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I'll be dammed! Public preferences regarding dam removal in New Hampshire

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I'll be dammed! Public preferences regarding dam removal in New Hampshire

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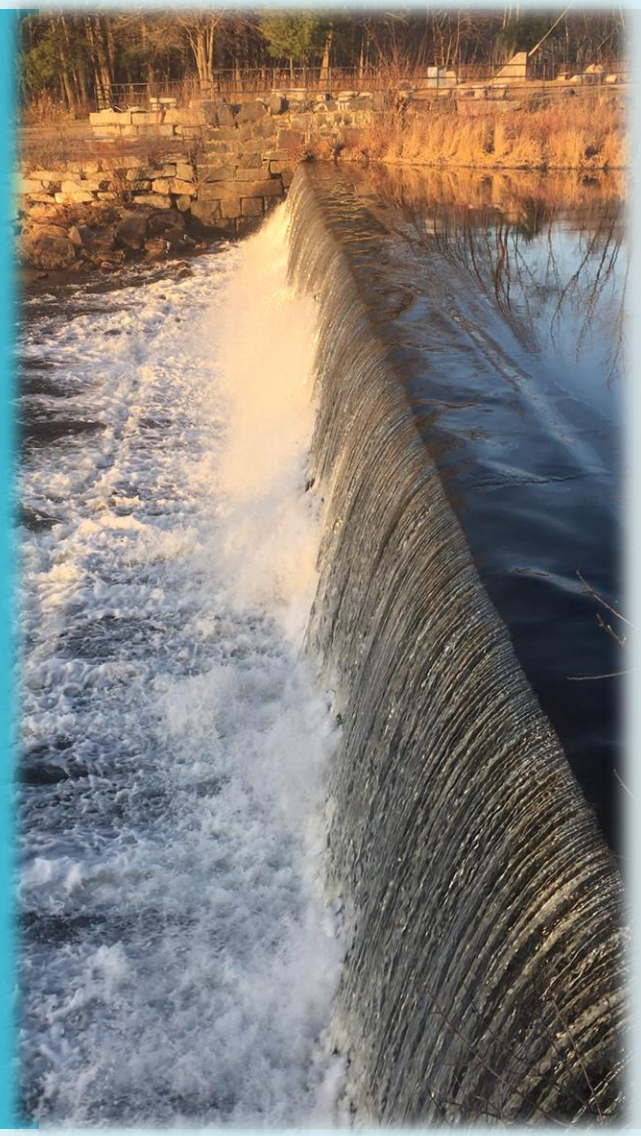
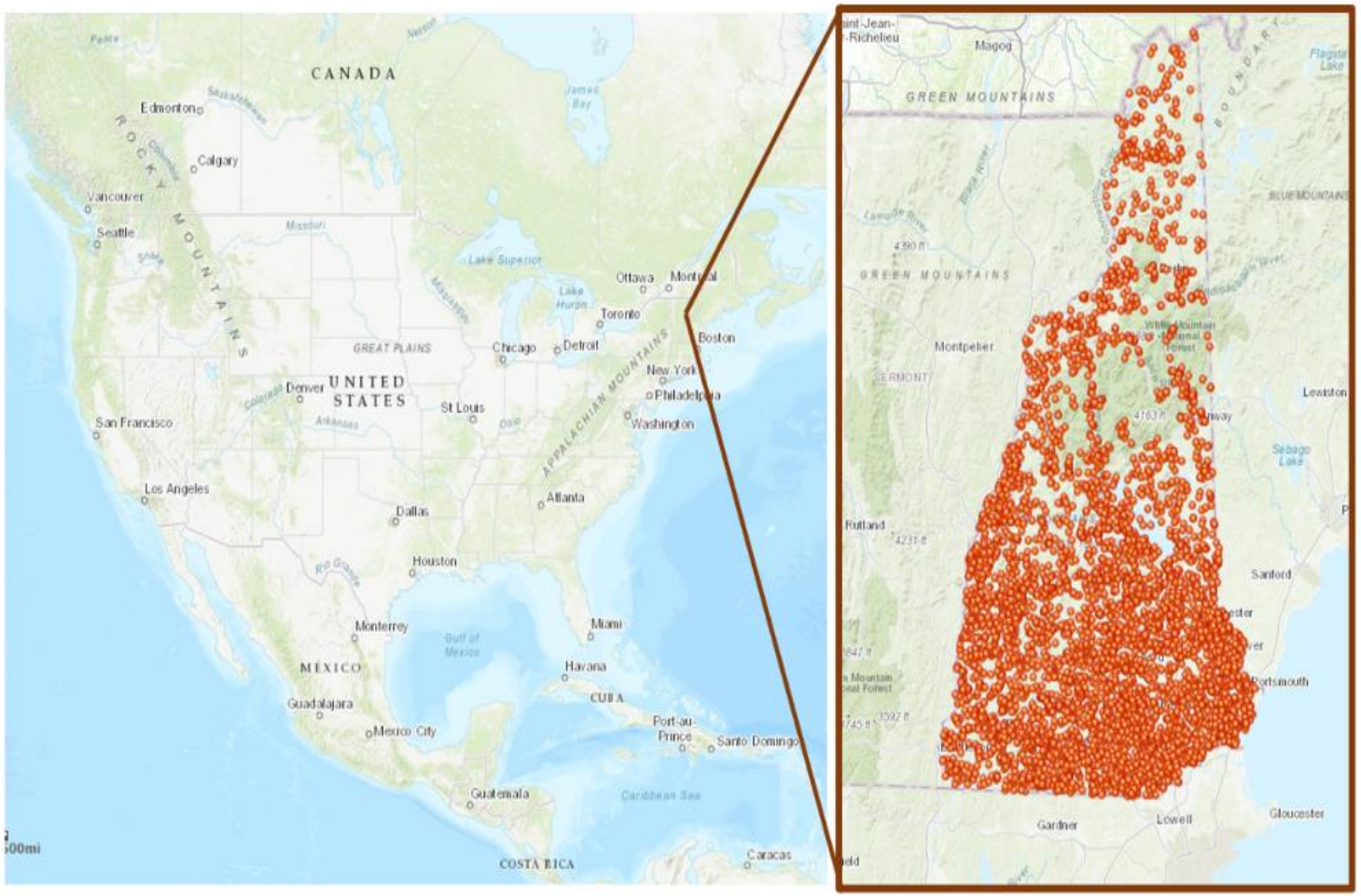
Virtual, March 31, 2021



