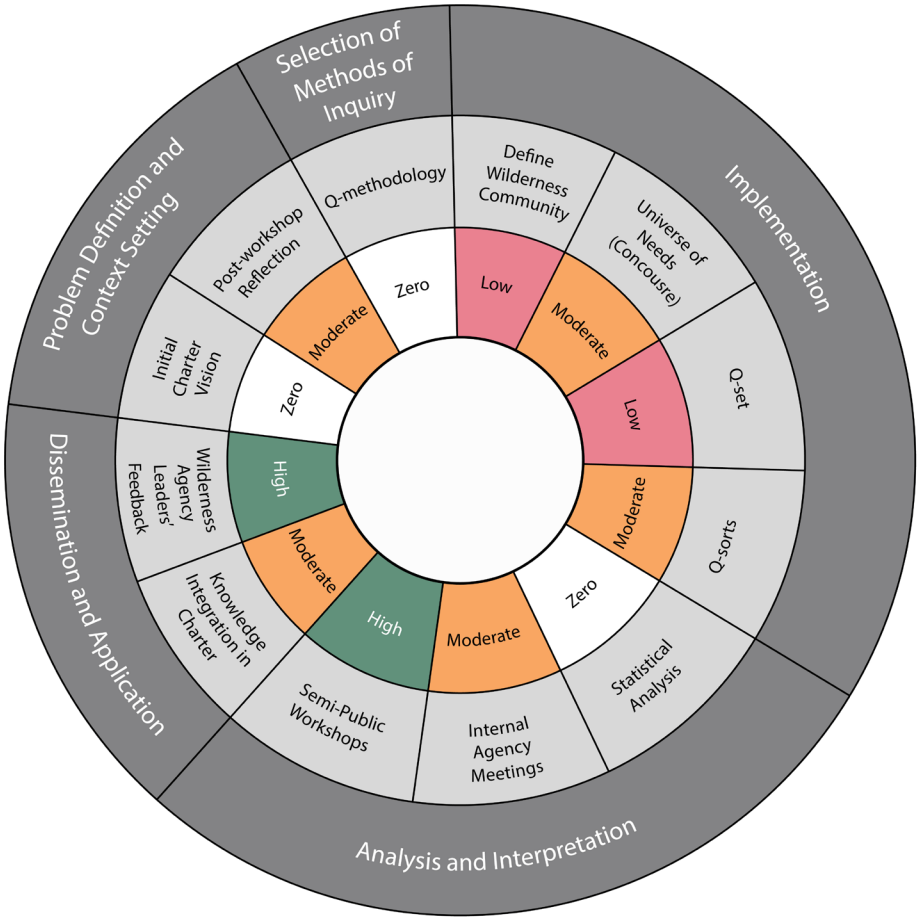
Science You Can Use *in 5 minutes*

Co-producing Science With Managers: Finding the right time-and-effort balance for those involved

Land managers rely on best available information and relevant research for decision making, but matching the right information to the right questions can sometimes be challenging. To close this gap, when researchers and managers co-produce research from the beginning it is more likely research findings will have practical applications. Recently published work by USDA Forest Service researchers Chris Armatas, Teresa Hollingsworth, and colleagues working at the Aldo Leopold Wilderness Research Institute (ALWRI) in Missoula, Montana, reflects on both the benefits and tradeoffs of using a co-production approach for developing the ALWRI 10-year science agenda intended to help inform management of wilderness areas.



The 111.7 million acres of federal wilderness areas are managed and stewarded by multiple land management agencies, which can get complicated. By co-producing the ALWRI 10-year science agenda, scientists and partners (i.e., managers and other non-researchers in the "wilderness community") came together from the very beginning with a shared mission. Armatas recalls, "We wanted to design a process that went beyond simply collecting input from our partners. We worked with a broad spectrum of people to come up with a plan that created ownership, added nuance, and demonstrated ALWRI's responsiveness to our partners."

The researchers first identified information needs with the

This framework can be adapted by managers and researchers to set expectations and understand where the different people involved in the co-production process can contribute their expertise. Here we depict the ALWRI 10-year science agenda co-production process. The outside of the wheel are generic phases of the research cycle, the middle wheel highlights the specific phases for co-producing, and the inside wheel is the level of manager/partner involvement in the science-agenda process.

help of over 175 respondents from the Forest Service, Bureau of Land Management, Fish and Wildlife Service, National Park Service, Tribes, universities, and other partner groups. “Not only does wilderness represent so many things to many people, but, as an interagency institute, ALWRI is tasked with supporting all four agencies that manage wilderness, so it is critical that these agencies feel invested in the research that we do,” explains Hollingsworth. The responses were used to help identify and prioritize wilderness research needs. Five workshops were then conducted, where partners were invited to reflect on and add nuance to the preliminary findings and help turn them into a research agenda. The resulting 10-year research plan was created from the combination of ALWRI’s scientific expertise and capacity and the priorities identified in this inclusive process of engagement.

In reflecting on the “ideal” of co-production, where there is a high level of participation of researchers and partners at every stage, ALWRI researchers considered whether there were reasons to modify the approach based on the goals of the project. Armatas explains, “The process comes with some costs, and so it is important to be deliberate in how a collaborative process is designed to not unnecessarily overburden all of those involved.” For example, including managers in the phases of data analysis and methods selection could require that the researchers provide training in these areas, which may not be feasible and could lead to burnout and “collaboration overload.” Thus, co-production may not necessarily be focused on maximizing partner involvement at all stages, but on addressing the research-management gap while minimizing costs to those involved.

Featured Scientist

Chris Armatas is a research social scientist with the Rocky Mountain Research Station, Aldo Leopold Wilderness Research Institute.

Sue Miller is the author of this Science You Can Use.

Management Considerations

- Co-production of research integrates managers early in the research process to ensure findings are practical and applicable.
- Researchers at the ALWRI engaged over 175 partners from various agencies and organizations to identify and prioritize future wilderness research needs, leading to a co-produced 10-year science agenda.
- While full participation at every stage of research may be considered ideal by some, researchers recognized that excessive involvement could create undue burdens, leading to collaboration fatigue and logistical challenges.
- Rather than maximizing partner involvement in co-production at all stages, this reflection emphasizes designing collaborative processes that enhance partner buy-in and research relevance and impact while acknowledging resource constraints.

Further Reading

Armatas, C.A.; Hollingsworth, T.N.; Black, C.; Taylor, J.J. 2024. Reflecting on the co-production ideal through practice. Socio-Ecological Practice Research.

Taylor, J.J.; Hollingsworth, T.N.; Armatas, C.A.; et al. 2023. The future of wilderness research: A 10-Year wilderness science strategic plan for the Aldo Leopold Wilderness Research Institute. International Journal of Wilderness. 29(1): 46-71.

With fondness and gratitude, we remember Teresa Hollingsworth in this Science You Can Use. Teresa was the Director of the Aldo Leopold Wilderness Research Institute and a long-time research scientist who specialized in boreal ecology. Teresa was passionate about providing science and building relationships to steward the Nation’s wilderness. She was equally dedicated to serving all of her team members, helping inspire their best ideas while always offering support and friendship.