Marine Carbon Dioxide Removal (mCDR)
Today’s remarks

• Context: mCDR research needs

• Responsible development and scaling of U.S. mCDR research

• Research governance

• Monitoring, Reporting, & Verification (MRV) Complexities

• Need for a clear regulatory regime
Context: mCDR Research Needs

*mCDR research needs to produce multidisciplinary, decision-supporting information!*

• Research must inform decision-making challenges facing us:
  • Who makes what decisions?
  • What information is relevant?
  • When should activities be scaled up or closed out?
  • Who’s responsible for problems?
  • Who benefits and how? Is anything harmed?
  • How do mCDR activities fit in among other marine uses?
  • How does mCDR interact with the global mitigation portfolio? Any limits?
Responsible development & scaling of U.S. mCDR research

• CoCs used in many fields to encourage responsible research
• Create common norms and shared principles, e.g., regarding transparency, public review, and benefits sharing
• Especially useful for complex issues with potential to affect people and the environment

3 phases of responsible research described in mCDR CoC

**Planning**
- Whether, when, where, and how to conduct research?
- Project design, possible impacts, identification of stakeholder, siting, permitting

**Executing**
- Monitoring positive and negative project impacts, accountability, liability, reporting, transparency, oversight, decisions about scaling up/scaling back

**Concluding**
- Moving to next level of development?
- Communication of results, remediation of adverse outcomes, fair distribution of benefits, decommissioning.

Research governance

Funders have a key role! They can:

• Require documented use of research CoC
• Require adherence to permits and protocols
• Require and support data sharing & reasonable IP rights
• Tie future funding to past performance on above issues
• Help coordinate research community and develop joint activities and resources
MRV complexities

• MRV is central to counting mCDR’s contributions to GHG mitigation.
• MRV is more straightforward for some mCDR methods than others.
• There is no mCDR MRV protocol now; developing one will depend on modeling and observational investments.

Palter et al. Eos, 2023
Need for a clear regulatory regime

• Research governance and permitting are evolving quickly
• Guidance is needed about what constitutes experiments vs. implementation and rogue/unregulated behavior
• Guidance is needed about who holds authority/has final say
• Who is liable for experiments? For deployment?
Thank you!