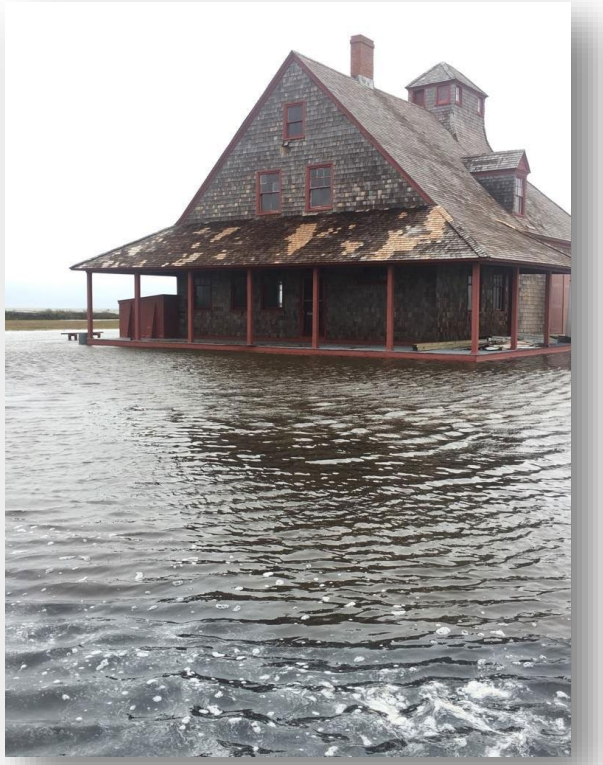
Value-based Decision Support for Adapting Vulnerable Coastal Cultural Resources



Cape Lookout National Seashore Facebook page

E. Seekamp

M. Henderson

Cape Lookout National Seashore Facebook page

Erin Seekamp, Ph.D.
Professor
Department of Parks, Recreation & Tourism Management

Cultural Resources & Climate Change

- Management context
  - Multiple stakeholder perspectives
    - How much change, including adaptation, is “acceptable”?
- Policy context (NPS)
  - Significant & most vulnerable properties
    - If equally vulnerable, how to prioritize among “significant”?
- Fiscal reality
  - Insufficient to properly conserve all heritage
    - How maximize heritage conservation given budget “constraints”?
- Emerging considerations
  - Continuity when loss is inevitable
    - How to accommodate for “loss”?