Video credit: N.Leuchanka Diessner

Overview of Dams in New Hampshire

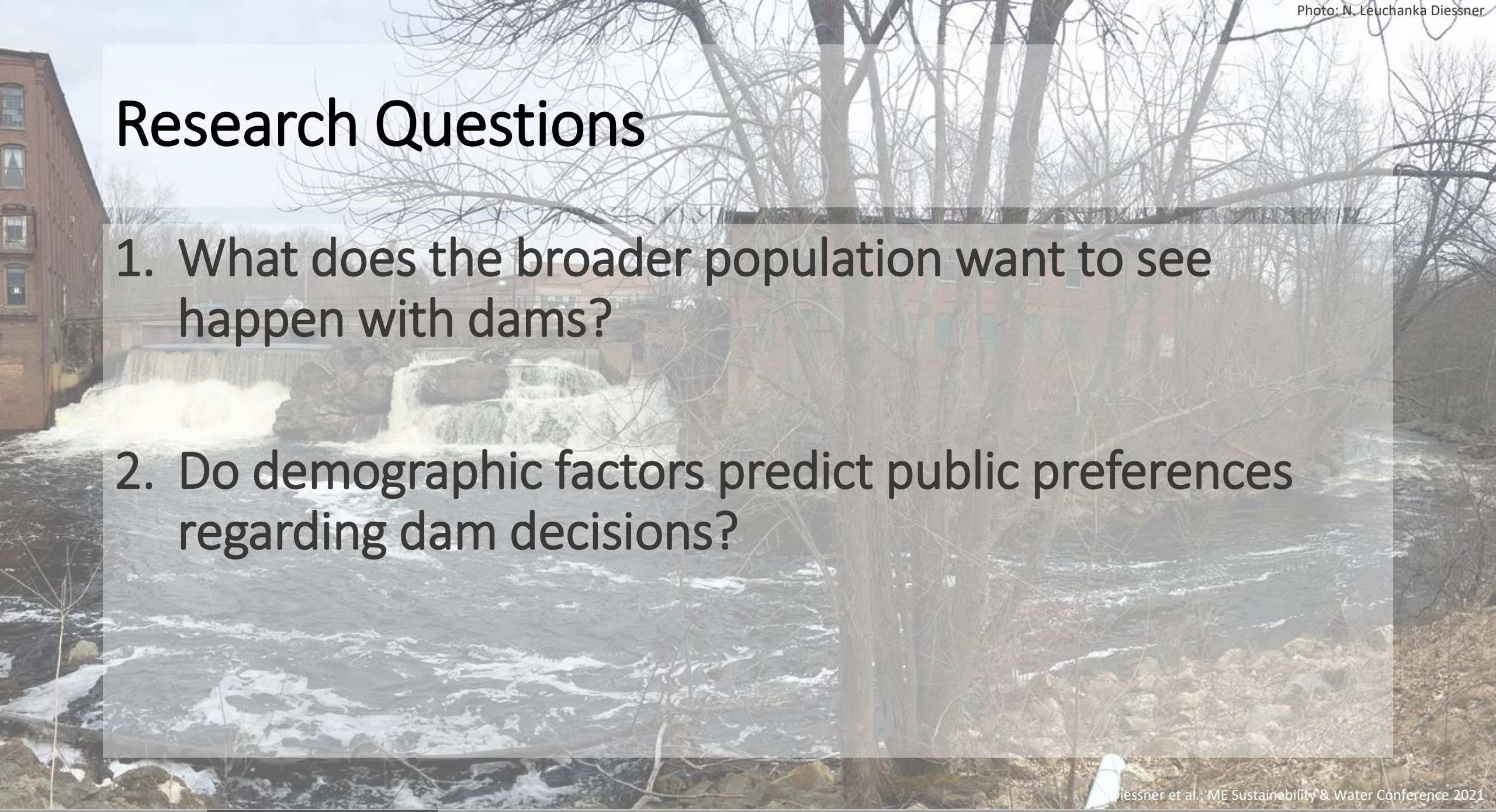


Dams in New Hampshire (shown in red dots). Source: NH dam inventory layer from NH GRANIT.

- 14,000+ in New England
- 2,000+ “active” dams in NH
- Many nearing end of their engineering lifespan
- Ownership
  - Private (77%)
  - Municipal (13%)
  - State (9%)
  - Federal & utility (<1%)
- Public opinion often drives decisions
- Decisions contested by stakeholders with diverse interests
- Significant public funding for river restoration

Gap in Knowledge: Human Dimensions of Dam Decisions

- Quantitative studies focus on single municipality
  - Place-based, but not necessarily representative of NH public opinion
- State or regional scale studies focus on small number of cases
  - Qualitative: rich context about specific stakeholder groups, but not necessarily representative of NH public opinion
- Need for statewide public opinion data



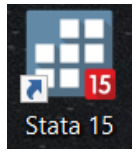
Research Questions

1. What does the broader population want to see happen with dams?

2. Do demographic factors predict public preferences regarding dam decisions?

Methods

- Included 4 dam removal questions in Feb/April/Aug 2018 Granite State Poll (GSP) - UNH Survey Center
  - Also included mix of opinion questions and background characteristics
- Random sample of NH adults (18+)
- 1,582 telephone surveys
- Sample weighted to represent NH population
