

University of New Hampshire

University of New Hampshire Scholars' Repository

New Hampshire EPSCoR

Research Institutes, Centers and Programs

4-11-2018

I'll Be Dammed! Public Preferences and the Future of Dams in New Hampshire

Natallia Leuchanka Diessner

University of New Hampshire, nhe4@wildcats.unh.edu

Lawrence C. Hamilton

University of New Hampshire, lawrence.hamilton@unh.edu

Kevin H. Gardner

University of New Hampshire - Main Campus, kevin.gardner@unh.edu

Catherine Ashcraft

University of New Hampshire, catherine.ashcraft@unh.edu

Follow this and additional works at: https://scholars.unh.edu/nh_epscor

Recommended Citation

Leuchanka, N., Hamilton, L.C., Gardner, K., Ashcraft, C.M. 2018. I'll Be Dammed! Public Preferences and the Future of Dams in New Hampshire. AAG Annual Meeting. April 10-14, New Orleans, LA.

This Presentation is brought to you for free and open access by the Research Institutes, Centers and Programs at University of New Hampshire Scholars' Repository. It has been accepted for inclusion in New Hampshire EPSCoR by an authorized administrator of University of New Hampshire Scholars' Repository. For more information, please contact nicole.hentz@unh.edu.



I'll Be Dammed! Public Preferences and the Future of Dams in New Hampshire

NATALLIA LEUCHANKA, PHD STUDENT

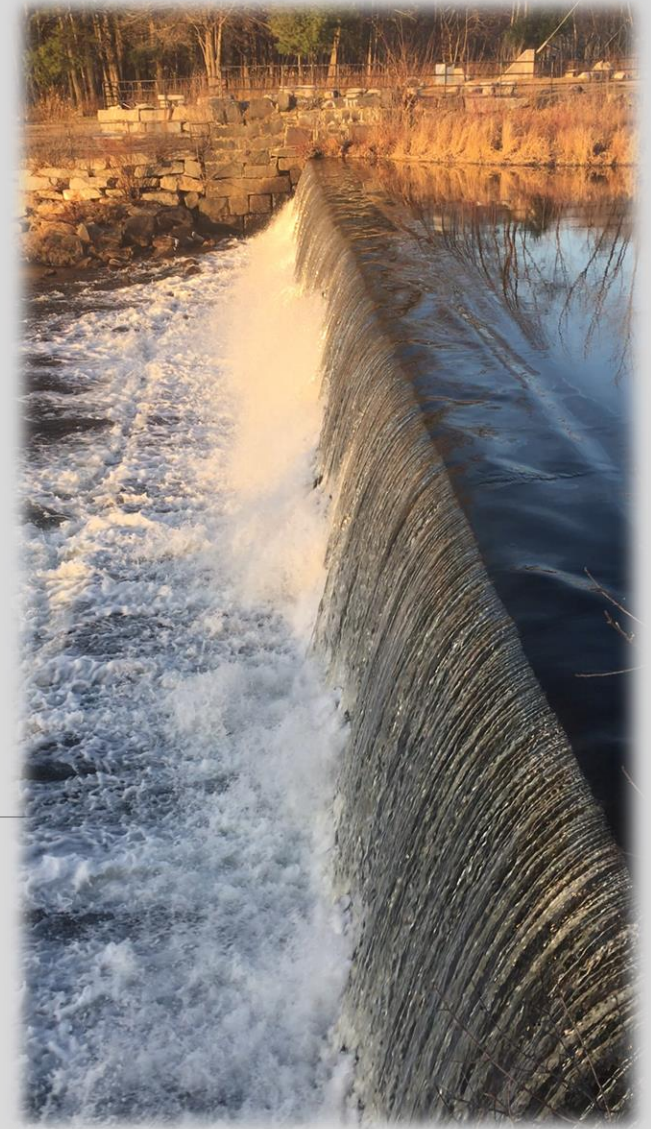
CO-AUTHORS: DR. LAWRENCE C. HAMILTON, DR. KEVIN GARDNER, DR. CATHERINE M. ASHCRAFT

