Evaluating the Processes and Impacts of Collaborative Climate Science Research Projects

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Project Goals

- Design an *evaluation tool* for use on *collaborative climate science research projects* (i.e. co-produced climate science)
- Use the tool to identify project *impacts and promising practices* in collaborative processes

*The **Southwest Climate Adaptation Science Center** was established in 2011 to provide objective scientific information, tools, and techniques that land, water, wildlife, and cultural resource managers and other interested parties can apply to anticipate, monitor, and adapt to climate change impacts in the southwestern United States.*

*The mission of the **Northwest Climate Adaptation Science Center** is to deliver science to help fish, wildlife, water, land and people adapt to a changing climate.*

Center circle:
Theory of Change:
More Engagement Between Researchers and Practitioners Increases the Use of the Research in Resource Management

Inner ring labels:
2-year projects

Scientific uncertainty

Few resources for engagement

Academic reward system

Little training in collaborative research

Left side:
Project evaluation wasn't built into the program

Participants often had very different definitions and expectations for engaged research

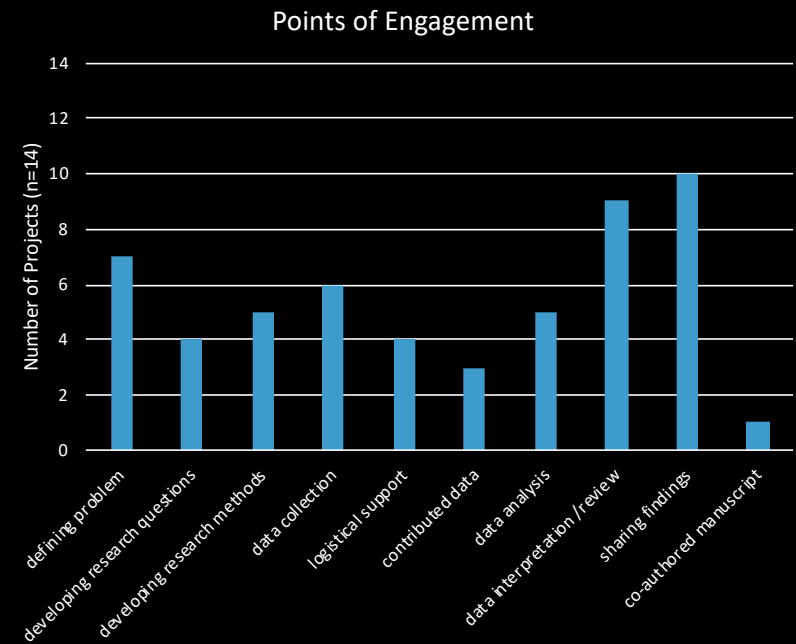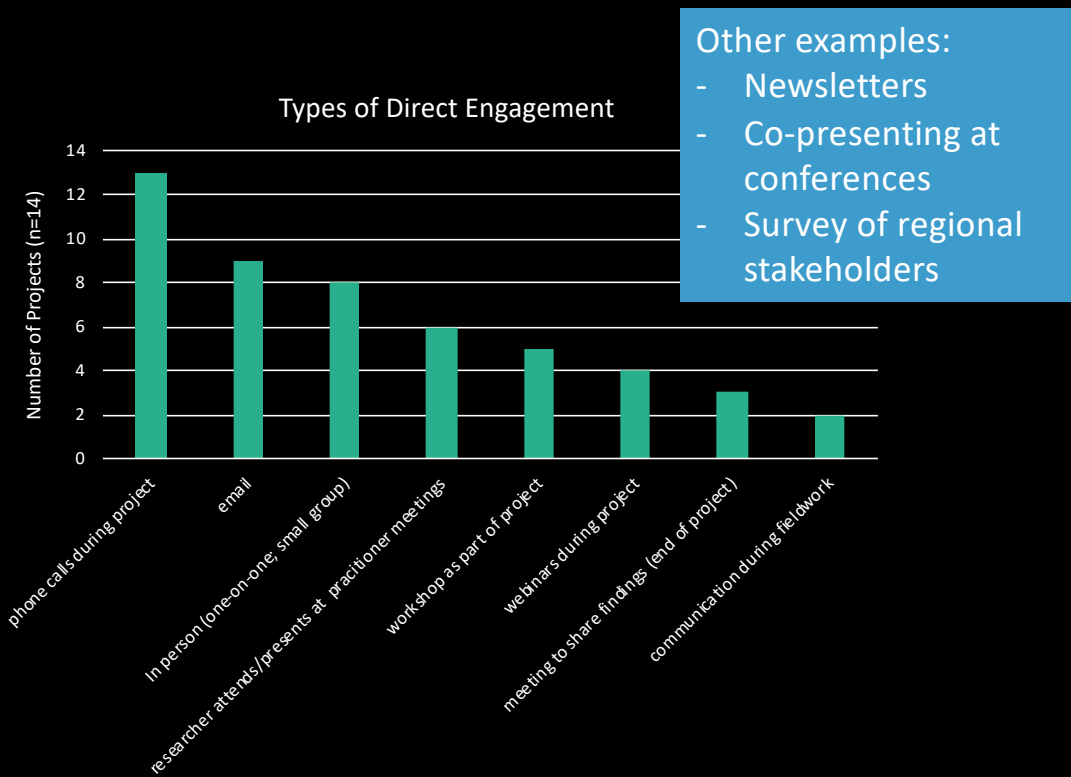*Program expectations for outcomes and impacts were not well-defined*