- Analysis (multinomial logit modeling) in STATA software



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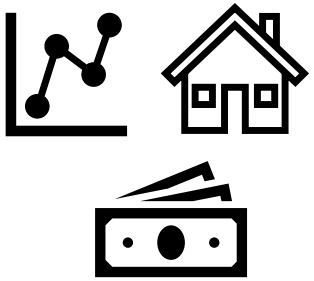
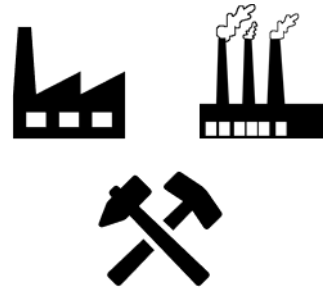
Methods: Survey Questions to Explore Tradeoffs (1/2)



In your opinion, is it more important to use dams on New Hampshire rivers and streams to preserve waterfront property values, or is it more important to remove dams and allow free-flowing rivers that benefit fish and wildlife? [rotated response order]

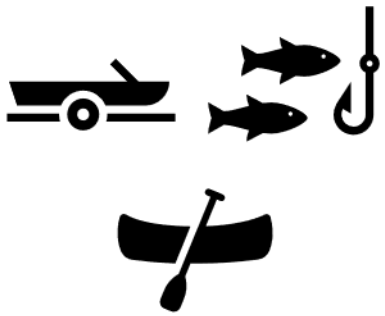
- Use dams to preserve waterfront property values
- Remove the dams and allow free-flowing rivers
- DK/NA

In your opinion, is it more important to keep dams in place on New Hampshire rivers and streams in order to preserve New Hampshire's industrial history, or is it more important to remove the dams and allow free-flowing rivers that benefit fish and wildlife? [rotated response order]



- Use dams to preserve New Hampshire's industrial history
- Remove the dams and allow free-flowing rivers
- DK/NA

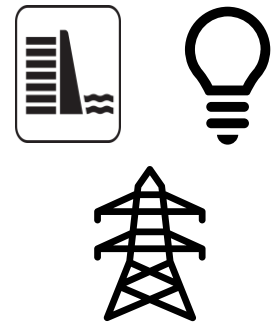
Methods: Survey Questions to Explore Tradeoffs (2/2)



In your opinion, is it more important to keep dams in place on New Hampshire rivers and streams in order to preserve recreational opportunities in lakes and ponds, or is it more important to remove the dams and allow free-flowing rivers that benefit fish and wildlife?
[rotated response order]

