

THE INFLUENCE OF DISTANCE AND VISITOR PERCEPTIONS OF SECURITY ON PERCEIVED MANAGEMENT PROBLEMS AMONG NEW ENGLAND ANGLERS

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Abstract

This study explores the nature of the relationship between distance, place attachment, feelings about security and visitors' perceptions of problems at New England lakes. Understanding visitors' past experiences has been a valuable tool for managers in a variety of outdoor recreation settings. In this study, the researchers explore the previously mentioned relationships for a diverse group of anglers at lakes in the New England region. The results of the study show a common trend of positive and significant relationships between the independent and dependent variables. Distance was the least important predictor of perceived problems at the lake visitors went to most often. Security at the lake was the most powerful predictor of management problems, followed by place attachment. All four domains of management problems (lake and ramp access, impact of other users, lake and area conditions, and management actions) were significantly related to the independent variables.

1.0 Introduction

Previous studies (Smith 1985; Young & Smith 1979) examining spatial relationship variables (e.g., distance, urban-ness) have found that these variables play an important role in explaining recreation behavior. In this study we were interested in determining the effect of distance on management perceptions. The gravity model is useful for understanding intercity travel; however, the unmodified gravity model is not applicable to recreation travel, particularly with respect to parks (Wolfe 1970). In this case (parks or recreation sites), traffic is unidirectional (i.e., traffic is generated in one place and attracted to the other). In the model, distance is treated as friction. Wolfe (1970) indicated that the relationship between distance and visits to public parks is not simple. Wolfe (1970) suggested that the gravity model is applicable only for recreational trips between 100 and 150 miles. When trips are very short, the friction of distance is negligible, and beyond a certain considerable distance (e.g. one or two days' travel time) the friction of distance not only disappears but even reverses (Wolfe 1970). This is explained by the concept of "inertia" (Wolfe 1972).

The gravity model supports the idea of distance as a powerful predictor; however, this model has been criticized because it includes only two opposing forces that gravitate towards one another. Geographic distance has been shown to play a significant role in recreation site decision-making. Past studies have shown that the closer a person lives to a park, the more frequently they visit that recreation site (Smith 1985; Bell 1977). However, distance does not explain park visitation alone. Another problem with using distance as a variable is the many ways that distance can be measured. Examples include the actual distance between origins and destination (Bell 1977), time (Calatone et al. 1987), and cognitive distance (Ankomah & Crompton 1992). All of these have been shown to have an effect on the relationship to park visitation that visitors may experience. Recent literature (Ankomah & Crompton 1992; Ankomah et al. 1996) has placed emphasis on cognitive distance rather than actual distance because travelers may rely more upon their perceptions than on actual distance traveled.

As previous research shows, distance is not only an important variable for predicting visitors' behavior but is also useful for market segmentation. In the travel and tourism field, destination distance is considered an important traveler decision making criterion (Cook and McCleary 1983; Ankomah et al. 1996). The relationships between distance and other variables, however, are not linear (Moutinho & Trimble 1991). For example, within a comfortable day's drive, a family can travel by a car at a cost per mile. Beyond that limit, when a family travels by air, an increase in miles is less important than for traveling by car.

Previous research has also shown that a safe and secure environment is necessary for visitors to outdoor recreation areas. In a study of perceived security at Lake Somerville, Texas, Fletcher (1983) found that perceived security problems negatively affected lake users' enjoyment of the area. Other researchers have found that as many as one-third of park visitors do not feel safe in parks they were visiting (Godbey & Blazey 1983; Westover, 1986).

This study also explores the relationship between place attachment and management problems. Place attachment (PA) is the extent to which an individual values or identifies with a particular setting (Moore & Graefe 1984). Recent attention to customers and their experiences and attitudes towards agencies has both managers and researchers interested in issues like customer satisfaction and management preferences. Mowen et al. (1997) examined the relationships between the constructs of place attachment and activity involvement with experience and setting evaluations. They took an important step in our understanding of place attachment when they examined the relationship of a combined place attachment/enduring involvement scale with both setting and experience evaluations.

2.0 Methods

Data for this investigation were collected as part of a larger project focusing on anglers in the New England District of the U.S. Army Corps of Engineers. Angler's names and addresses were collected from mailing lists of angling clubs, Corps of Engineers mailing lists, and from on-site contacts. A total of 176 useable surveys were collected through a mail survey (33% response rate). A follow-up telephone survey was conducted with nonrespondents to test for response bias (n=30).

