

# MUNICIPAL LAND CONSERVATION PLANNING FOR FLOOD RESILIENCE IN NEW HAMPSHIRE'S COASTAL WATERSHED

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**2024 CAW Climate Summit  
July 18, 2024**



**University of  
New Hampshire**



King High Tide, Hampton, NH Photo Credit: Patricia Lane Evans

This project was supported by:

USDA National Institute of Food and Agriculture through the NH  
Agricultural Experiment Station Award #NH00651, and New  
Hampshire Water Resources Research Center FY 2021 Section  
104 Research Program Grant.



# RESEARCH QUESTION

**How do NH's coastal watershed municipalities use land conservation to increase flood resilience?**

We are interested in:

- Institutional factors that contribute to effective municipal conservation planning
- Barriers and opportunities to land conservation as a flood mitigation strategy

# STUDY AREA AND DATA COLLECTION

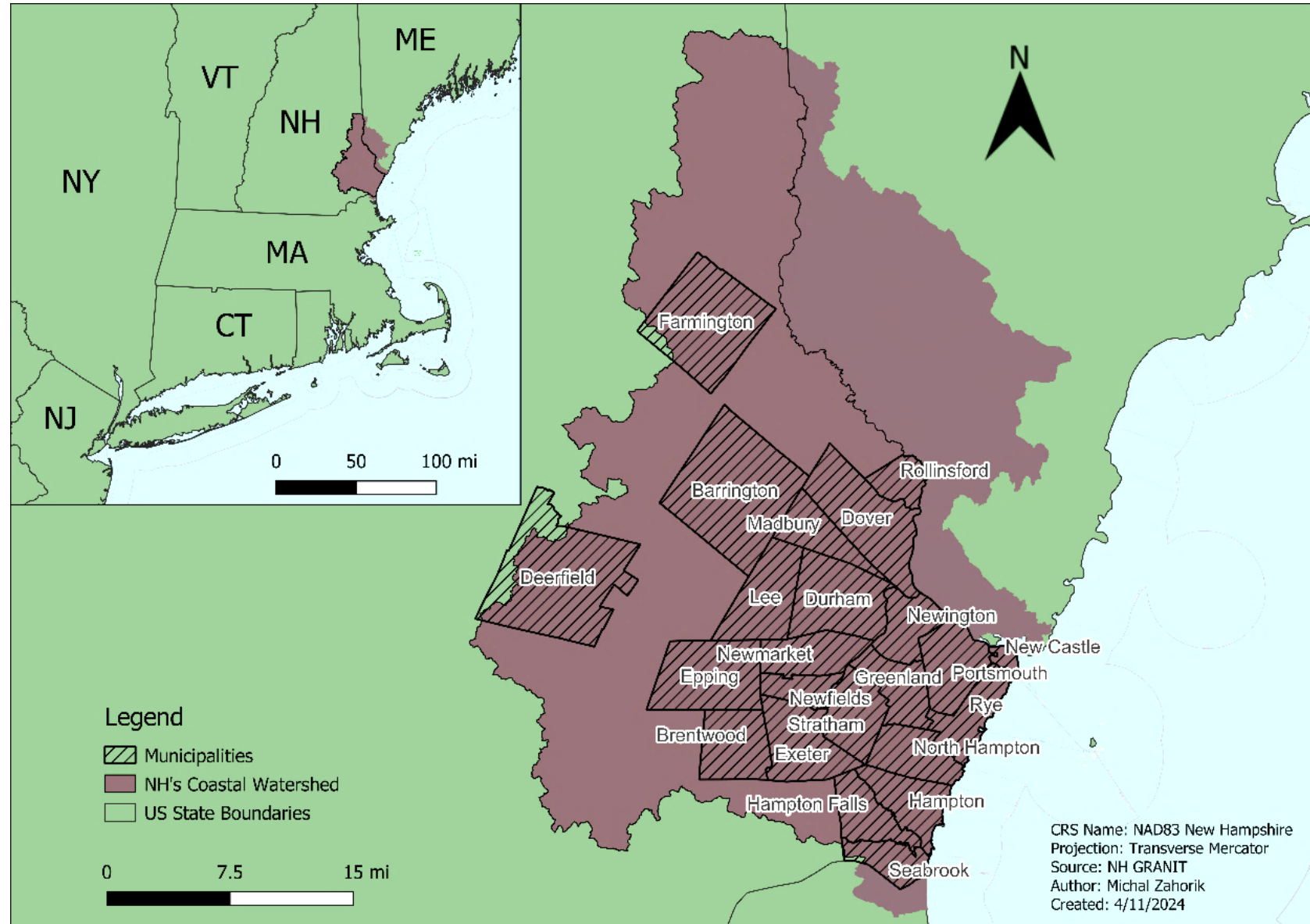


27 interviews with officials from 23 municipalities

- Conservation commission chairs
- Town planners
- Agricultural Commission Chairs