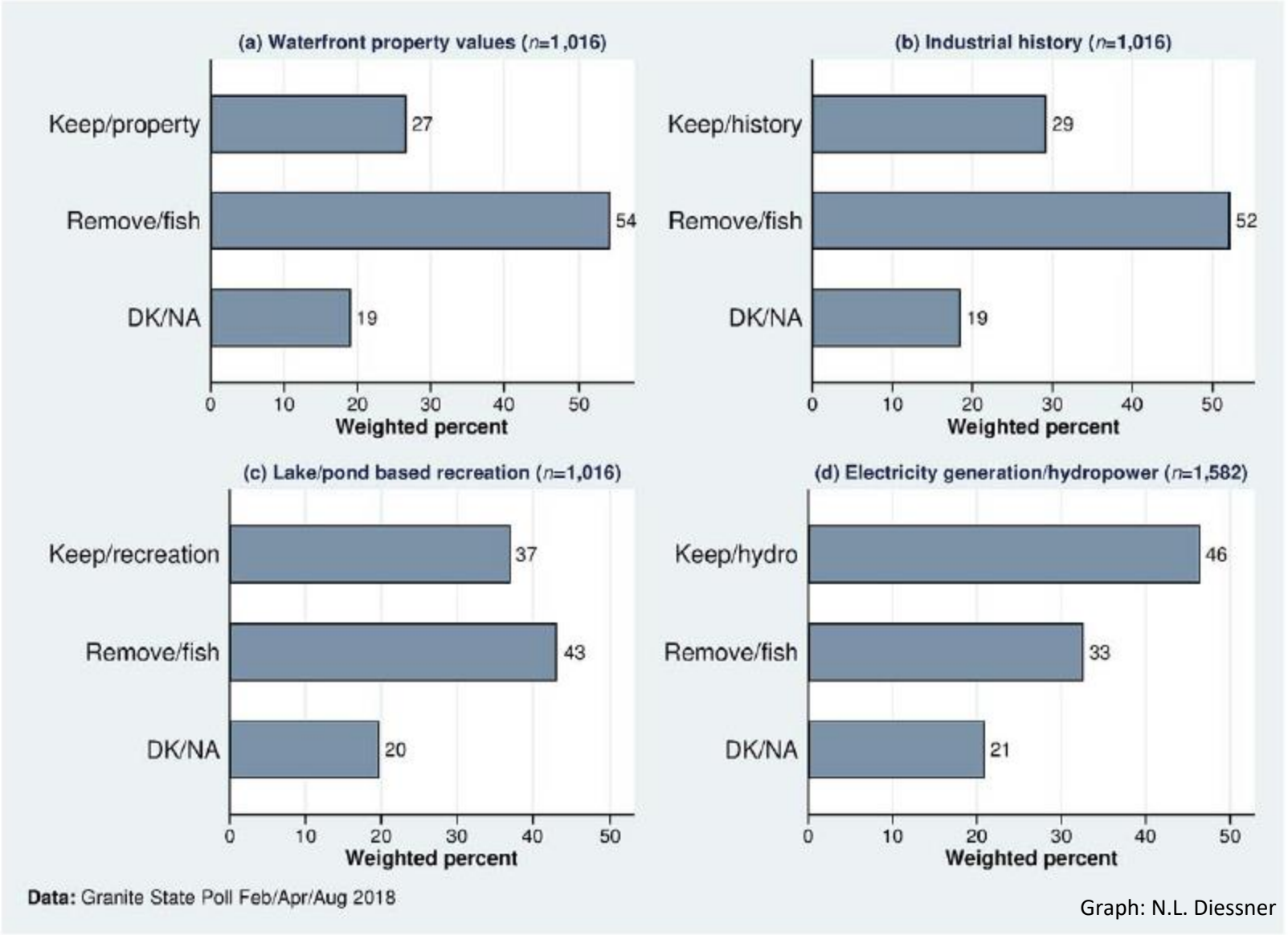
- Use dams to preserve recreational opportunities
- Remove the dams and allow free-flowing rivers
- DK/NA

In your opinion, is it more important to use dams on New Hampshire rivers and streams to generate electricity, or is it more important to remove dams and allow free-flowing rivers that benefit fish and wildlife?
[rotated response order]



- Use dams to generate electricity
- Remove the dams and allow free-flowing rivers
- DK/NA