E. Seekamp

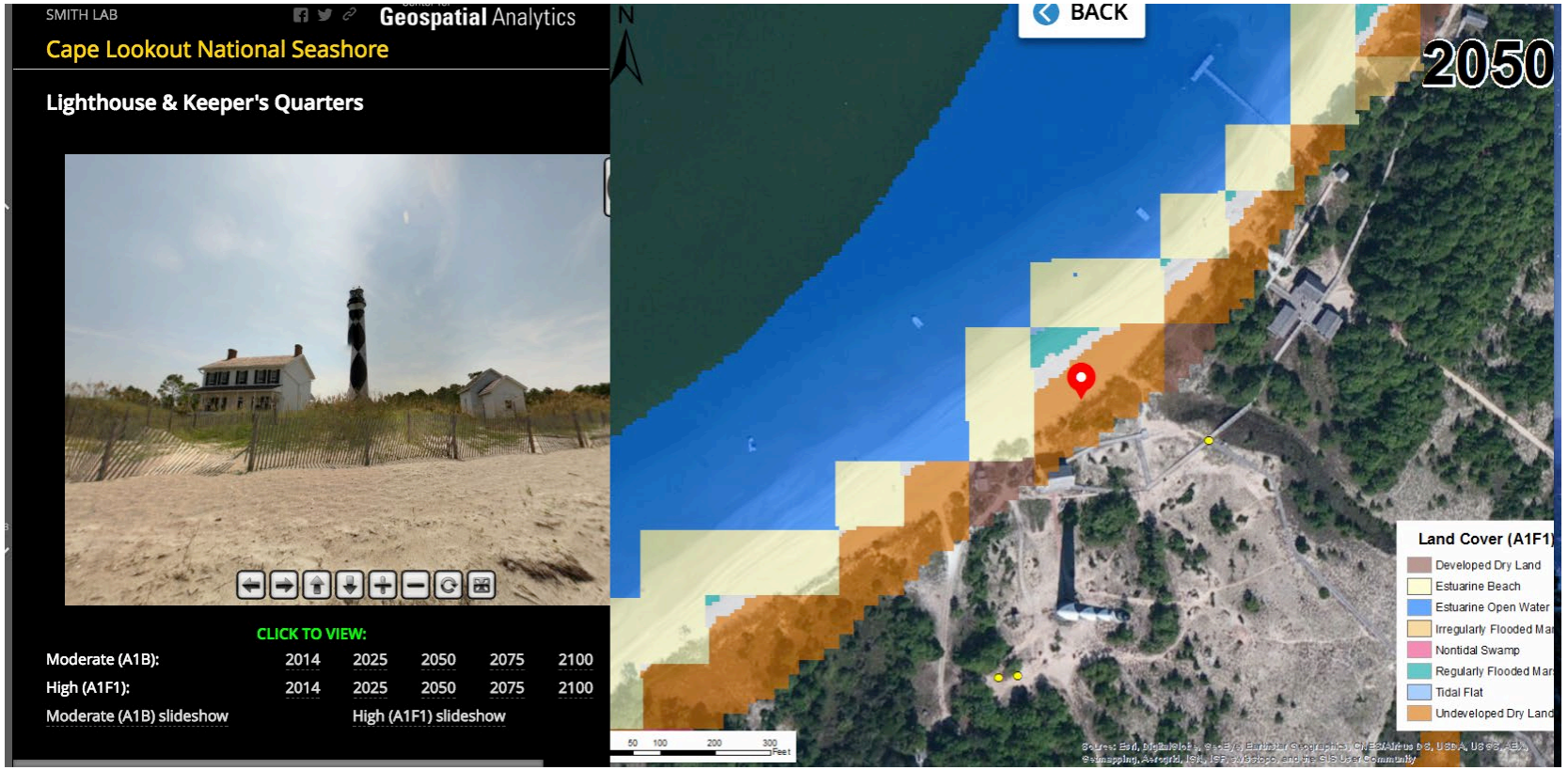
Management Context

How much change is “acceptable”?

How much change is “acceptable”?

Stakeholder Assessments

- Experts
- Visitors
- Members of Partner Organizations
- Members of Associated Community



Federal, State, Private, Academic
Historic Preservation and Cultural Resource Management Experts

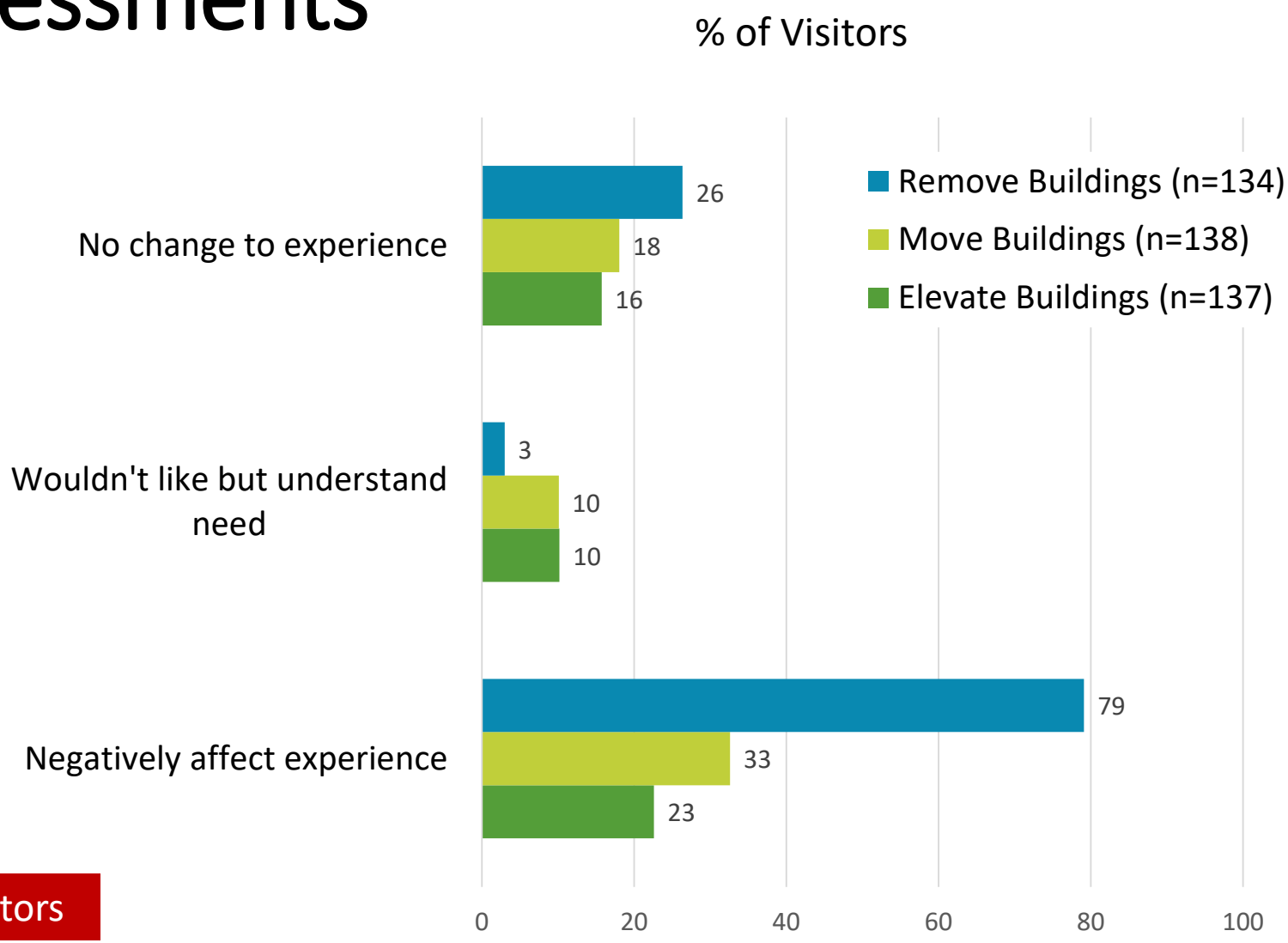
Recommended Adaptation:
Document & release (38%)
Improve for resilience (25%)

Seekamp et al. (2019a)

How much change is “acceptable”?