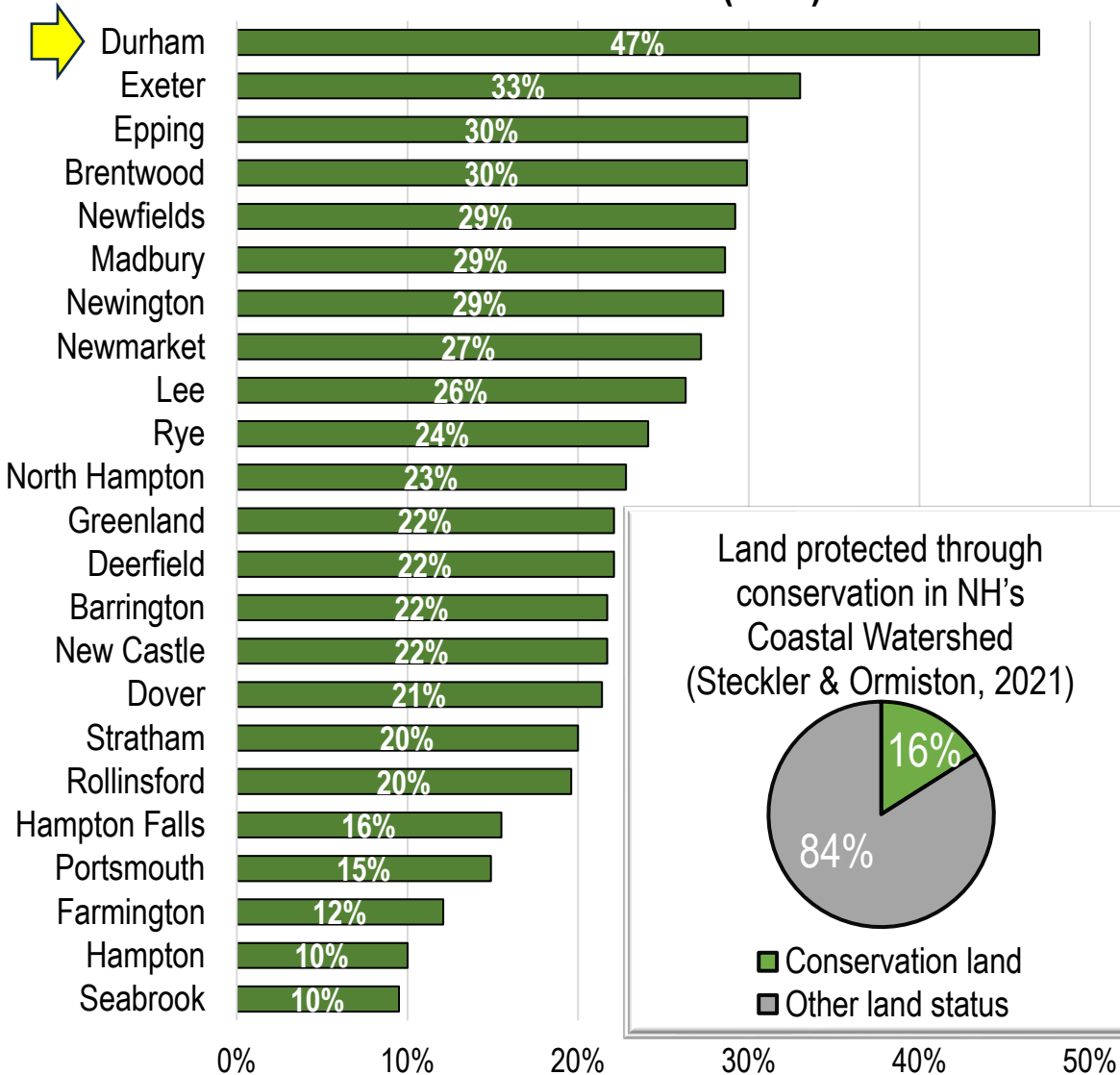


Review of existing studies, plans, and reports on land conservation planning and hazard mitigation.