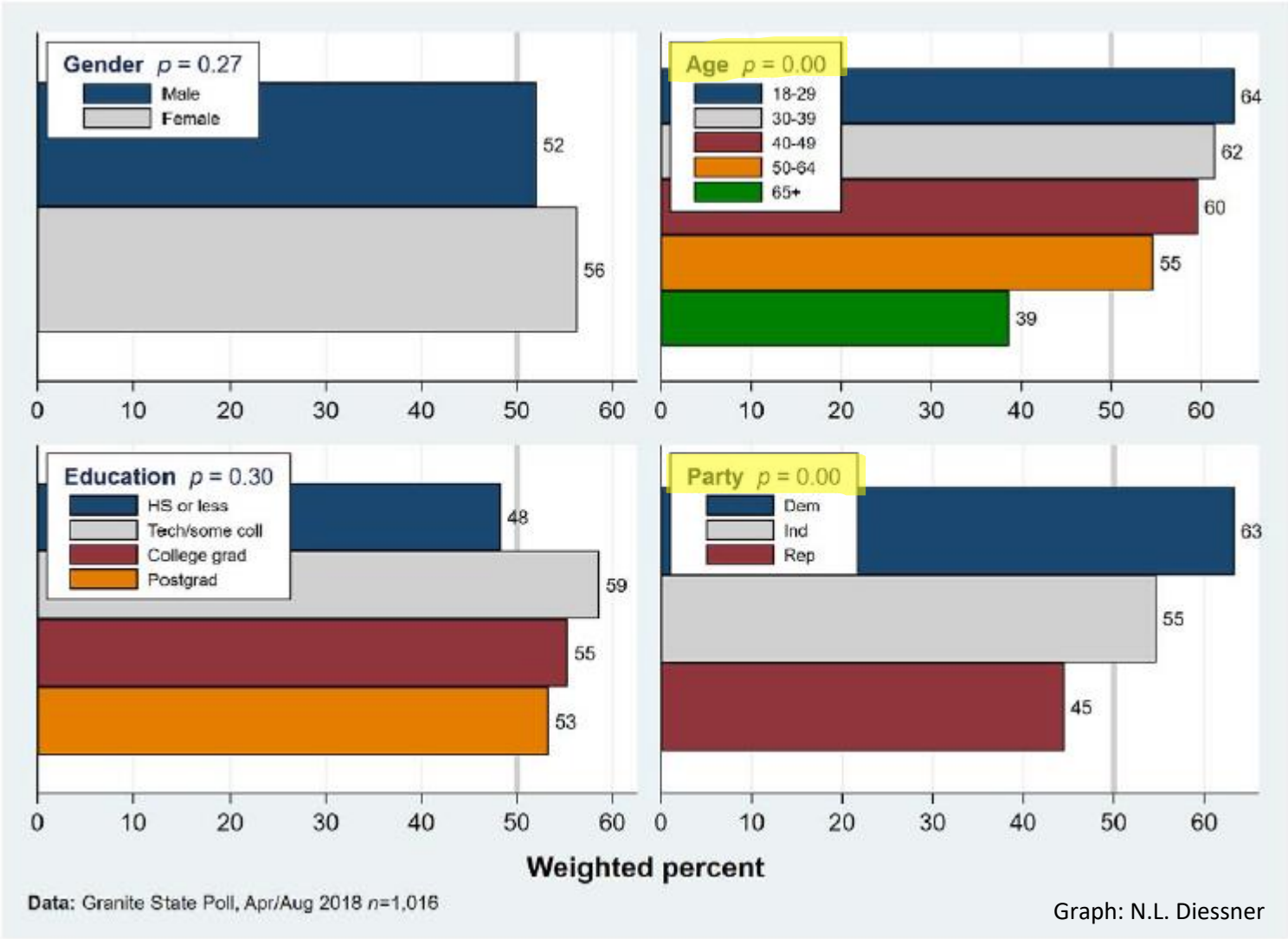
Do NH residents support dam removal?



Graph: N.L. Diessner

Do NH residents support dam removal?

Bivariate modeling



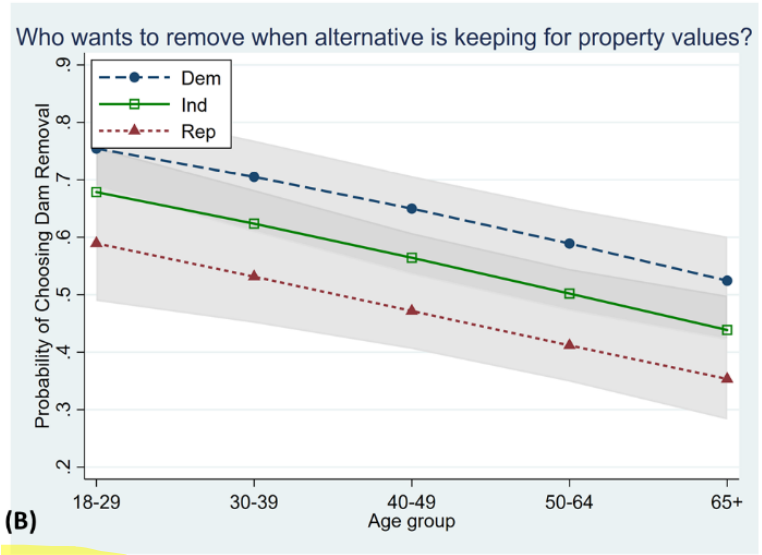
Tradeoff 1: Who supports dam removal over keeping dams for waterfront property values?