UNIVERSITY OF NEW HAMPSHIRE

AMERICAN ASSOCIATION OF GEOGRAPHERS (AAG) ANNUAL MEETING

NEW ORLEANS

APRIL 11, 2018

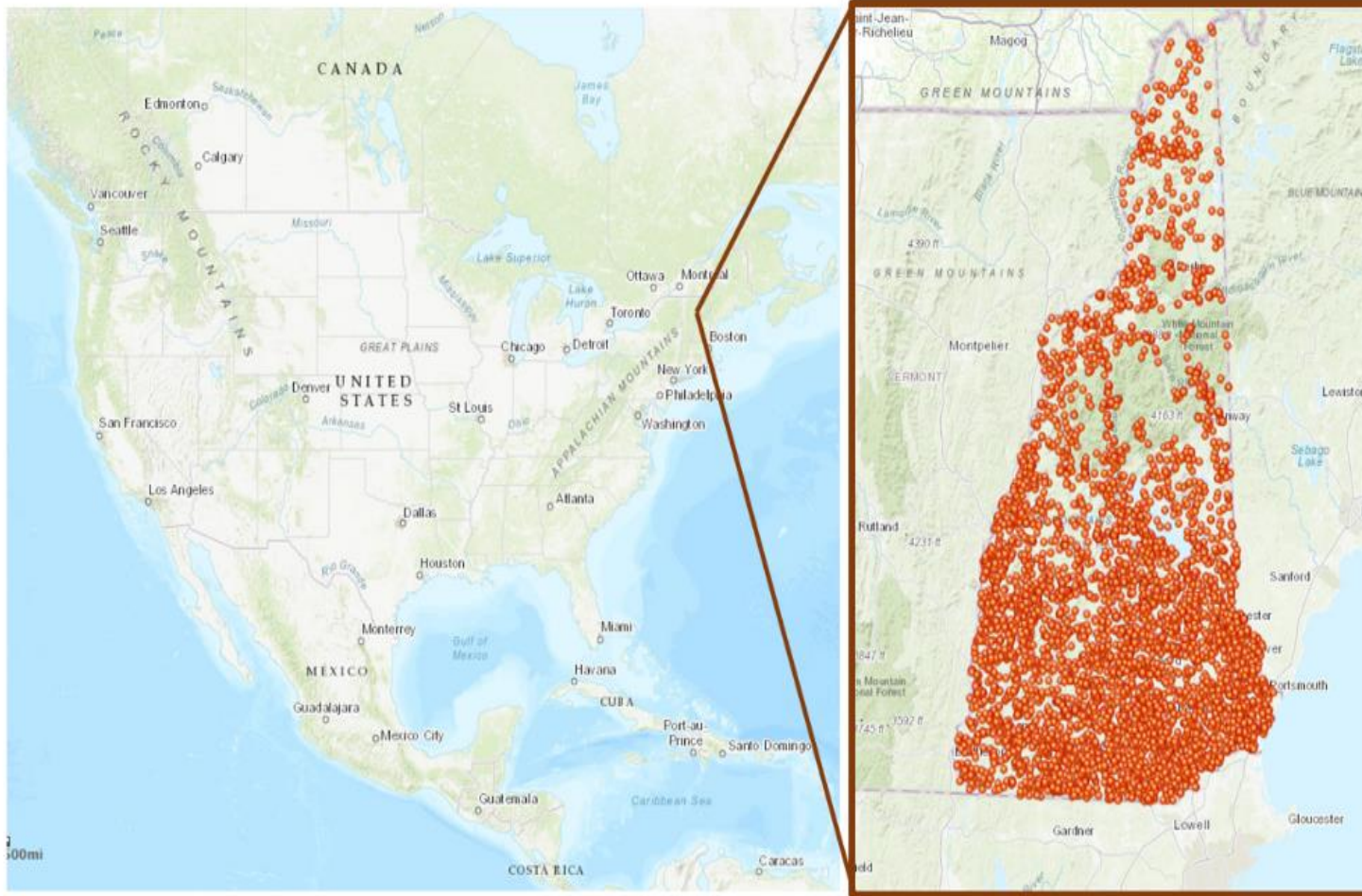


Presentation Roadmap

- Overview of dams in NH
- Study motivation
- Methods
- Results
- Ongoing work
- Questions



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
- Contentious
- Significant public funding for river restoration

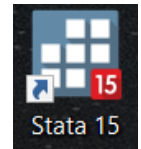
Wanted: Human Dimensions of Dam Decisions

- 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



Methods

- Included 2 questions in Feb. 2018 Granite State Poll (GSP) - UNH Survey Center
- Random sample of NH adults (18+)
- 566 telephone surveys
- Sample weighted to represent NH population
- Analysis in STATA software



Methods: Survey Questions to Explore Tradeoffs



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]

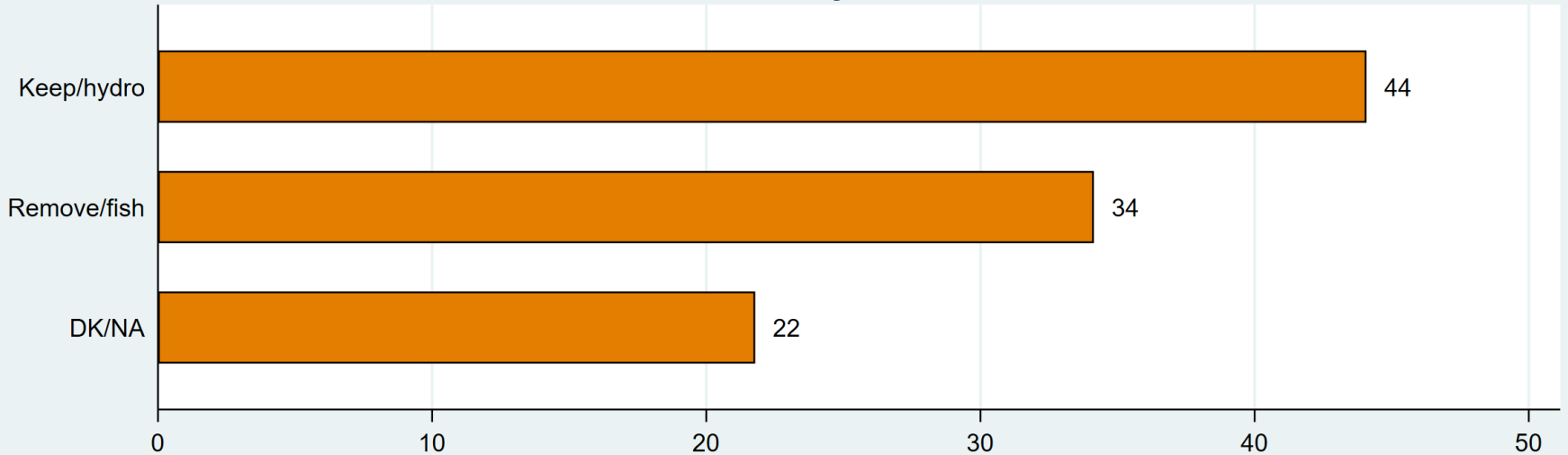
- Use dams to generate electricity
- Remove the dams and allow free-flowing rivers
- DK/NA



