

Midwest Climate Adaptation Science Center Maladaptation Summary Report

At the 2024 Midwest Climate Adaptation Science Center's (MW CASC) Annual Gathering in East Lansing, Michigan, postdocs affiliated with the [MW CASC](#) and the University of Minnesota's [Institute on the Environment](#) hosted a World-Cafe style discussion focused on the topic of "maladaptation" with around 30 participants. The Intergovernmental Panel on Climate Change (IPCC) defines maladaptation as adaptation actions that inadvertently exacerbate, redistribute, or introduce new climate vulnerabilities (IPCC 2022). Our goal was to build individual and shared understandings of maladaptation for Midwest natural and cultural resource managers and researchers, drawing from the perspectives and experiences of these adaptation professionals.

Our discussion was oriented around two questions for session participants:

- 1. How do you define and understand maladaptation?**
- 2. How do we move forward from here?**

Our post-session analysis found that participants coalesced around several themes in their definition and understanding of maladaptation and ways we might increase awareness of maladaptation within the MW CASC and broader resource management communities. Below, we present the themes.

How do you define and understand maladaptation?

Maladaptation is more than the trade-offs or costs of an adaptation action.

- Maladaptation is often a surprising outcome with broad negative consequences. This is in contrast to negative but anticipated "side effects" or trade-offs of adaptation.
- Some participants pointed out that people make adaptation decisions with good intentions. However, these decisions are often short-sighted in their understanding of both temporal and spatial impacts.
- In a management context, maladaptation is "inevitable"; thus, we must start addressing it in our adaptation planning and evaluation efforts.

Maladaptation can involve organizational inflexibility and attitudes toward failure.

- Maladaptive outcomes are made worse by rigidity in decision-making and organizational cultures that celebrate success and ignore or punish failure.
- This culture can diminish our ability to discuss and learn from maladaptation.

Maladaptation should be understood as a process, not only as an outcome.

- When asked if they would change their definition of maladaptation after hearing from other groups, some participants said they would add that maladaptation is a byproduct of siloed decision-making and a lack of transdisciplinary feedback.
- Some participants add that whether something is defined as maladaptation depends on whether individuals learn from negative outcomes.

Maladaptation has parallels in evolution.

- Some session participants associate the word “maladaptation” with evolutionary biology.
- Since evolution is “short-sighted” about future conditions (like humans), maladaptation is also inevitable in an evolutionary context.
- Changes in environmental conditions can make a historically useful inherited trait unsuccessful. The new climate context can also make many historic management actions unsuccessful.

How do we move forward from here?

Maladaptation dialogues

- Some participants felt dialogues around maladaptation need more integration into the climate adaptation field.
 - They felt adaptation organizations should center dialogue and storytelling about maladaptation to improve their goal-setting and outcomes.

Organizational culture

- Several participants felt that organizations should embrace a culture shift that embraces imperfection and learning from failures.
- Others felt improved incentive structures could encourage sharing about maladaptive outcomes.

Maladaptation logistics

- Some participants recommended logistical changes to adaptation projects, wherein practitioners pre-register adaptation projects prior to implementation and record which metrics will be evaluated to decide the project's success or failure.
- Pre-registering would allow managers to measure and understand successful and unsuccessful outcomes more effectively.
- Others recommended that organizations and granting bodies require a handful of pre-project or pre-proposal questions that address maladaptation considerations.

Dealing with risk

- Some participants fear that adaptation decision-making becomes gridlocked (or resistant to innovation) because of (too much) risk-aversion.
- Some participants stressed the importance of bold and innovative adaptation actions and needing to confront acceptable risks.
- Incremental approaches to adaptation might have higher risks or costs in the long run.
- By understanding maladaptation, managers can better embrace it throughout the adaptive management process.

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Have questions? Interested in the work?

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