- Democrats more likely to choose removal
- Gender has no systematic effect on probability of choosing removal over keeping a dam

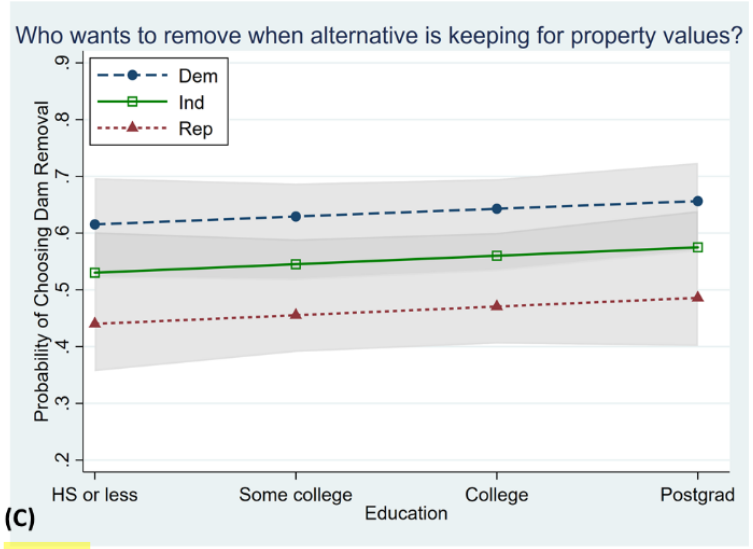
- Younger residents more likely to choose removal

- Level of education has no systematic effect on probability of choosing removal over keeping a dam

*party



*age, party



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Graphs: N.L. Diessner

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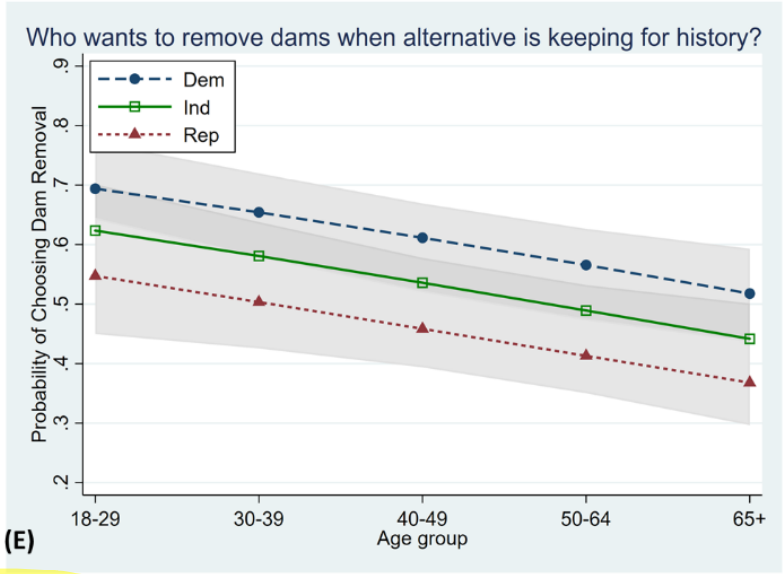
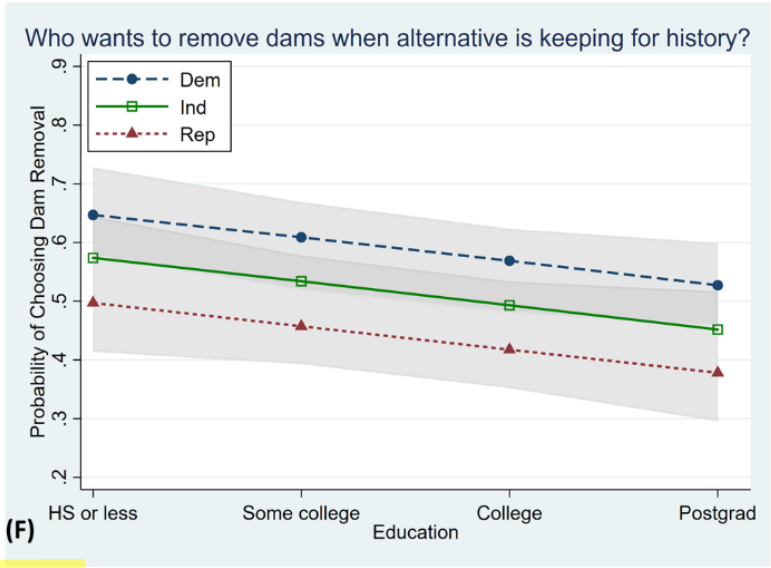