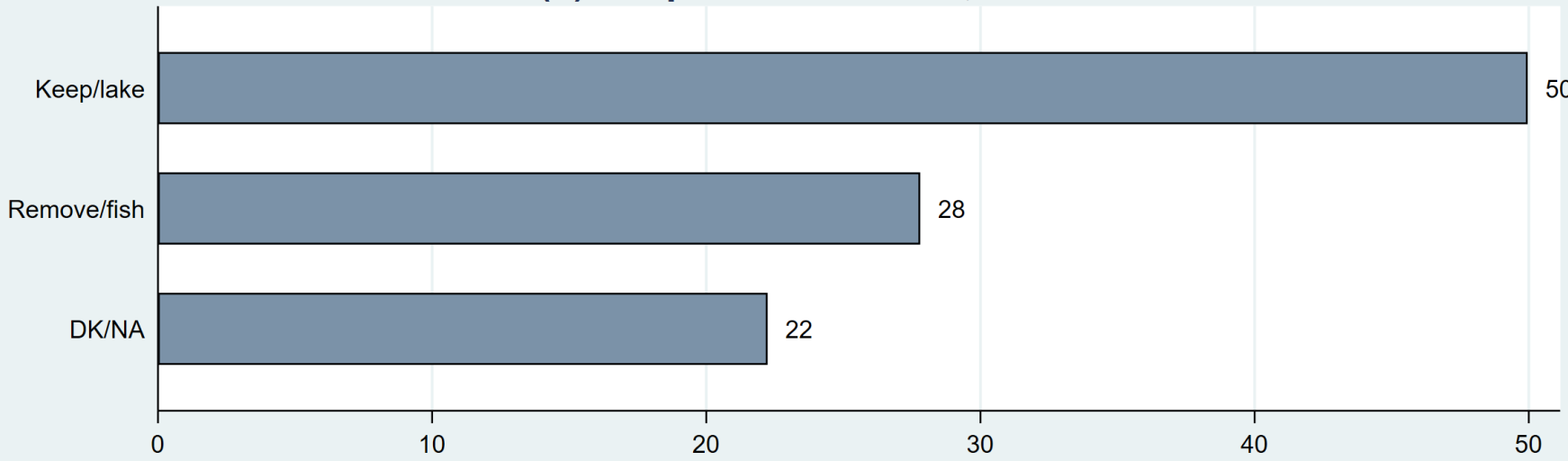
In your opinion, is it more important to keep dams in place on New Hampshire rivers and streams in order to **preserve the lakes and ponds** behind them, or is it more important to remove the dams and allow free-flowing rivers that benefit fish and wildlife? [rotated response order]

- Use dams to preserve the lakes and ponds behind dams
- Remove the dams and allow free-flowing rivers
- DK/NA

(a) Keep dams for hydropower, or remove?



(b) Keep dams for lakes, or remove?

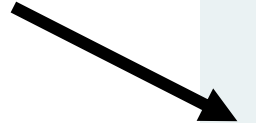
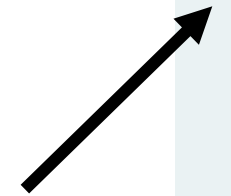