Right side:
Insufficient comparable baseline data – what are the reasonable expectations for process and impacts for this kind of research?

How long does it take for research to yield impacts in this field?

Project Realities

- *Few projects exhibited collaboration* (or "co-production of knowledge") as we understand it from the literature
- However, *most projects had at least some engagement*

- **Under these conditions**, what kinds of:
  - *Engagement processes* occurred?
  - *Research impacts* emerged?

How did researchers and practitioners interact during the projects?

Other examples:
- Newsletters
- Co-presenting at conferences
- Survey of regional stakeholders

Types of Direct Engagement

(bar chart — Number of Projects (n=14))

- phone calls during project: 13
- email: 9
- In person (one-on-one; small group): 8
- researcher attends/presents at pracitioner meetings: 6
- workshop as part of project: 5
- webinars during project: 4
- meeting to share findings (end of project): 3
- communication during fieldwork: 2

Points of Engagement

(bar chart — Number of Projects (n=14))

- defining problem: 7
- developing research questions: 4
- developing research methods: 5
- data collection: 6
- logistical support: 4
- contributed data: 3
- data analysis: 5
- data interpretation/review: 9
- sharing findings: 10
- co-authored manuscript: 1

I think it would have gone better if we'd been included as more of a real collaborator because my experience with this project was that they came, they did it and then they sent us a draft report and . . . I spent several days revising the report. Extremely frustrated because it could have been avoided if they'd included us more.

How did practitioners USE the research?

Mostly *conceptual* uses, as we might expect
- citing in internal documents
- spurring agency research efforts

We counted use in external-facing documents as *instrumental*

We found one example of the research *directly informing* a management action.

Type of Impact	Description	Number of Examples	Number of Projects
Conceptual	Findings used in internal agency document or tool	19	11
Instrumental	Findings used in external-facing agency document	7	4
Conceptual	Agency used findings to spur own research efforts	7	6
Conceptual	Agency used in public communication/outreach	2	2
Instrumental	Informed a proposed management action	1	1
Conceptual	New networks developed	1	1

Practitioners also told us the research was *credible and salient*, they shared it with others, and they felt *better-informed* about the issues because of these projects.

Yes, he's giving me what I want because he's pulling together a holistic picture. [For most other species] we're working with partial insight. [For this species] we have a more comprehensive picture, largely because of the work that [researcher] has led. I think this enables us to craft more effective, implementable, and sustainable solutions.

Reflections on Evaluation

- *Expectations* about the amount of collaboration were *not realistic*

- We still believe our *theory of change is viable* – but we didn't gather the kind of evidence we were hoping for

- We gathered *valuable baseline data* about the kinds of processes and impacts that are possible given the characteristics of these projects

- We hope to continue to *engage with these programs* to help them *increase engagement and impacts.*

Thank you!

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