Stakeholder Assessments

- Experts
- Visitors
- Members of Partner Organizations
- Members of Associated Community



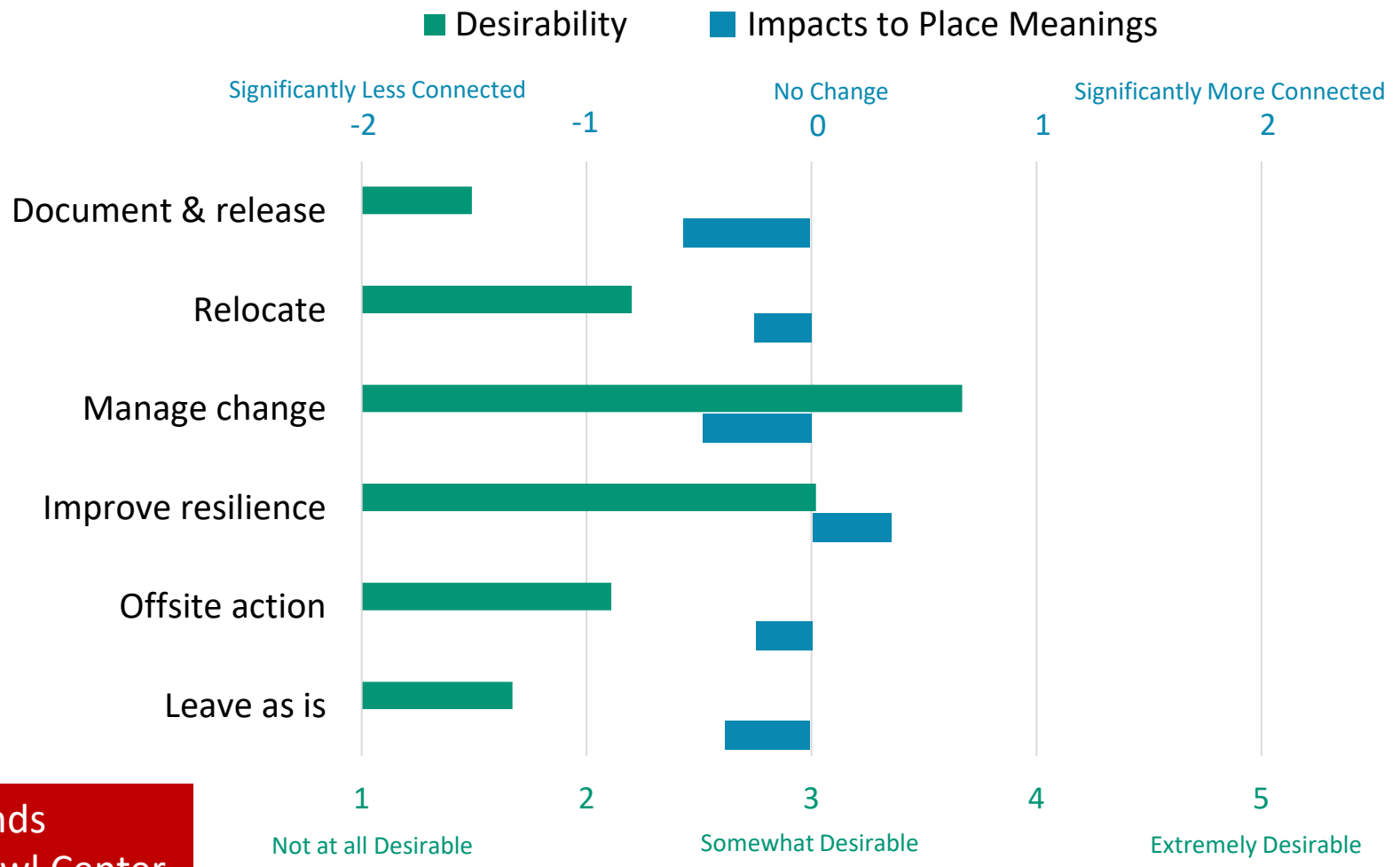
Cape Lookout National Seashore Visitors

Seekamp et al. (2019a)

How much change is “acceptable”?

Stakeholder Assessments

- Experts
- Visitors
- Members of Partner Organizations
- Members of Associated Community



Friends of Portsmouth Islands
Core Sound Museum and Waterfowl Center

Seekamp et al. (2019a)

Stakeholder Assessments

- Experts
- Visitors
- Members of Partner Organizations
- Members of Associated Community

“Well I can’t imagine the Portsmouth church up on stilts. I just can’t imagine it! Nor can I imagine it in downtown Harker’s Island, or downtown Ocracoke or somewhere. I just can’t imagine it there. It would lose its soul.”