Weighted percent

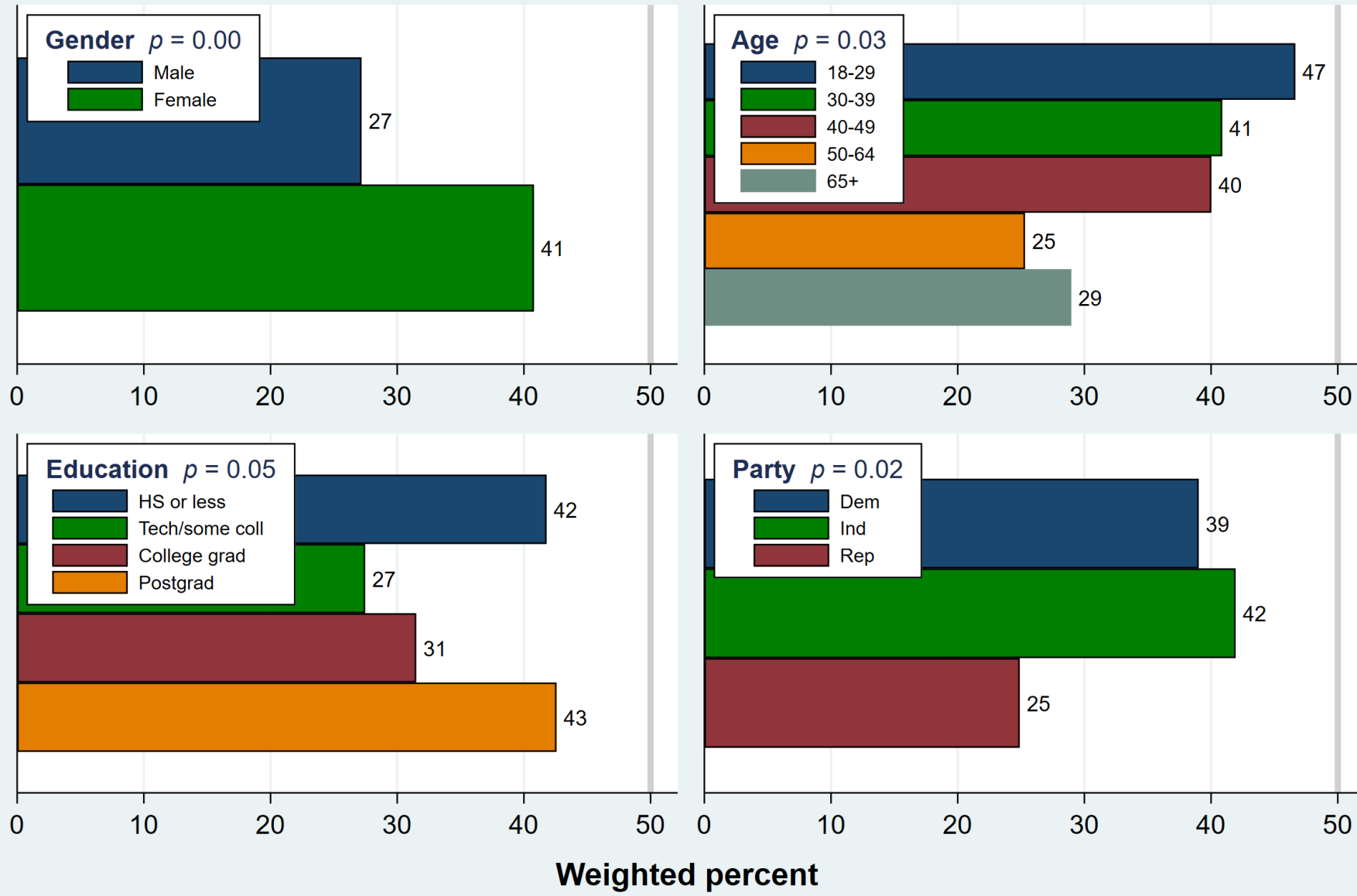
data: Granite State Poll, winter 2018 $n=566$

graph: N.Leuchanka, UNH

WHO supports dam removal?



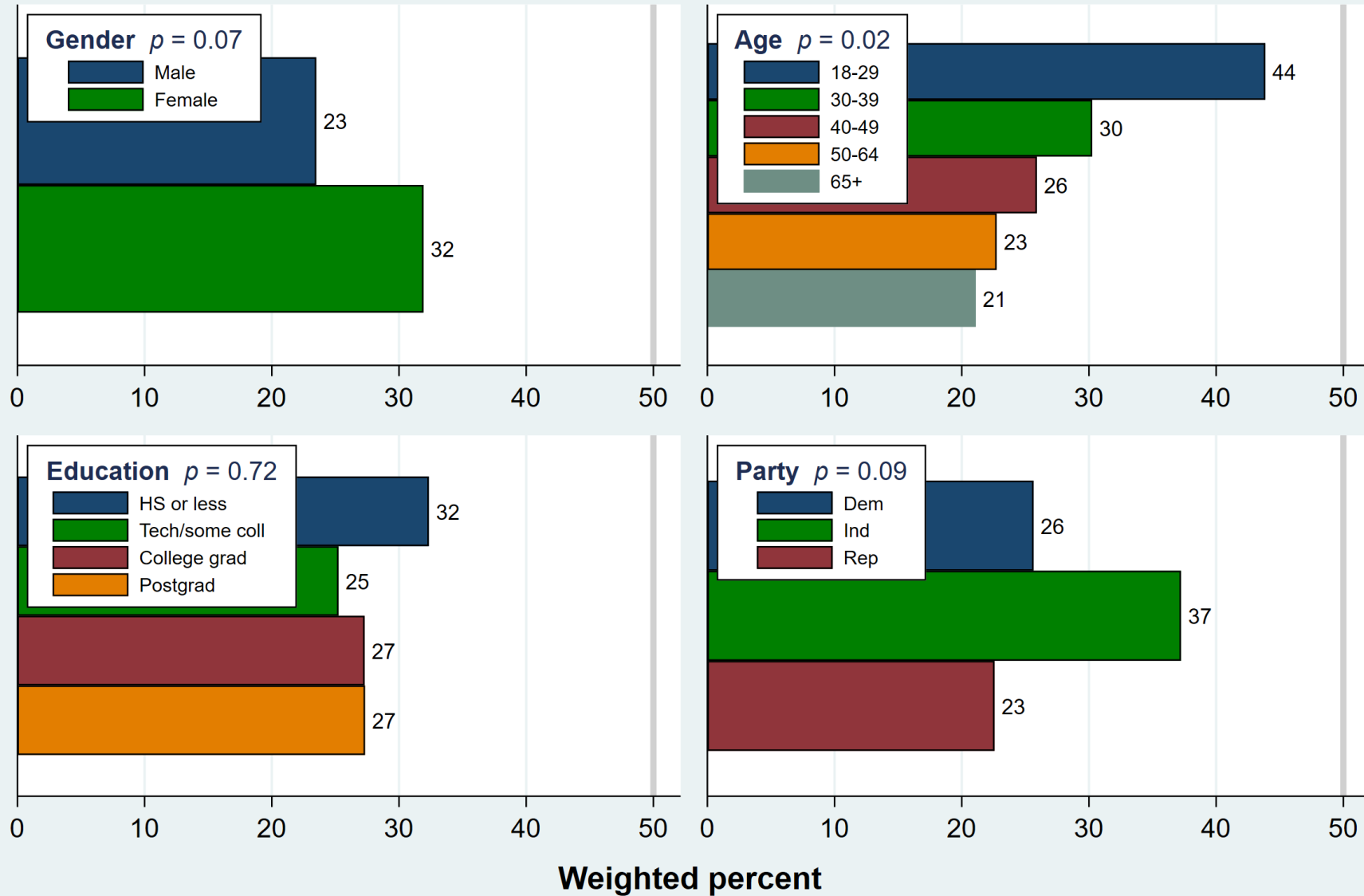
Who prefers dam removal when the alternative is keeping for hydropower?