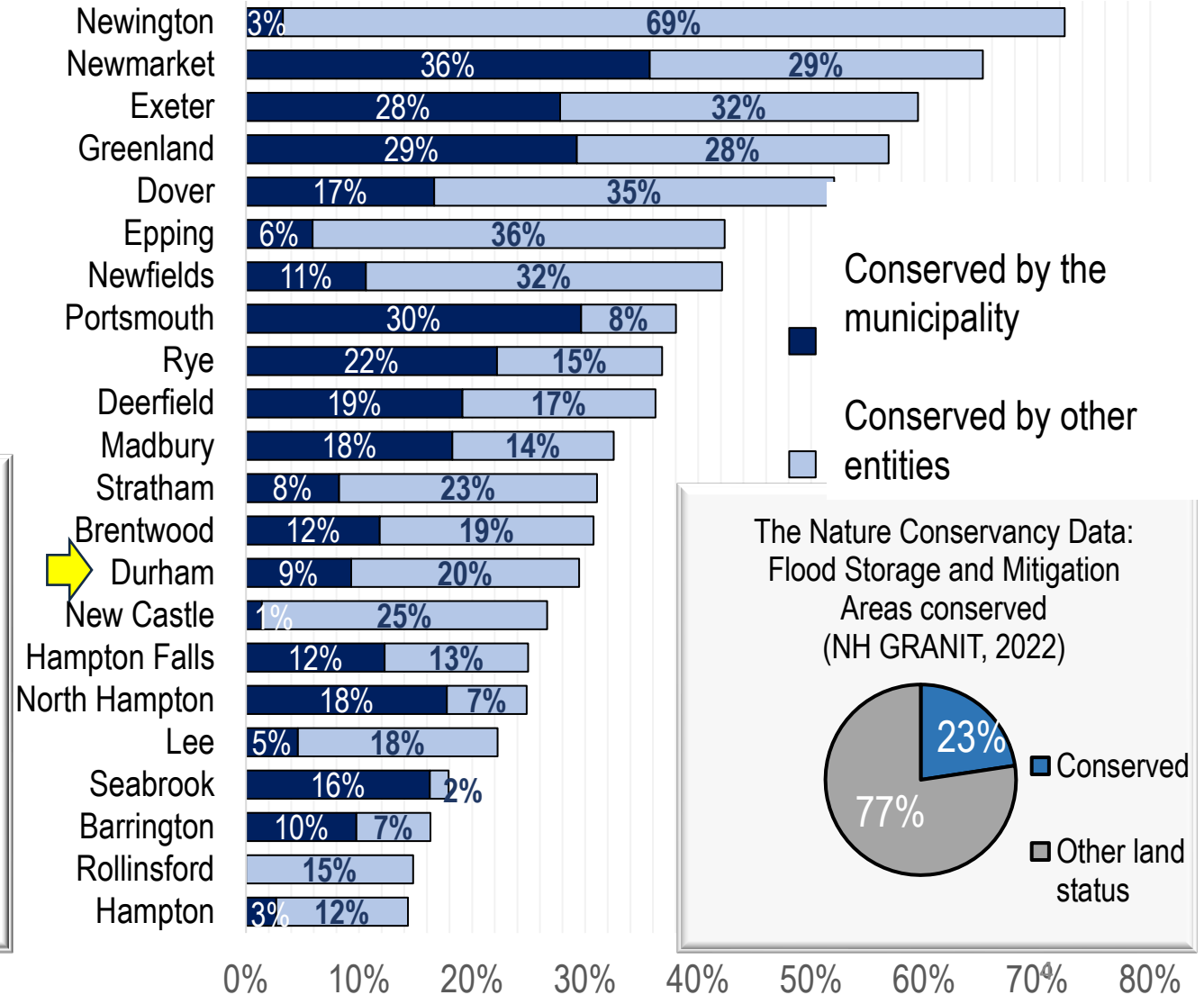


# LAND CONSERVED AND FLOOD STORAGE IN NH'S COASTAL COMMUNITIES

## Total Land Conserved (in %)



## Flood Storage and Mitigation Areas Conserved (in %)



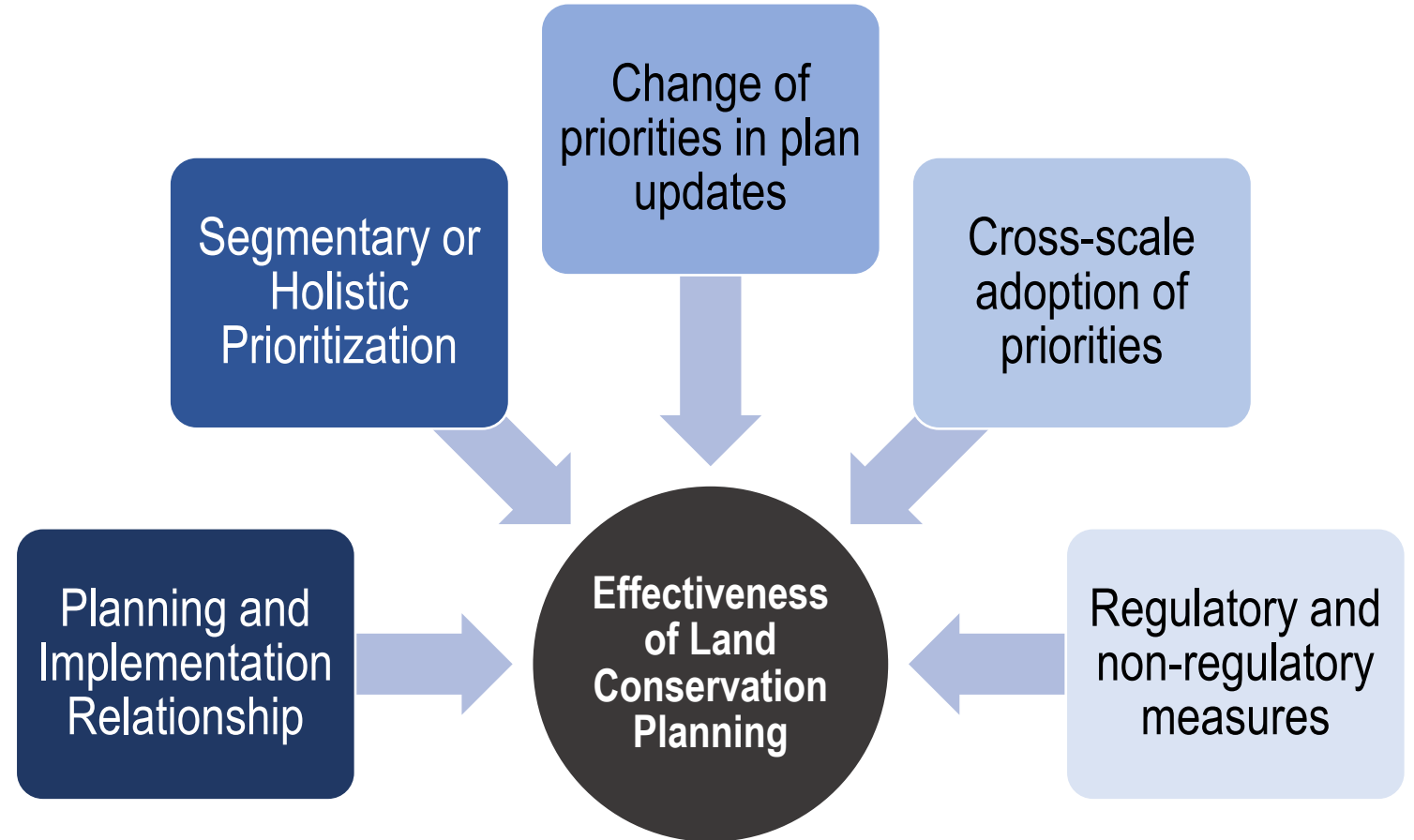
Source: State of Our Estuaries, Conserved Lands (SOOE Extended), PREP 2023.

Note: The Town of Farmington is excluded. Flood storage and mitigation areas were not identified within the town.