Henderson & Seekamp (2018)

Former Residents and Descendants
Cape Lookout National Seashore

E. Seekamp

Portsmouth Methodist Church
Portsmouth Village Historic District
Cape Lookout National Seashore

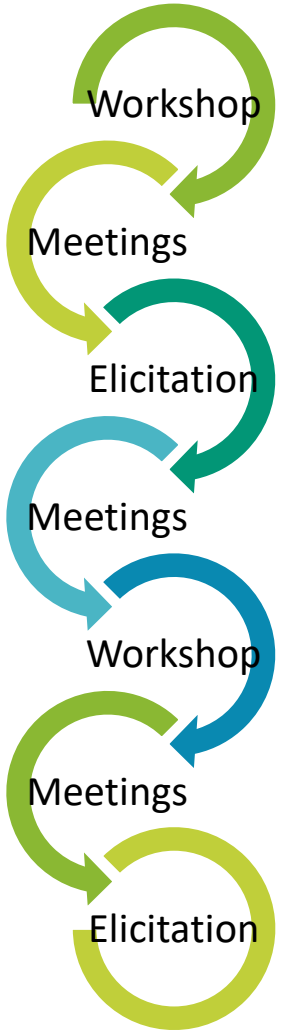
Policy Context & Fiscal Reality

How to prioritize among “significant”?

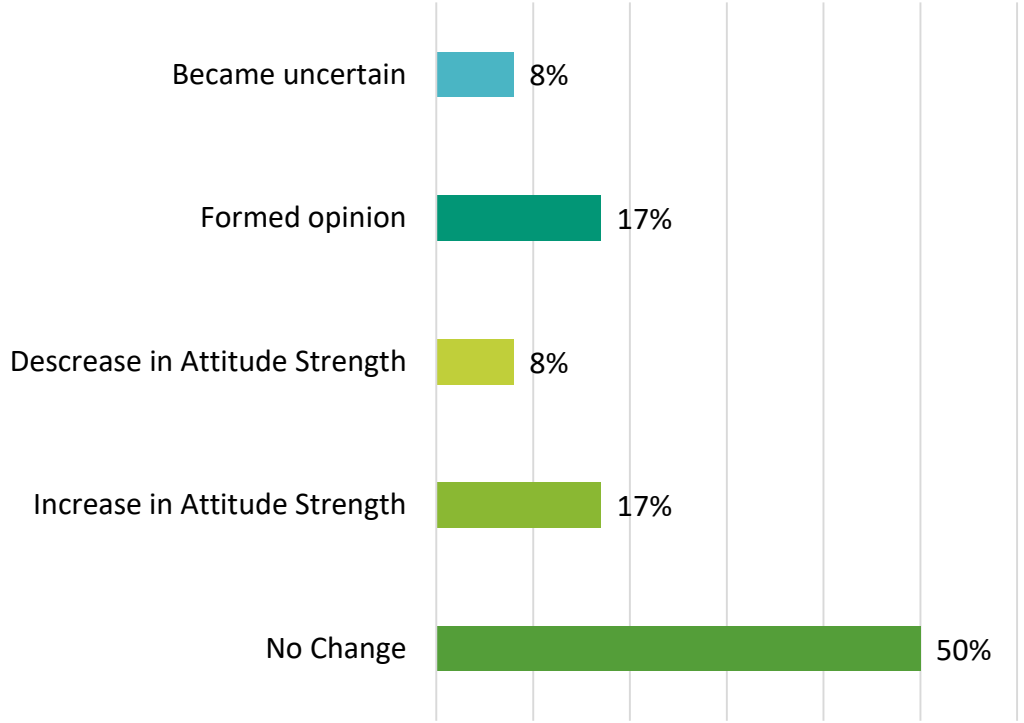
How maximize heritage conservation given budget “constraints”?

Co-Production, Prioritization & Optimization

- Historic Buildings
  - Cape Lookout
    - Pilot Study
  - Gulf Islands
    - Transferability Test
- Archeological Sites
  - NPS Programs
    - Beta Framework
  - Acadia
    - Tribal Engagement