data: Granite State Poll, winter 2018 $n=566$

graph N.Leuchanka, UNH

Who prefers dam removal when the alternative is keeping for lakes/ponds?



data: Granite State Poll, winter 2018 $n=566$

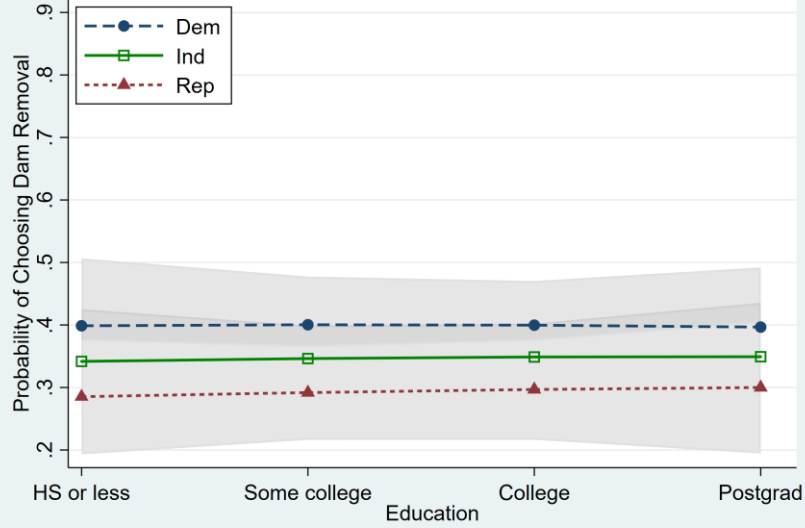
graph N.Leuchanka, UNH

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

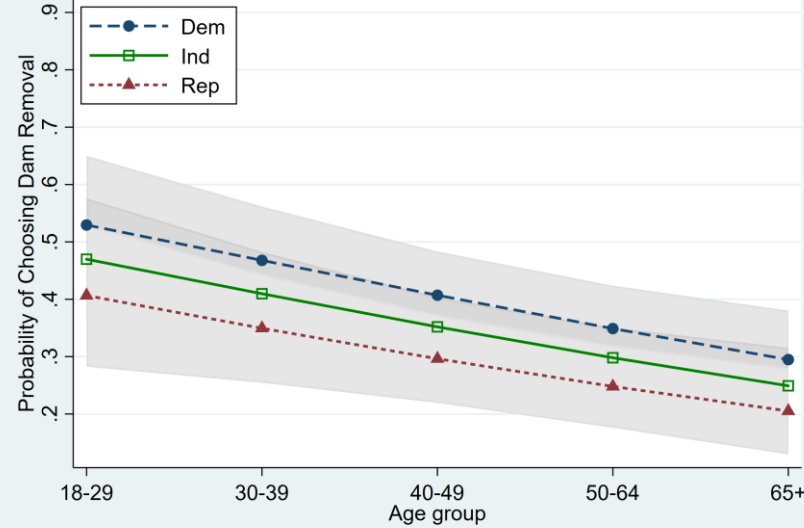
- Younger residents more likely to choose removal