# EVALUATION METRIC

**The effectiveness of land conservation planning for flood resilience**

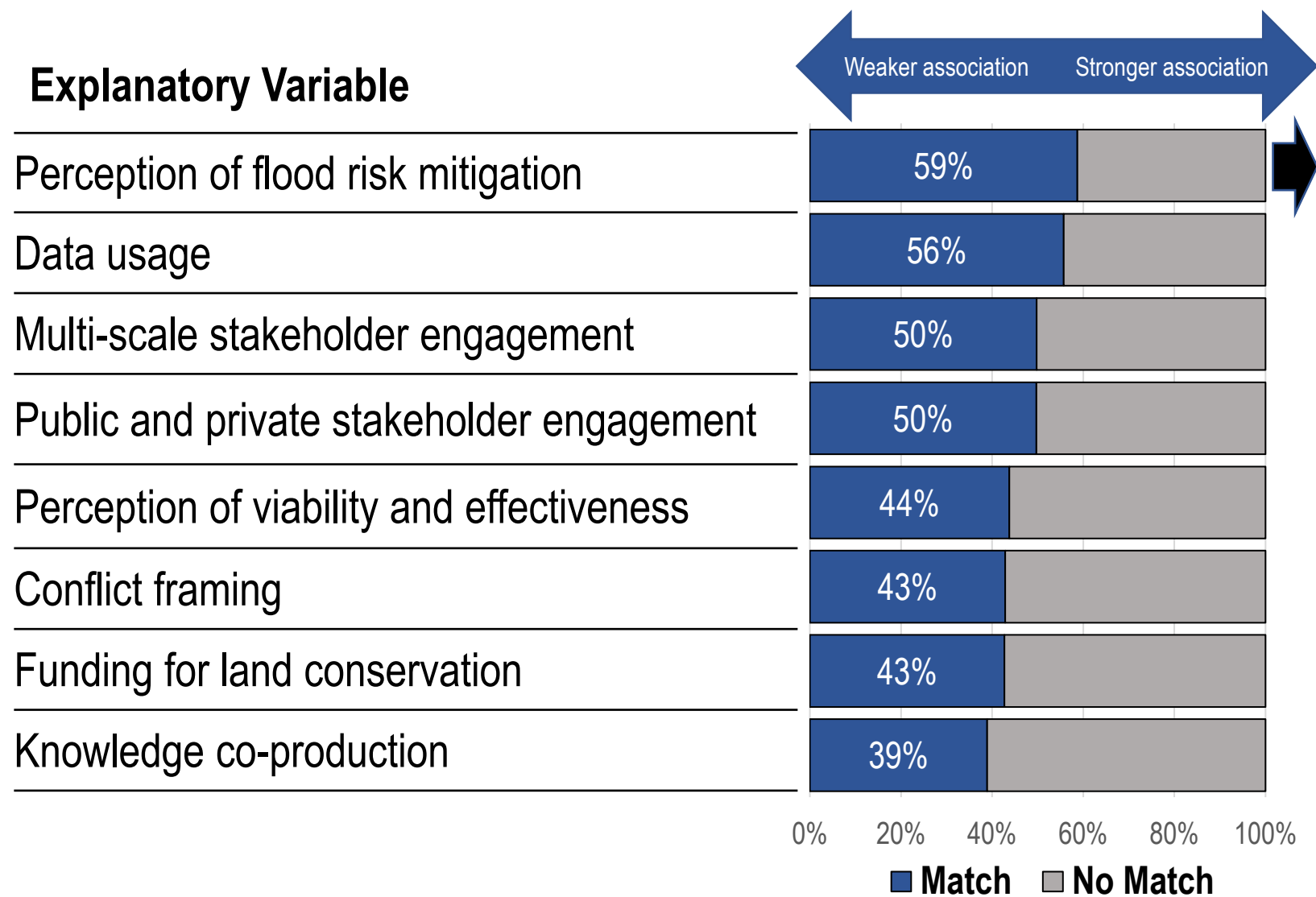
**Each community was evaluated based on 5 variables**



# EFFECTIVENESS OF LAND CONSERVATION PLANNING FOR FLOOD RESILIENCE

Most evidence of effectiveness (Group 1)	Moderate evidence of effectiveness (Group 2)	Less evidence of effectiveness (Group 3)	No evidence of effectiveness (Group 4)
<i>≥3 of 5 outcome variables establish effectiveness</i>	<i>2 of 5 outcome variables establish effectiveness</i>	<i>1 of 5 outcome variables establishes effectiveness</i>	<i>0 of 5 outcome variables establish effectiveness</i>
Barrington	Farmington	Hampton	Rollinsford
Dover	Rye	North Hampton	Madbury
Deerfield	Hampton Falls	Stratham	Epping
Exeter	Newington	Durham	New Castle
Portsmouth	Brentwood	Lee	
Greenland	Seabrook	Newfields	
Newmarket			

# Findings: Predictors of effectiveness



## HOWEVER:

Perceived flood risk mitigation as a high priority **doesn't equal** better protection of flood storage areas.