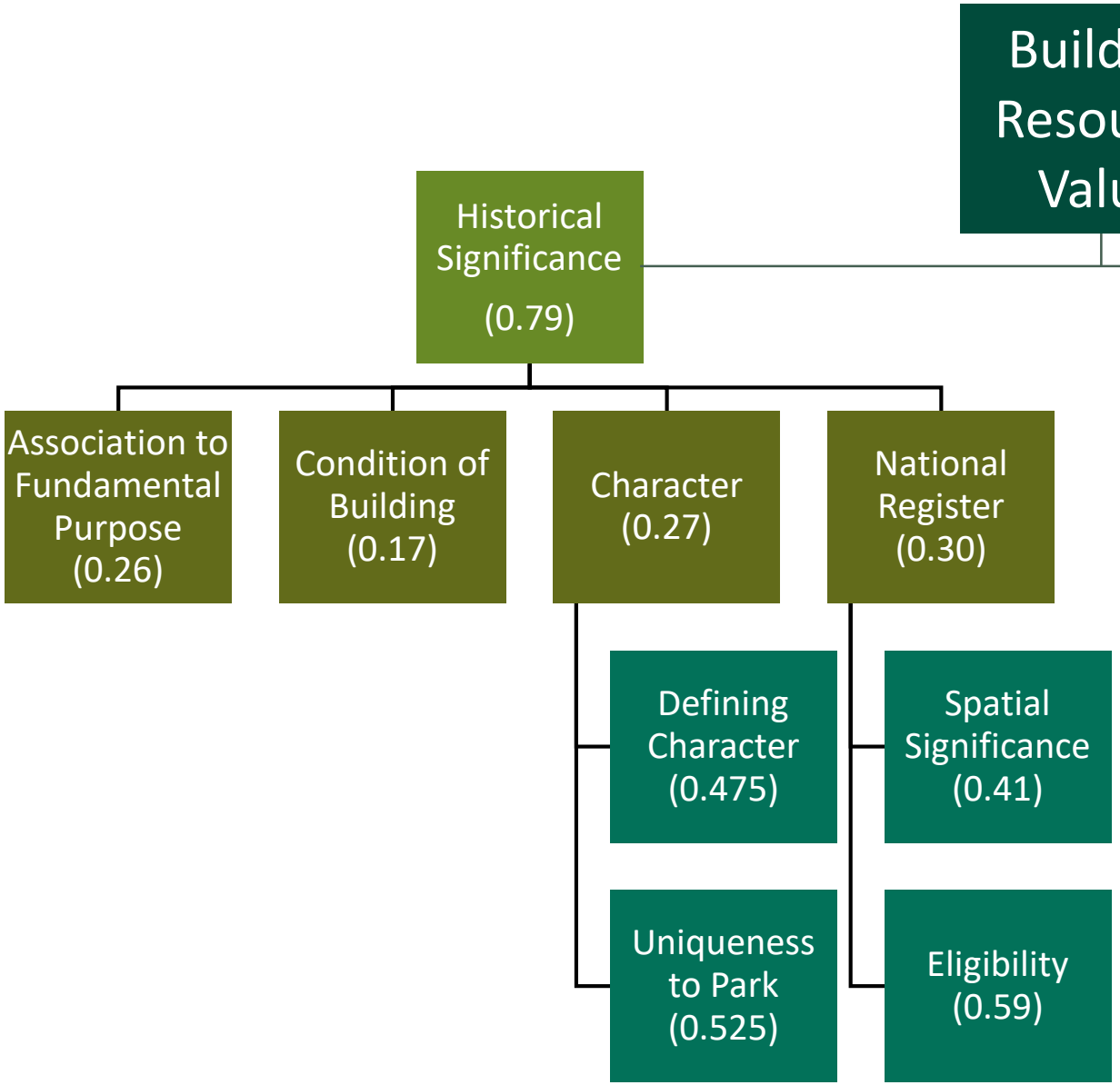


How important is it that structures physically remain on the landscape within 30 year planning horizon



Fatorić & Seekamp (2017)

How prioritize among “significant”?



Measurement Framework Historic Buildings

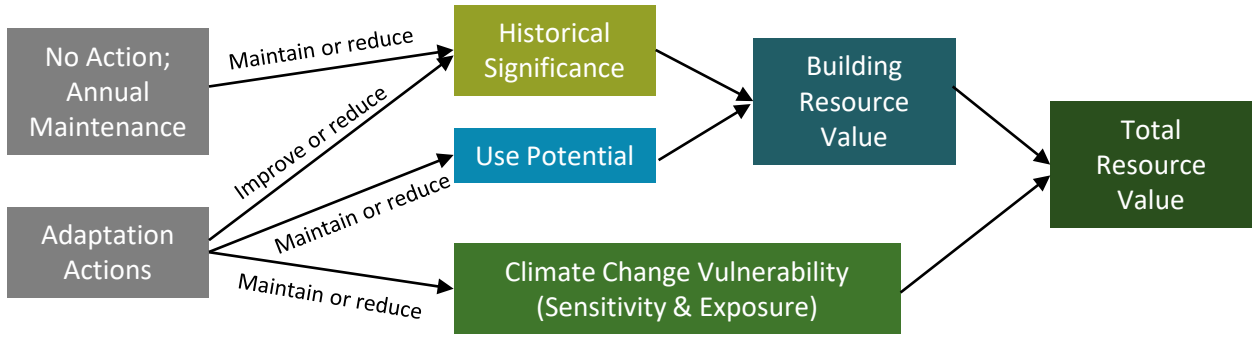
Fatorić & Seekamp (2018)

How maximize conservation under fiscal "constraints"?

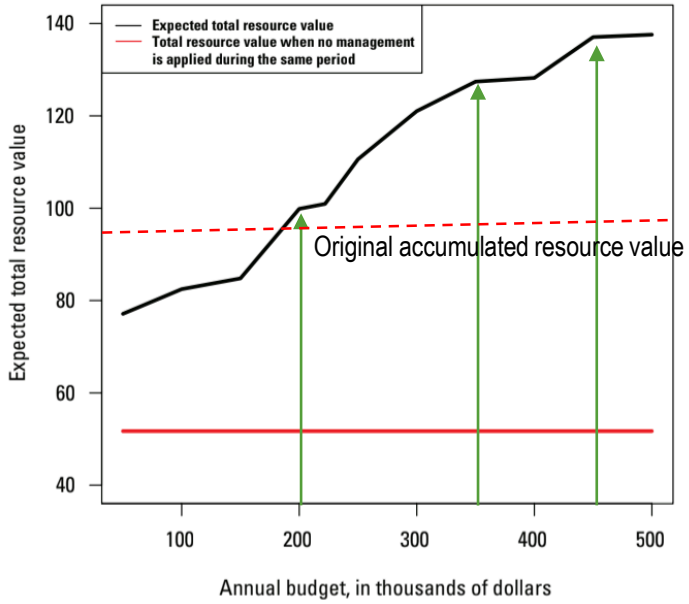
Optimal Preservation (OptiPres) Model

Xiao et al. (2019), Seekamp et al. (2019b)

