

# An economic evaluation of the demand for beach safety information

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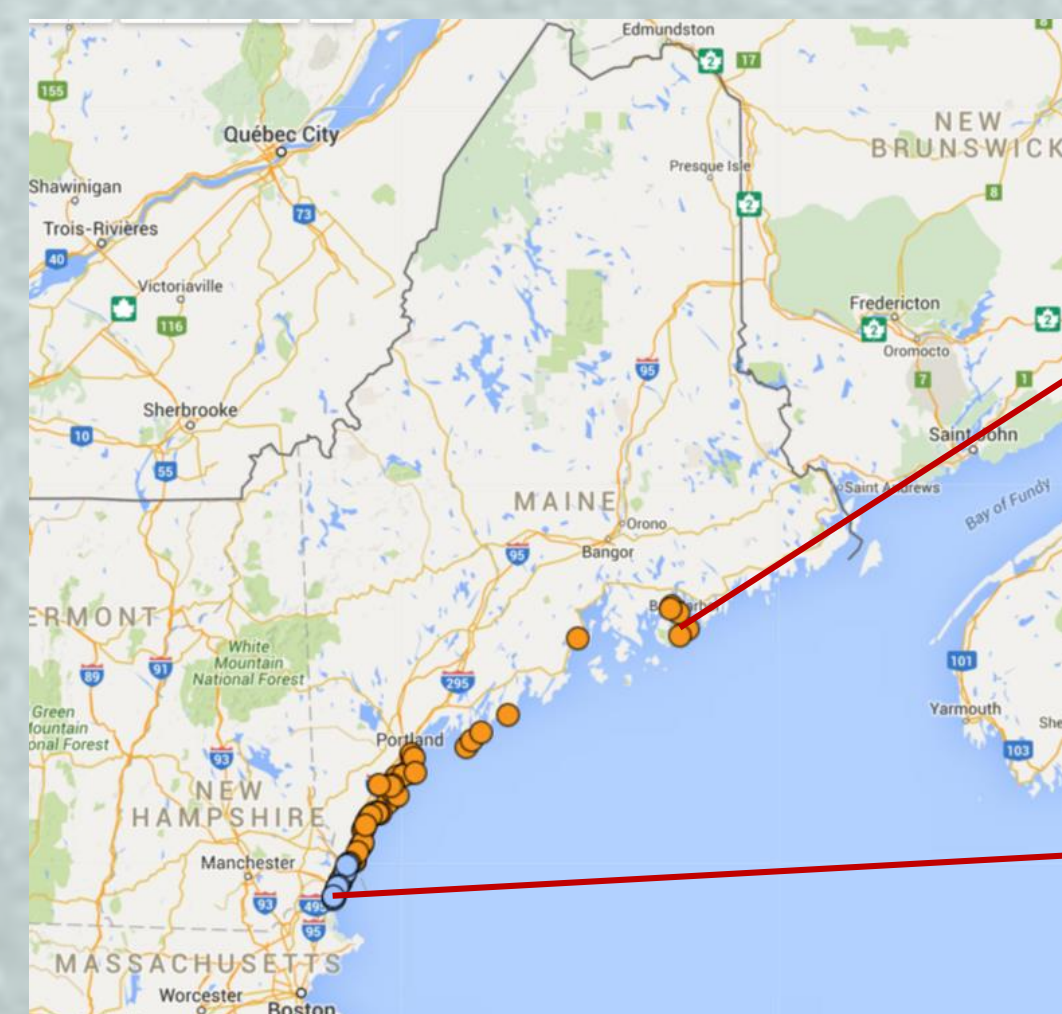
## INTRODUCTION

Coastal tourism and recreation contribute over \$97 billion to the national GDP annually, and people travel great distances to visit and recreate on coastal beaches. These large, diverse beachgoer populations necessitate balancing the value of visitation to local economies with concerns for safety and public health when managing beach resources. In this study, we model demand for beach safety information, addressing:

1. Do beach users' past experiences and familiarity with beaches impact demand for beach safety information?
2. Do the factors impacting demand for surf conditions information and water quality information differ?

## METHODS

### Study Area



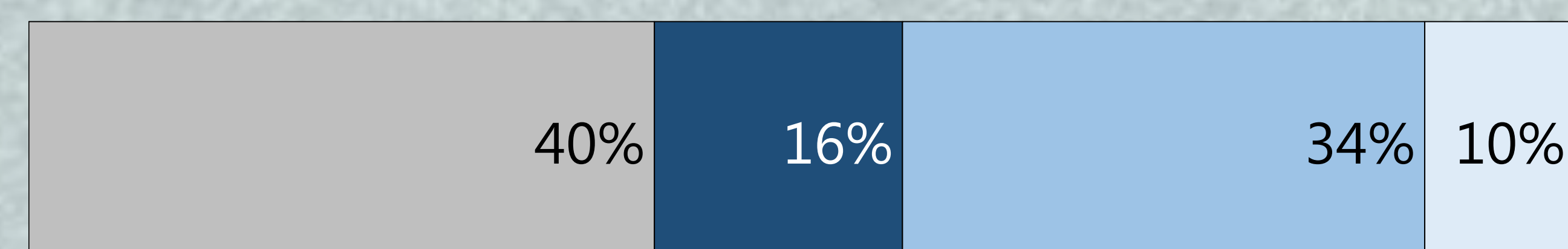
Maine and New Hampshire beaches provide a particularly interesting study area for this analysis for two reasons:

1. Adjacency: Users substitute between beaches & regions.
2. Diversity: Beaches across the state vary in attributes and water quality conditions.