For example:

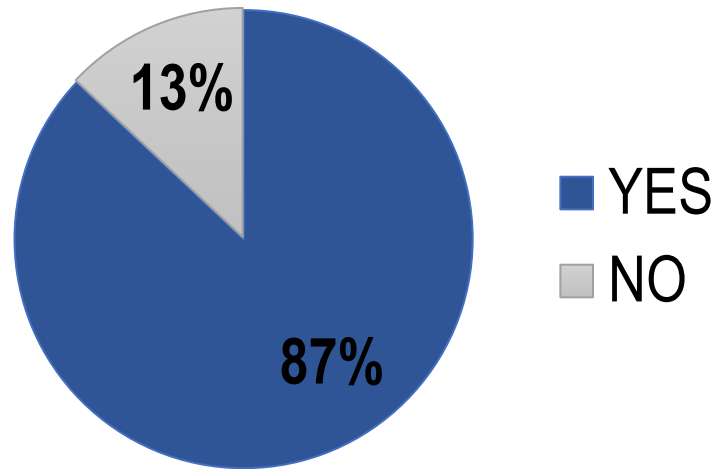
**Town of Hampton:** "High" priority  
15% of flood storage areas  
conserved

**VS.**

**Town of Newmarket:** "Medium to  
High" priority  
65% of flood storage areas  
conserved

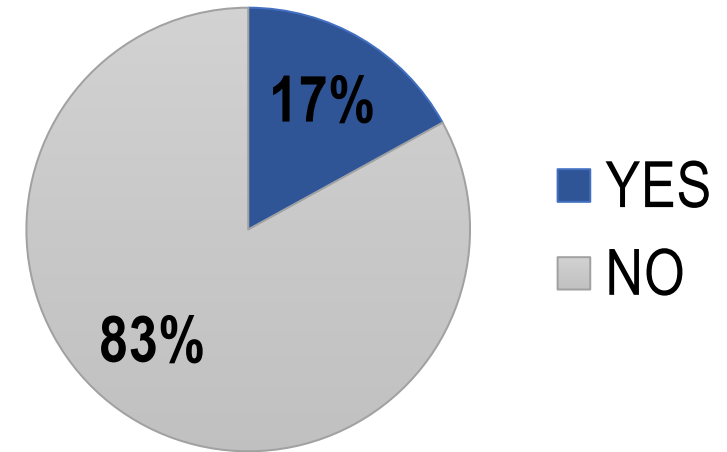
# Other Findings: Land Conservation Priorities

Water Resources Protection



**Versus**

Flood Mitigation



n = 23 municipalities

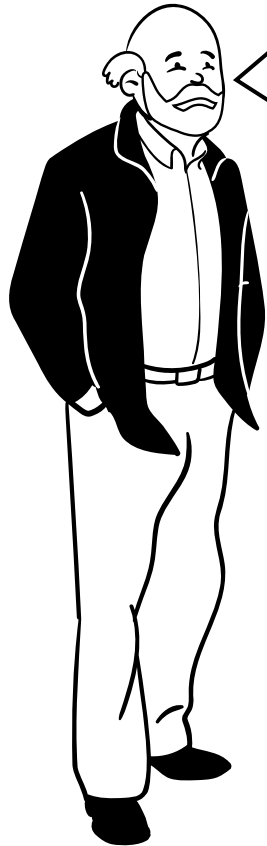
- Low relationship between perception of flood mitigation and inclusion of flood mitigation as a conservation priority



# MAJOR BARRIERS

- Low administrative capacity. Only 3 out of 23 communities had a dedicated staff person for conservation-related issues.
- Limited grant opportunities to protect flood storage areas.
- Flood mitigation is often seen as a co-benefit of conservation planning efforts, rather than the main priority.

# Natural hazard mitigation is not seen as a responsibility of the conservation commissions.



*"We talk about fragmentation. We talk about wildlife. We talk about rural character. We've never talked about flood management at the Conservation Commission. The planning board could be different, but the Conservation Commission-- because we don't have much responsibility"  
(RI20).*

*"Conservation Commission is very concerned about conservation, but they're not as fully knowledgeable about all hazards and mitigation and risk management"  
(RI12).*

*"Conservation isn't headed in the direction of trying to deal with sea rise, but certainly, the planning board is"  
(RI15).*



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