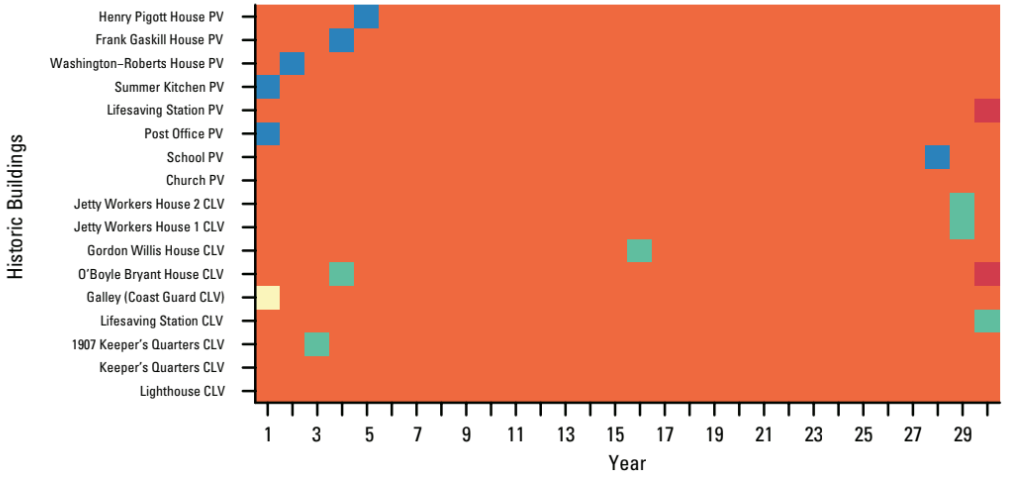
Model Dynamics



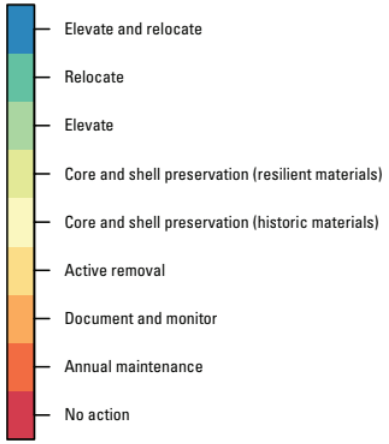
Budget Efficiencies



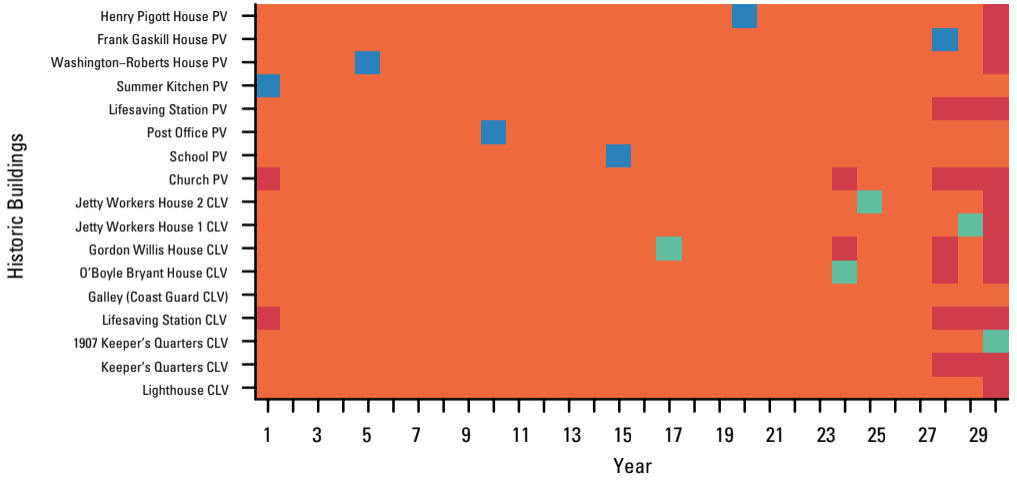
Scenario 3: $500K annually



Patterns of Actions



Scenario 5: $222K + $225K every 5 yrs

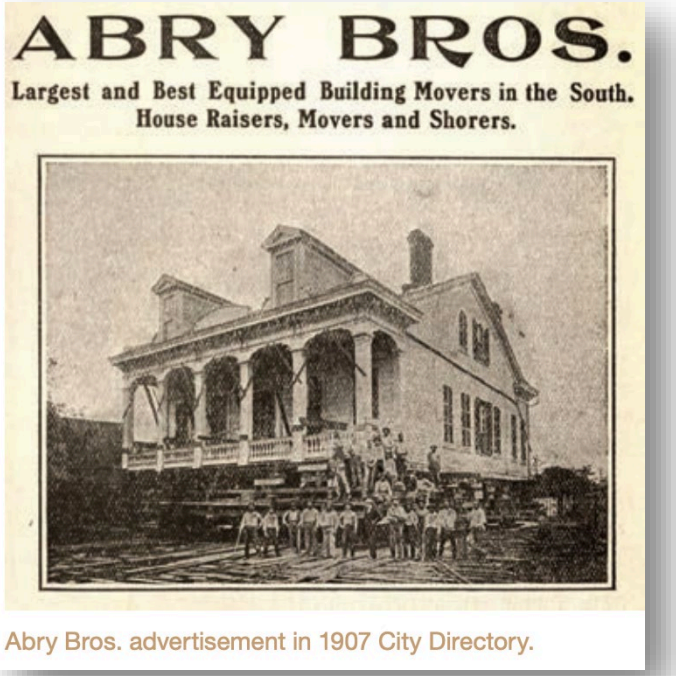


Emerging Considerations

How to accommodate for “loss”?

How to accommodate for "loss"?

Continuity & Change



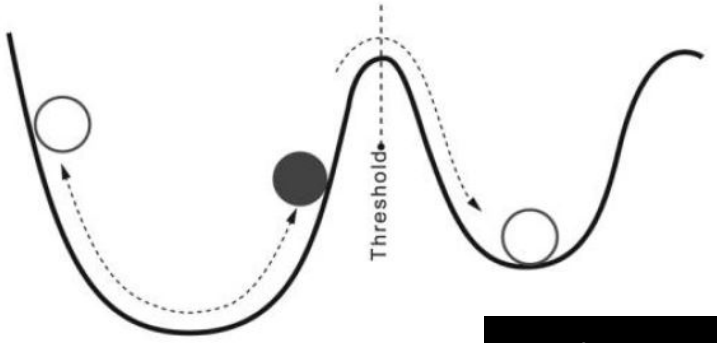