### Data

We gathered data from an online survey of users of Maine and New Hampshire coastal beaches. Our final analysis includes 299 respondents.

**Fig 1.** Responses to the question 'What type of beach safety information do you seek out?'



- No information
- Both water and surf
- Surf conditions only
- Water quality only

## Model

Using a multinomial logit regression, we model choices between 4 information-seeking alternatives: (1) No information, (2) Both water quality and surf conditions information, (3) Surf conditions information only, and (4) Water quality information only. Individual choices are modeled as a function of: demographic and personal characteristics, risk, and experience and familiarity proxies.

## RESULTS

All results are reported compared to the reference group, 'no information' alternative (n=121).

Both Water Quality & Surf Conditions	Surf Conditions	Water Quality
N = 48	N = 101	N = 29

### DEMOGRAPHIC & PERSONAL CHARACTERISTICS

Age* (-)	Female* (+)	Canadian*** (+)
Age squared** (+)	Income* (-)	
	Environmental Org*** (+)	

### RISK PROXIES

Children 12 & under** (-)	Children 12 & under** (-)
Risk index** (-)	

### EXPERIENCE & FAMILIARITY PROXIES

Coastal swimming** (+)	Coastal swimming*** (+)	Coastal swimming*** (+)
Coastal fishing*** (+)	Coastal surfing*** (+)	
Frequent ocean visitor** (+)	Frequent ocean visitor* (-)	
Lives within 20km coast** (-)	Lives within 20km coast*** (-)	

**Log Likelihood: 608.2**

Asterisks denote significance. \* : significant at the 10% level; \*\* : significant at the 5% level; \*\*\* : significant at the 1% level. For simplicity of reporting, estimates that were not significant are not included in these results.

**Table 1.** Wald tests of joint significance: groups of significant variables in each model

Both water quality & surf conditions	Surf Conditions	Water Quality
	Demographic & Personal Characteristics	Demographic & Personal Characteristics
	Risk Proxies	Risk Proxies
Experience & Familiarity Proxies	Experience & Familiarity Proxies	

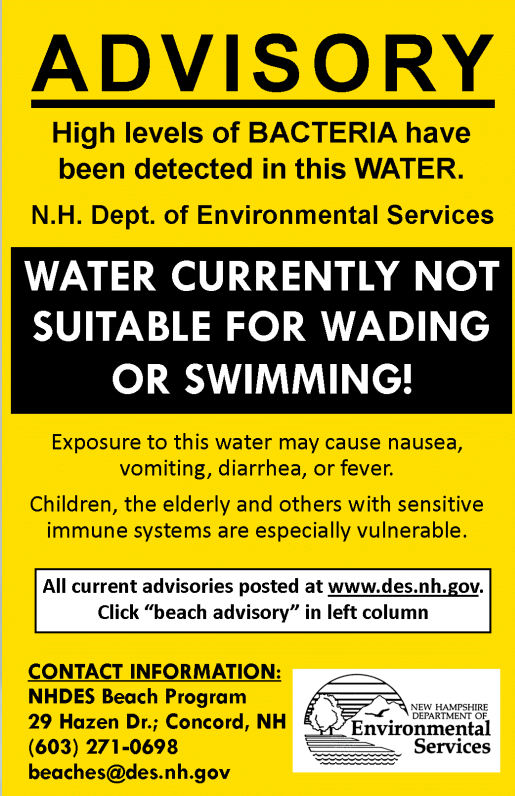
## CONCLUSION

1. Do beach users' past experiences and familiarity with beaches impact demand for beach safety information?

There is evidence that past experience and familiarity with beaches impact information-seeking behavior. Notably, those who engage in direct contact with coastal water are more likely to seek out safety information.

2. Do the factors impacting demand for surf conditions information and water quality information differ?

Our results indicate that factors that influence safety information demand differ between types of information. In general, users were least likely to seek out water quality information only. Demographic and personal characteristics along with risk proxy variables were jointly significant in the water quality only and surf only models, while experience & familiarity were significant in the models for both types of information, and for surf conditions only.



Users may regard the risks associated with surf conditions and water quality differently, and our results leave us with questions about *who* is seeking out information about water quality only. Water quality communication efforts might reach a broader audience by linking their information with surf conditions information.

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