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

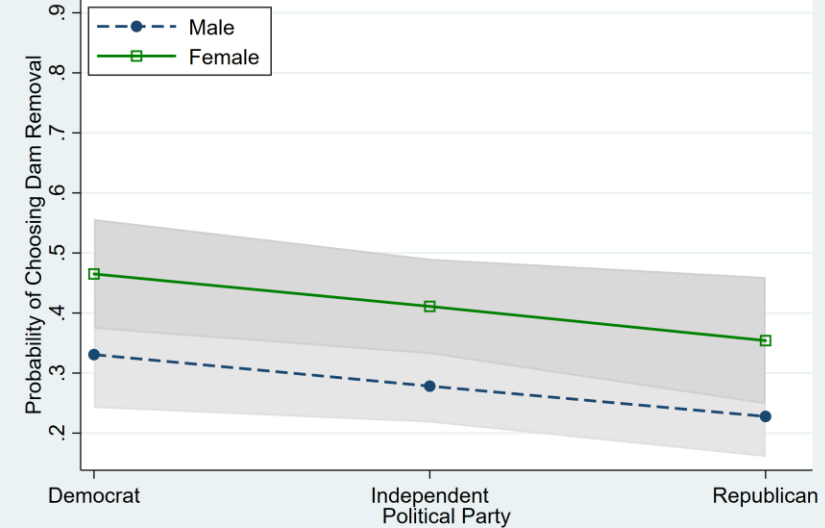
Who wants to remove dams when alternative is keeping for hydro?



Who wants to remove dams when alternative is keeping for hydro?



Who wants to remove dams when alternative is keeping for hydro?



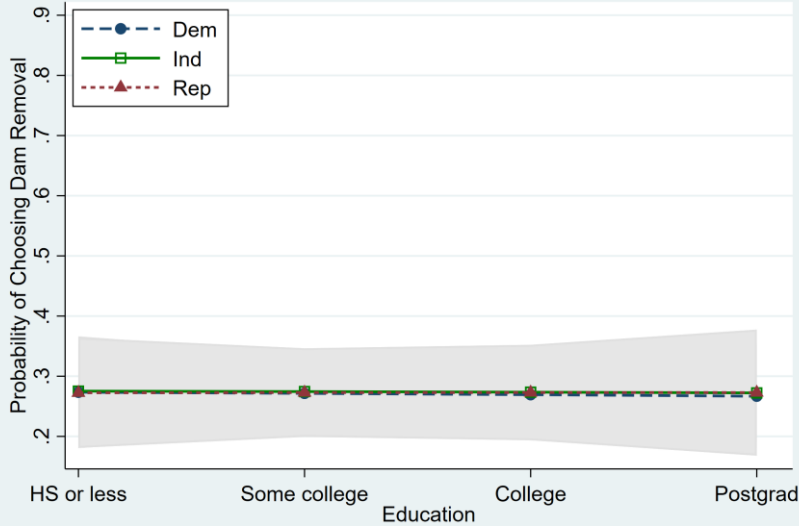
Who supports dam removal over keeping dams for electricity generation?

- PARTY HAS NO SIGNIFICANT EFFECT
- Level of education has no systematic effect on probability of choosing removal over

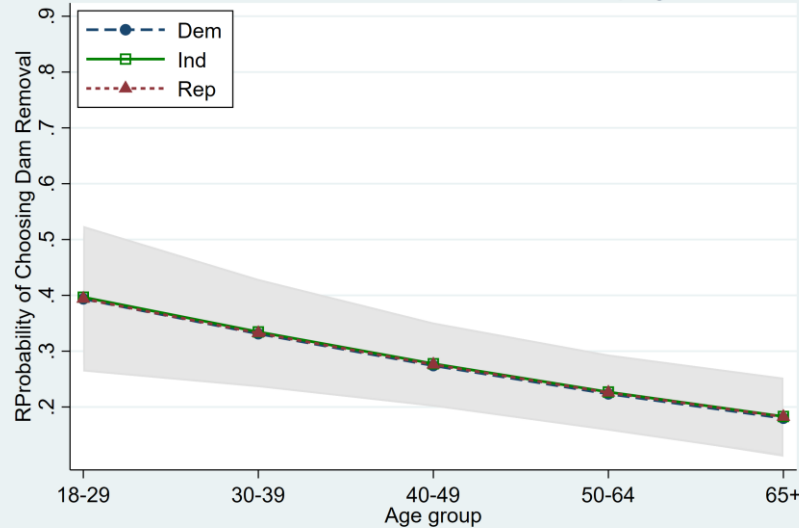
- Younger residents more likely to choose removal