*age, party



*party

Graphs: N.L. Diessner

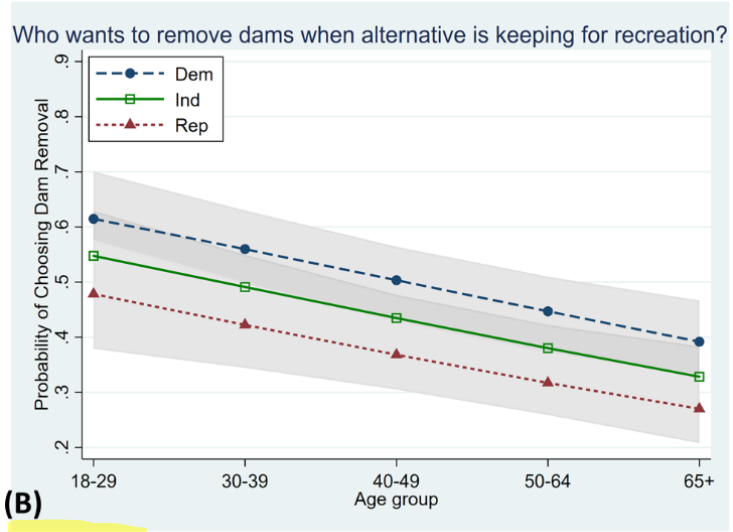
Tradeoff 2: Who supports dam removal over keeping dams for preservation of industrial history?

Diessner et al.; ME Sustainability & Water Conference 2021

- Democrats more likely to choose removal
- Females more likely to choose removal, regardless of political party affiliation

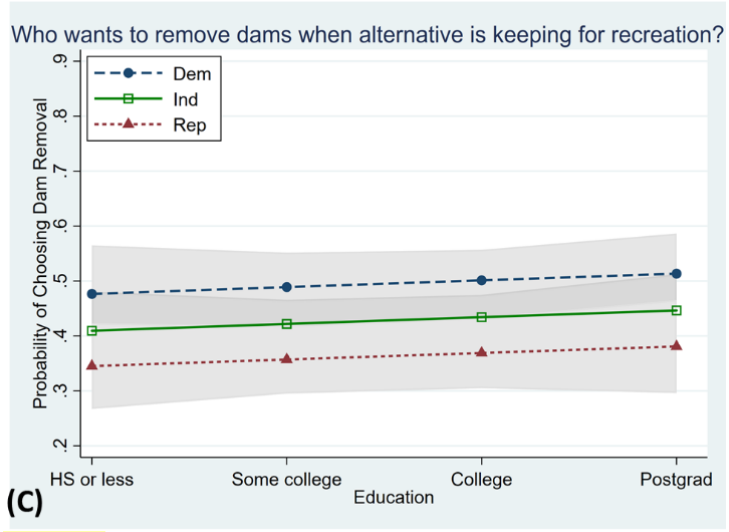
*gender, party

- Younger residents more likely to choose removal



*age, party

- Level of education has no systematic effect on probability of choosing removal over keeping a dam



*party

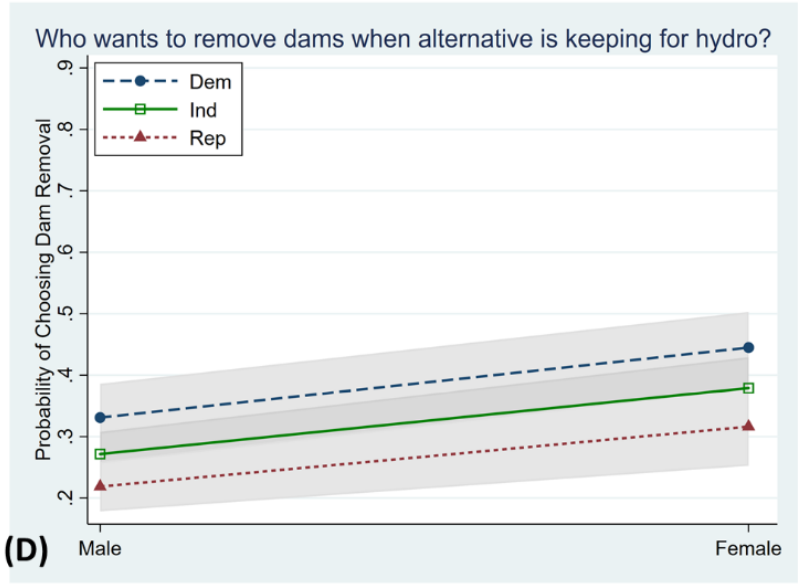
Graphs: N.L. Diessner

Tradeoff 3: Who supports dam removal over keeping dams for lake- and pond-based recreation?