Abry Bros. advertisement in 1907 City Directory.

FEMA. The history of building elevation in New Orleans. cno_history_bldg_elev_042313.pdf

National Park Service https://www.nps.gov/caha/learn/historyculture/movingthelighthouse.htm

Adaptation as Persistence

Engineering resilience concept



Ecological resilience concept

Adaptation as Accommodating Loss

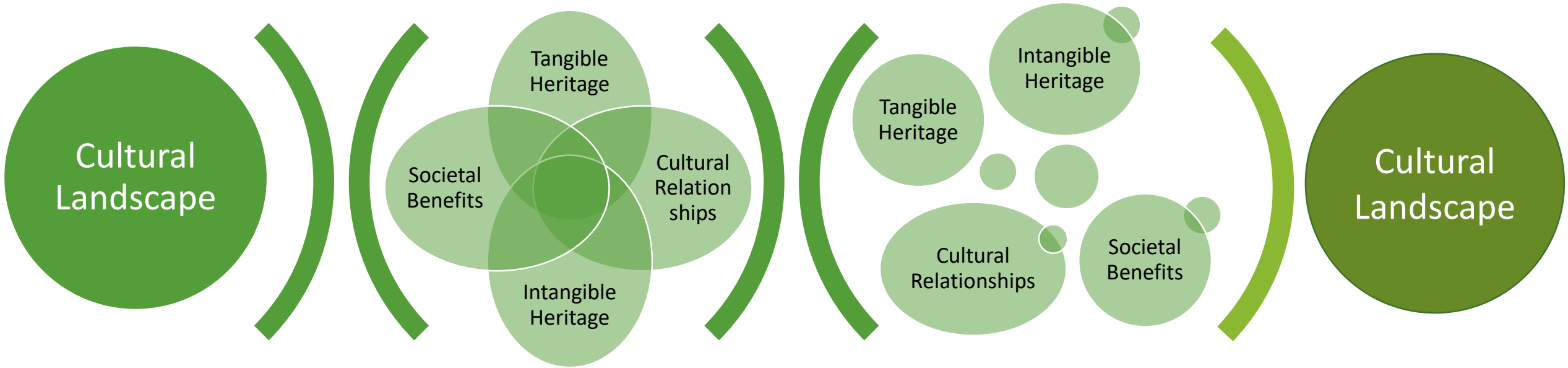
How to accommodate for “loss”?