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

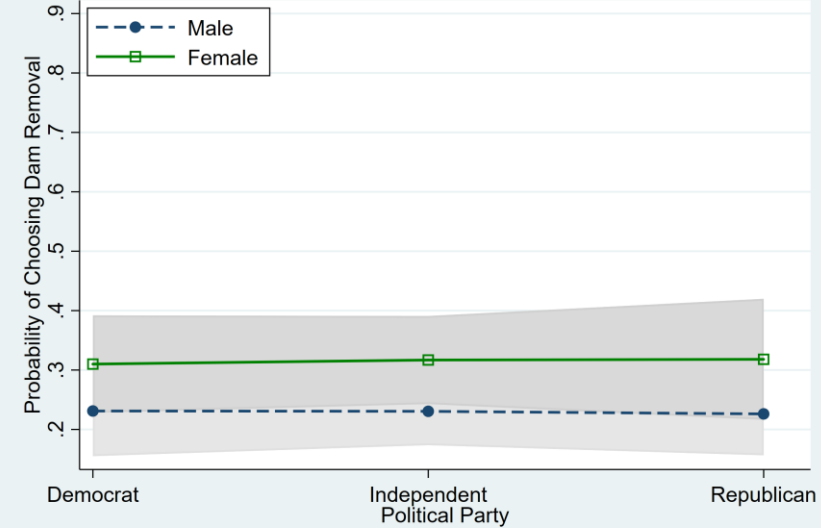
Who wants to remove dams when alternative is keeping for lakes?



Who wants to remove dams when alternative is keeping for lakes?



Who wants to remove dams when alternative is keeping for lakes?



Who supports dam removal over keeping dams for maintaining lakes and ponds?

Key Findings

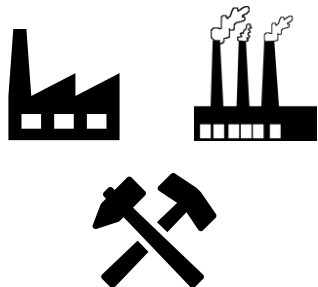


- Education has no significant effect on people's preferences, regardless of tradeoff (hydropower or lakes)
- Age and gender are strong predictors of people's preferences, regardless of tradeoff
 - Younger people and females more likely to prefer removal
- Political ideology and party affiliation drive people's preferences on dam removal, when the alternative is to keep dams for hydropower
- In contrast, political ideology and party affiliation have no significant effect on preferences when the alternative is to keep dams for lakes and ponds

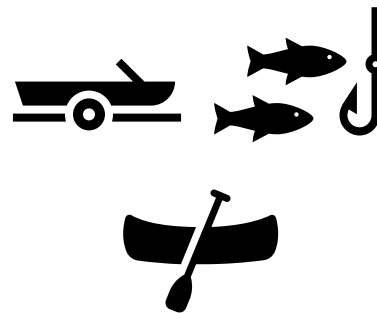
Ongoing Work: Survey Dataset Expansion

- 4 questions added to April 2018 poll
- Increase sample size of question exploring hydropower preferences
- Better understand preferences by exploring 3 additional tradeoffs

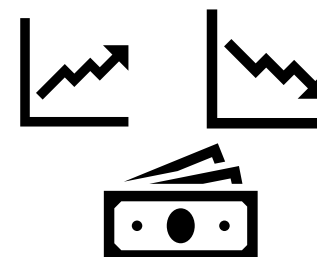
**Preserving New
Hampshire's industrial
history**