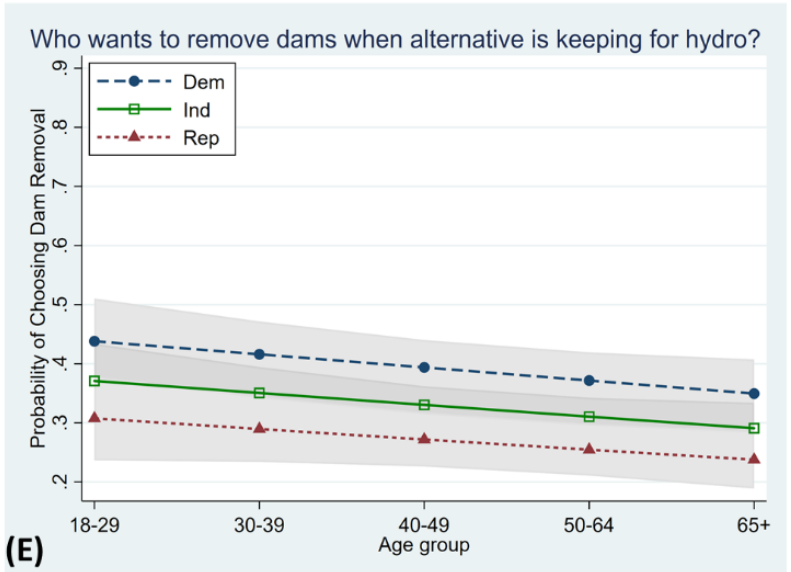
- Democrats more likely to choose removal
- Females more likely to choose removal, regardless of political party affiliation

- Age has no systematic effect on probability of choosing removal over keeping a dam

- Level of education has no systematic effect on probability of choosing removal over keeping a dam



*gender, party



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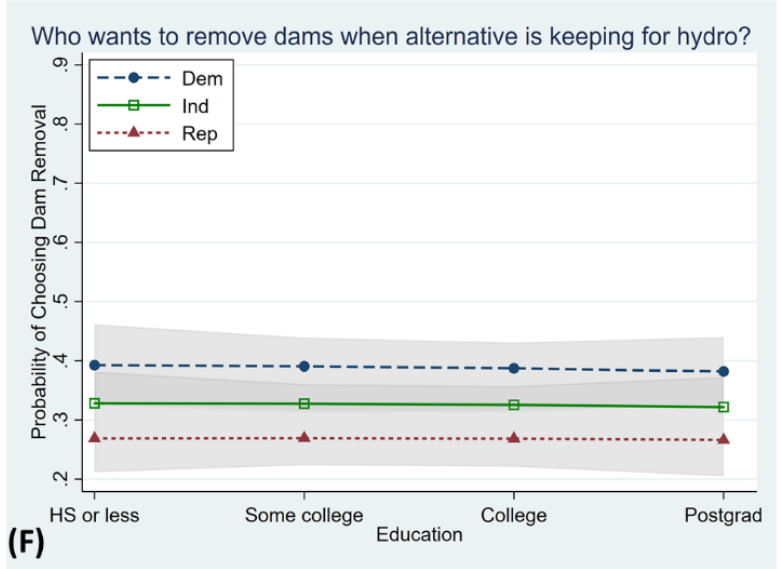

*party

Graphs: N.L. Diessner

Tradeoff 4: Who supports dam removal over keeping dams for electricity generation?

Key Findings & Discussion (1/3)

1. Insights into dam decisions

1. NH residents favor keeping a dam for hydropower, but otherwise support dam removal above
   - preservation of industrial history,
   - maintenance of waterfront property values, or
   - maintenance of lake- and pond-based recreation

2. Study provides broader insights into public opinion, as compared to the narrower group of stakeholders who participate in public meetings & hearings

3. Lower general awareness about dam-related issues

Key Findings & Discussion (2/3)

2. Demographic characteristics shape public preferences for dam decisions

1. Age and gender are strong predictors of people's preferences for some tradeoffs
   - Younger and middle-aged respondents, and female respondents more likely to prefer removal
2. Education has no significant effect on people's preferences, regardless of tradeoff
3. Political ideology and party affiliation drive people's preferences on dam removal

Key Findings & Discussion (3/3)

3. Importance of representation and inclusivity in public participation surrounding dam decisions

1. Who participates in public meetings & hearings? Whose voice is marginalized?
2. Consider strategies to supplement input gathered at public meetings to ensure more equitable representation
3. Dam decision processes that are more inclusive could result in more democratic outcomes and more equitable use of public funds

Thank you!

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Photos: N.Leuchanka Diessner

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation

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- Diessner, NL, Ashcraft, CM, Gardner, KH, Hamilton, LC. 2020. I'll be dammed! Public preferences regarding dam removal in New Hampshire. *Elem Sci Anth*, 8: xx. DOI: https://doi.org/10.1525/elementa.003

- Diessner, Natallia Leuchanka; Ashcraft, Catherine M.; Gardner, Kevin H.; and Hamilton, Lawrence C. 2019. What to Do With Dams: An Assessment of Public Opinion to Inform the Debate in New Hampshire. *The Carsey School of Public Policy at the Scholars' Repository. 374*. Available at https://scholars.unh.edu/carsey/374

Follow-up study on NH residents' knowledge about dams:

- Chapman, S, Ashcraft, CM, Hamilton, LC, Gardner, K. 2020. What do we know about what to do with dams? How knowledge shapes public opinion about their removal in New Hampshire. Durham, NH. Available at https://scholars.unh.edu/carsey/407/