Planned Persistence

Adaptation as Revitalization

Adaptation as Transformation

Autonomous or Anticipatory Transition



Intact System

Disturbed System

New System

Future System

Continuity & Change

Seekamp & Jo (In Review)

Review

- Management context
  - Multiple stakeholder perspectives
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  - Significant & most vulnerable properties
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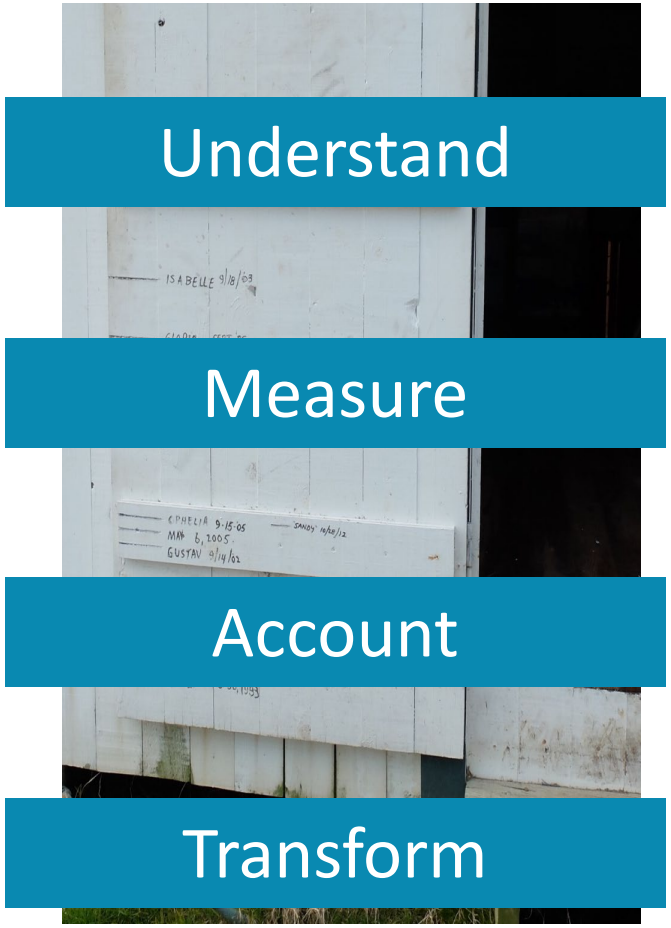
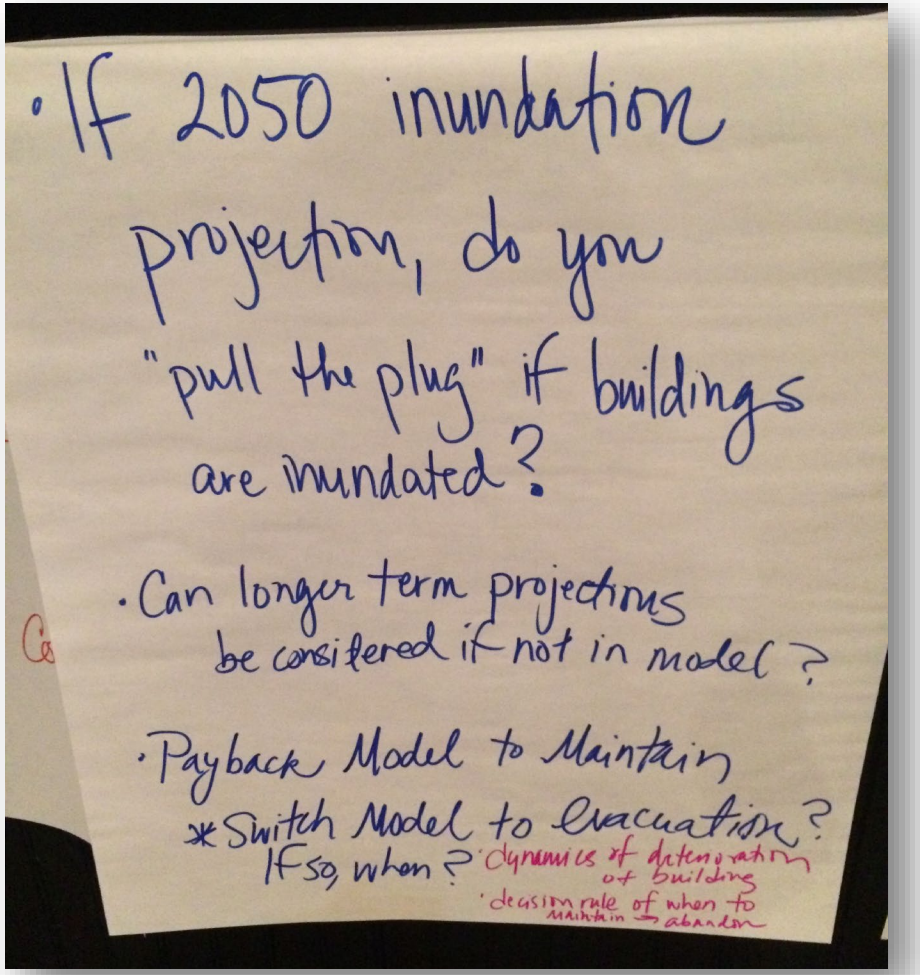


Acknowledgements



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- NC State University:
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  - Xiao Xiao (now, Asst Prof, Arizona State University & Hainan University)
  - Courtney Hotchkiss (doctoral student)
- USGS
  - Mitch Eaton (USGS, DOI Southeast Climate Adaptation Science Center)
  - Max Post van der Burg (USGS, Northern Prairie Wildlife Research Center)
- NPS
  - Janet Cakir, Amanda Babson, David Goldstein, Cat Hawkins-Hoffman, Rebecca Beavers, Marcy Rockman (former)
- ICCROM
  - Eugune Jo

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- US DOI, USGS, SE Climate Adaptation Science Center

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