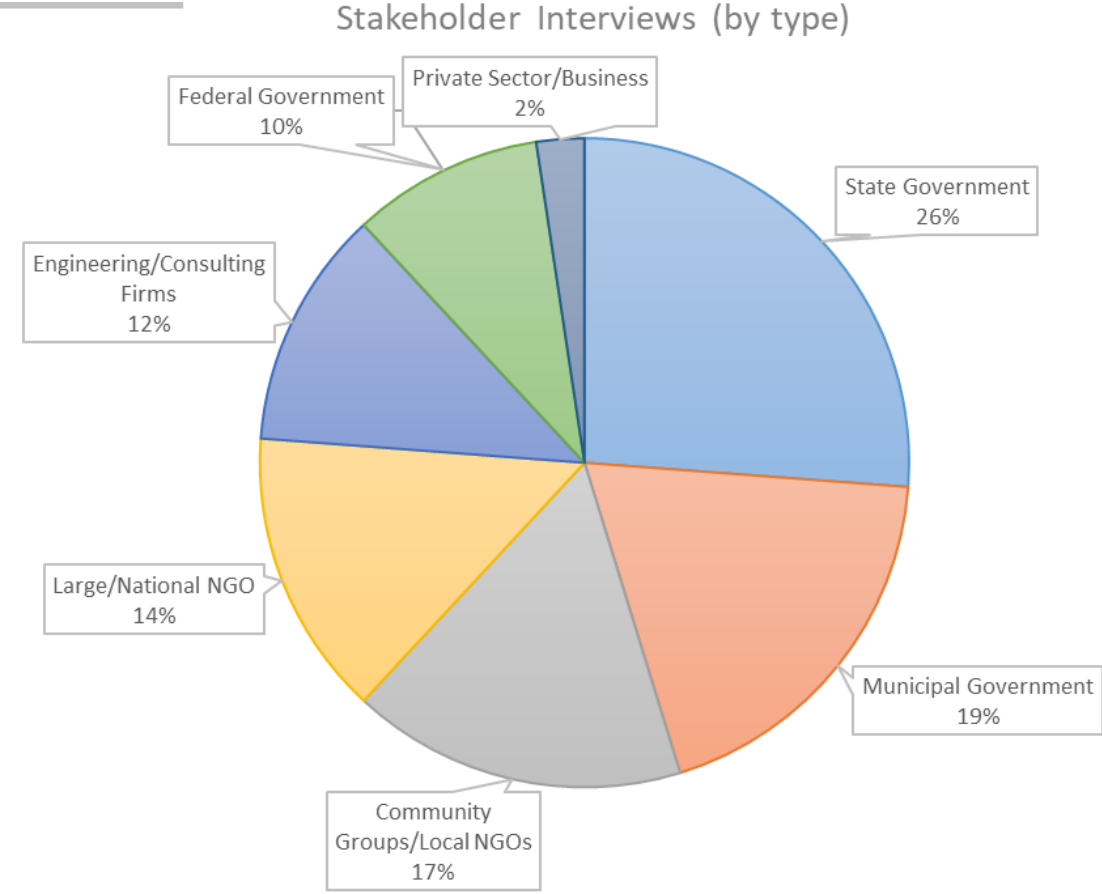
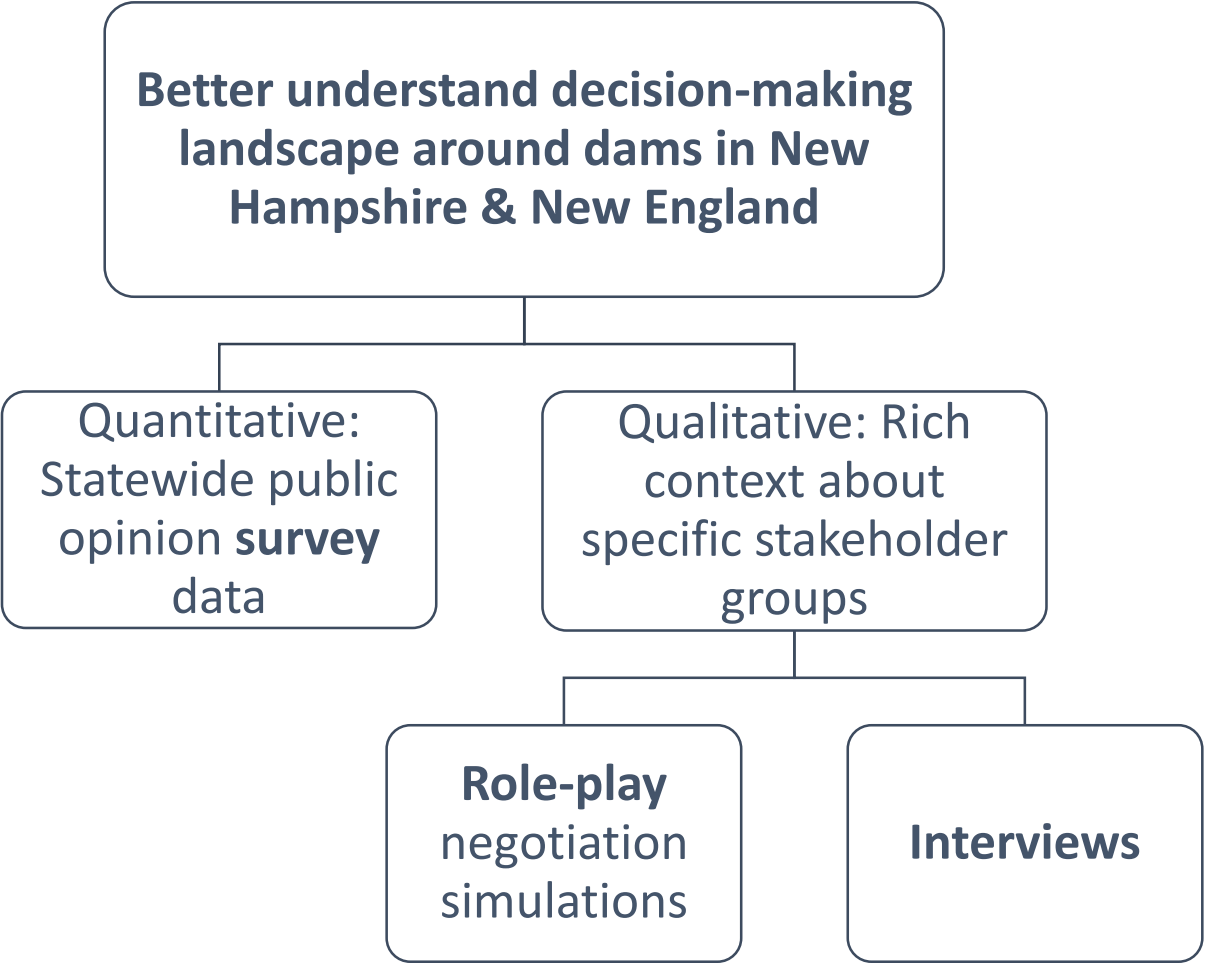
**Preserving recreation
associated with lakes and
ponds**



**Preserving
waterfront property
values**



Ongoing Work: Human Dimensions of Dam Decisions



Thank you! Questions? Comments?

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



Ashuelot River, Keene, NH



Cobbossecontee Stream, Gardiner, ME



Connecticut River, Wilder, VT & West Lebanon, NH



Golden Brook, Windham, NH

Photos: N.Leuchanka