Attributes, activities, & meanings: Exploring climate impacts to nature-based tourism through the lens of "place"

Personal: Improved physical & mental health

NC STATE UNIVERSITY

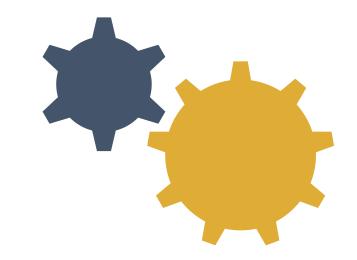
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Parks, Recreation & Tourism Management

Research problem

- Benefits of nature-based tourism (NBT):
- Environmental: High-quality ecosystems
- Economic: Regional growth/stability
- Climate change impacts NBT:
- Supply: natural resources (increased temperature, decreased fish populations)
- Demand: recreationists' trip-taking behaviors (timing, activity and site preferences)
- How can climate change impacts to NBT be assessed through the lens of place?

Multiple-method research design



Qualitative

- Jul. 18-Sept.7, 2015
- Photos: n = 186
- Unique users: n = 53

Quantitative

• Jul. 15-Aug. 3, 2015

Social: Stronger families

• n= 1,398

Climate

change

Shore:

scenarios for

the North

57% response rate

Data: On-site visitor survey data Analysis: Binary logistic regression Findings: 30% Plan trips for other times of the year Purchase new or better equipment Seek lodging options that enhance safety 16% Worry more about safety prior to/during trips Participate is less risky recreation activities Activities Visit recreation sites that reduce risk

Meanings

Objective 2

Place

Physical

attributes

Past impact Place meaning

isk perception	Frequencies		Concern	Efficacy
	Negative	Positive		
elf	28%	17%	Low	n.s.
uture trips	24%	18%	Low	Low
ec. infrastructure	33%	26%	Low	Low
ature	37%	31%	Low	n.s.
ourism economy	32%	25%	Low	Low

Study Area



Future –high Current % days above avg. daily temperature (71 F) 60% (18 of 30 days) 63% (19 Of 30 days) 67% (21 of 30 days) % days of above 80 F heat index 5% (2 of 30 days) 17% (5 of 30 days) 19% (6 of 30 days) 12% (4 of 30 days) % of days with more than 1/4 " rainfall 14% (5 of 30 days) 11% (3 of 30 days) 'very high' & 'extreme nigh,' 'very high,' & 'extr 18% (6 of 30 days) 35% (11 of 30 days) % of days with fire risk 37% (11 of 30 days) % of streams with brook trout 53% % of streams with small-mouth bass

Understand how place meanings may mediate climate change Objective 3 driven recreation substitution

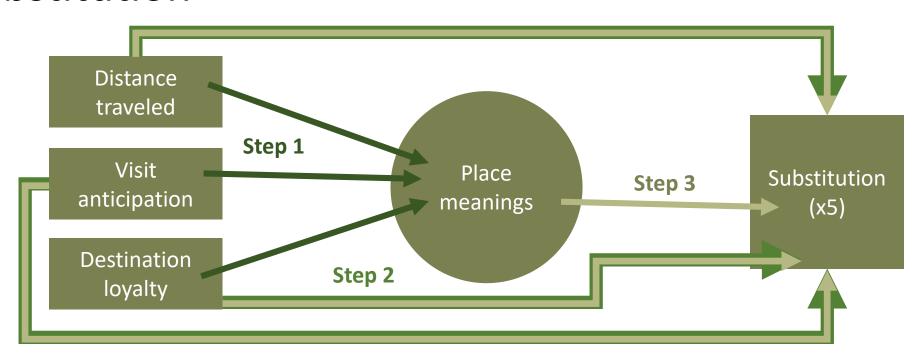
Place

meaning

Gender

Data: On-site visitor survey data

Analysis: Ordinal logistic regression with a mediating variable



Findings:

Assess how visitors' place meanings

are related to visitors' (a) past

coping behaviors and (b) future risk perceptions.

