

**BUILDING CAPACITY FOR
ENGAGEMENT, EVIDENCE USE,
AND SOCIETAL IMPACT IN
RESEARCH:**

A WORK IN PROGRESS

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ENGAGEMENT AND IMPACTS ASSESSMENTS AT THREE SCALES

Project-scale

- Identifying what works and doesn't work when climate and environmental scientists engage with natural resource managers



Program-scale

- Building on findings from individual projects to inform program management decisions about supporting engagement and prioritizing impacts

Institution-scale

- Designing impacts evaluation framework that can support current efforts, build capacity among researchers, and encourage institutional support for engagement and impacts

FRAMEWORK FOR ASSESSING RESEARCH IMPACT

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Societal Goals</p>	<p><i>What do we want to contribute to? Is there a problem we can help solve?</i></p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Use/Impact Descriptors</p>	<p><i>How are we contributing to reaching that goal?</i></p> <p><small>Adapted from: Edwards, D. M., & Meagher, L. R. (2020). A framework to evaluate the impacts of research on policy and practice: A forestry pilot study. <i>Forest Policy and Economics</i>, 101975.</small></p>	 <p>Instrumental Impacts Conceptual Impacts Capacity Impacts Connectivity Impacts Attitude Impacts Socio-enviro Impacts</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Data Sources</p>	<p><i>Where can we find evidence of our impact?</i></p>	<ul style="list-style-type: none"> • Project-scale data (interviews, surveys, observations) • Existing institutional data (proposals, annual reports) • Existing external data (policy and social media databases) • Possible future institutional data (impact- and engagement-specific reports)

COMPELLING EVIDENCE

Using data collected as part of the *Coldwater Assets* project, Oregon Department of Fish and Wildlife has been able to change sport fisheries regulations in ways that better protect Redband Trout throughout their lifecycle. They issued targeted closures or imposed harvest limits in areas that were shown to be particularly important to Redband Trout survival. They were also able to loosen restrictions in areas where data indicated greater abundance of Redband Trout.

Meadow, A. M., Guido, Z., Crimmins, M. A., & Mcleod, J. (2016). From Principles to Action: Applying the National Research Council's Principles for Effective Decision Support to the Federal Emergency Management Agency's Watch Office. *Climate Services*, 1, 12-23.

VanderMolen, K., Meadow, A. M., Horangic, A., & Wall, T. U. (2020). Typologizing Stakeholder Information Use to Better Understand the Impacts of Collaborative Climate Science [journal article]. *Environmental Management*, 65, 178-189.
<https://doi.org/10.1007/s00267-019-01237-9>

- Many examples of use of research at project scale
- Collecting the evidence is labor intensive
- Comparing processes and impacts across multiple projects is more challenging
- Assessing program impact and informing decisions can be a touchy subject
- Making it through the “evidence hierarchy” is more challenging:
 - qualitative vs quantitative
 - significance vs reach

CAPACITY AND TRAINING NEEDS

Rozance, M. A., Krosby, M., Meadow, A. M., Snover, A., Ferguson, D. B., & Owen, G. (2020). Building capacity for societally engaged climate science by transforming science training. *Environmental Research Letters*, 15(12), 125008.

Ferguson, D. B., Meadow, A. M., & Huntington, H. P. (2022). Making a Difference: Planning for Engaged Participation in Environmental Research. *Environmental Management*, 69(2), 227-243. <https://doi.org/10.1007/s00267-021-01585-5>

Meadow, A. M., & Owen, G. (2021). *Planning and Evaluating the Societal Impacts of Climate Change Research Projects: A guidebook for natural and physical scientists looking to make a difference.* <http://doi.org/10.2458/10150.658313>

- The legacy of Mode 1 science is strong
 - **Linear** approach is still embedded in systems
- To move to **Relational** approach, our research workforce needs additional support to learn:
 - effective and ethical engagement
 - monitoring, evaluation, and learning processes
 - how and why research is used
- To move to **Systems** approach, our academic leadership needs the same training.
- **Early career scholars have more of the necessary skills but need institutional support to put their skills to use.**

IMPLEMENTATION IS HARD

Alvesson, M., Gabriel, Y., & Paulsen, R. (2017). *Return to meaning: A social science with something to say*. Oxford University Press.

Brink, C. (2018). *The Soul of a University: Why Excellence is Not Enough*. Policy Press.

Egland, K., & Kelley, H. (2020, March 24, 2020). Climate justice in frontline communities: Here's how to (really) help. *The Hill*.
<https://thehill.com/changing-america/opinion/489315-climate-justice-in-frontline-communities-heres-how-to-really-help/>

Fernandez-Bou, et al. (2021). 3 Challenges, 3 Errors, and 3 Solutions to Integrate Frontline Communities in Climate Change Policy and Research: Lessons From California. *Frontiers in Climate*, 3.
<https://doi.org/10.3389/fclim.2021.717554>

- Meet the research community where it is
- Find the traction points
- Providing support and guidance is our best path forward right now
- Share examples of impact – and examples of how to demonstrate impact
- Build trust in the approach over time

INVESTING IN ENGAGEMENT

- As funder expectations change, academic expectations will change
 - Recognition and rewards will follow
 - Diffuse funding structure means we still don't have consistent "push"
- Investments in capacity-building are necessary in the immediate-term
 - ***Impacts literacy*** so researchers know *how* research moves into practice
 - ***Engaged scholarship*** and ***participatory research*** practices
 - ***Ethics*** so that we do not harm community partners
- Investments in engagement could help re-build universities' social capital

THANK YOU

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Societal Impact