Stay on the North Shore but do something else. Cancel your trip, but reschedule during the summer season. Cancel your trip for the full summer season. Cancel your trip for the full summer season. Travel elsewhere on the North Shore to participate in the planned summer activity. Stay on the North Shore but do something Low loyalty $(p < .033)$ n.s. Low loyalty $(p < .021)$ Partially mediated Low loyalty $(p < .014)$ n.s. Low loyalty $(p < .014)$ n.s. Not mediated Not mediated High anticipation $(p < .031)$ partially mediated	Recreation substitution		Destination loyalty	Trip anticipation	Travel distance	
Summer season. Cancel your trip for the full summer season. Partially mediated Low loyalty (p < .014) Partially mediated n.s. n.s. n.s. Partially mediated	Activity substitution	,	, , , ,	n.s.	n.s.	
Travel also whom any the Nierth Character	ooral		, , , ,	, , ,	n.s.	
Travel elsewhere on the North Shore to participate in the planned summer activity. Low loyalty $(p < .018)$ High anticipation $(p < .031)$ n.s. Partially mediated	Tem		, , ,	n.s.	n.s.	
	tial tution		, , , ,	, , ,	n.s.	
Travel outside of the North Shore to participate in the planned summer activity. Low loyalty $(p < .004)$ High anticipation $(p < .009)$ n.s.	, 1		, , , ,		n.s.	

Chiective 1 Explore the physical characteristics of place as conceptualized through

images of a NBT destination.

Data: Photographic images and captions

Fink, A. G. (2012). How to conduct surveys: A step-by-step guide. Sage Publications.

Analysis: Interpretive content analysis to reveal key themes

Findings:	Category	Themes	Full (n)	Full (%)	Avid removed (n)	Avid removed (%)			
2. E	1. Natural Resources	Wildlife, weather, waterfalls, rocks, plants, rivers, Lake Superior, inland lake, landscapes, insects, forests, coastline.	205	45%	117	43%			
	2. Built infrastructure	Roads (waysides, transportation corridors, streetscapes), recreation infrastructure (e.g., trails, boat ramps, bridges), historic sites, buildings (e.g., lighthouses, retail shops, restaurants) hotels, cabin or lodge.	70	15%	40	15%			
	3. Human Subjects	Self, recreation provider, pets, number of subjects in photo, family and friends, youth, mixed generation, adults.	66	14%	44	16%			
	4. Outdoor Recreation	Visiting cultural and historic sites, swimming, scenic driving, rock collecting, recreation constraints, recreation substitution, picnicking, leisure at home, interpretation, visitor's center, signs, museums, hunting, hiking, gathering wild plants (foods), fishing, creating art, contemplation, rock climbing, camping, campfires, boating, bicycling, ATV use.	51	11%	29	11%			
	5. Affect	Include both references to positive and negative emotional responses.	39	9%	18	7%	2303		
6	6. Culture	Ojibwe (native American symbols or cultural references), food and drink, art.	29	6%	22	8%			cartiste.

(#MyNorthShore)

Place-based marketing

- Include images of key attributes (transcend language barriers)
- Elicit place-based values related to desirable visitor behaviors
- Place image/meanings may curb losses due to climate change

Place-based management

- Resource inventory, monitoring & climate adaptation through visitors' conceptualization of the North Shore destination image
- Behavioral: influenced by place meanings
- Cognitive: influence by global climate concern
- Changing environmental conditions

 flexibility for substitution

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Fisichelli, Nicholas, A., Schuurman, G. W., Monahan, W. B., & Ziesler, P. S. (2015). Protected area tourism in a changing climate: Will visitation at US National Parks warm up or overheat? PLOS ONE, 10(6), 1–13. Manning, R. E. (2010). Studies is Outdoor Recreation: Search and Research for Satisfaction. Corvallis: Oregon State University Press. Pryor, S. C., Scavia, D., Downer, C., Gaden, M., Iverson, L., Nordstrom, R., ... Robertson, P. G. (2015). Ch. 18: Midwest. Climate Change Impacts in the United States: The Third National Climate Assessment.

Smith, J. W., Davenport, M. A., Anderson, D. H., & Leahy, J. E. (2011). Place meanings and desired management outcomes. Landscape and Urban Planning, 101(4), 359–370.

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