No significant differences were observed between respondents and nonrespondents with regards to multiple survey items. The hypothesized model was tested using regression analysis between independent variables (distance, place attachment, and views of security at the lake) and dependent variables (perceived problems at the lake).

Distance was determined by asking how many miles (one-way) anglers lived from their favorite lake. Eight items were used for the place attachment variable, which factor analyzed as one single dimension. The level of security at the lake was determined by asking how secure the angler felt at their favorite lake during the past 12 months. This study was conducted prior to major concerns arising from the incidents on September 11, 2001. Therefore, the results reflect a general assessment of security/safety at lakes in the New England region. Angler's perceptions of management issues were broken into four categories for the study: lake and ramp access, impact of other users, lake and area conditions, and management actions (Table 1). Lake managers and the researchers deemed these items/categories most relevant for the lakes in this region. The respondents were asked to indicate how serious they considered each of the problems to be using a three-point scale ranging from "not a problem" (1) to "a small problem" (2) to "a big problem" (3).

3.0 Analysis and Results

Regression analysis was used to examine the relationships between the independent variables and dependent variables. In Tables 2-5, only those dependent variables that were significantly related to the independent variables are displayed. In Table 2, the most powerful predictors of perceived problems in the lake and ramp access category were place attachment and feelings of security. As place attachment increased, anglers were more likely to consider foot access to the lake and an insufficient number of ramps to be a problem. For feelings of security, the more secure an angler felt at a lake, the lower their concern for the access variables.

The results in Table 3 are slightly different than in Table 2, with feelings of security being the only independent variable to be significantly related to the perceived impacts of other users. Again, the more secure an angler felt at a lake, the lower their concern level was for many of these problem items.

Table 1.—Management problem items at New England lakes

LAKE AND RAMP ACCESS
Lake is difficult to access by vehicle
Lake is difficult to access by foot
Insufficient number of ramps
Ramps are difficult to use
Ramps need to be resurfaced
Not enough parking near the ramps
Hours of operation limit my access to ramps
Hours of operation limit my access to fishing areas
IMPACT OF OTHER USERS
Conflicting activities reduce my enjoyment at the lake
Too many other anglers along the shore
Too many other ramp-users at the lake
Groups encountered were too large
Some anglers inconsiderate
Too many places congested with people
Not enough people at the lake
Too many dogs at the lake
Dogs off leash at the lake
Noisy/rowdy people
Lack of privacy at fishing areas
Fishing areas too heavily impacted
LAKE AND AREA CONDITIONS
Not enough restrooms/portable toilets at the lake
Not enough fresh water points at the lake
Too many weeds in the lake
Too many submerged obstacles
Not enough submerged obstacles
Not enough fish
Fish are not large enough
Fish that I catch are not the species that I desire
MANAGEMENT ACTIONS
Not enough information available to anglers
Not enough information available on how to prepare for a safe trip
Regulations not adequately publicized
Too many rules and regulations
Too many rangers/management staff at the lake
Too few rangers/management staff at the lake
Too many facilities along the lake

In Table 4 as well, feelings of security was significantly related to the lake and area condition problems. As with the previous results, the more secure an angler felt at a lake, the lower the level of concern for several of these problem conditions. The exceptions in this table involve the dependent variables “too many weeds” and “not enough fish.” In both cases, distance was inversely related

Table 2.—Effects of independent variables on perceived ramp and lake access problems.

Independent Variable	Lake is difficult to access by foot		Insufficient number of ramps	
	r	beta	r	beta
Place attachment	.167*	.164*	.220**	.226**
Feelings of security	-.181*	-.195**	-.122	-.147*
Distance from lake	.076	.135	-.006	.061
R-squared	.077**		.068**	

***= Significant at .001 **=Significant at .01 *=Significant at .05

to the perceived problem, suggesting that as people travel further to visit lakes, they are less concerned about the number of weeds and amount of fish at the lake. Perhaps this indicates that people are likely to travel farther to reach a lake where they expect to find fewer weeds and better fishing conditions. Place attachment also showed an inverse relationship with the perception that there may be too few fish in the lakes they were fishing.

In Table 5, two of the independent variables (security and distance) were significantly related to several problems in the management actions category. As before with feelings of security, the more secure an angler felt at a lake, the less concern they expressed for these management actions. Distance from the lake was significantly related to two dependent variables. The results suggest that the further an angler travels to a lake, the greater their perception that there are too few rangers/staff at the lake and that there is not enough information available for a safe trip.

The final step in the analysis for this paper involved preparing maps showing the origins of anglers at several of the more popular lakes in the study area. These maps (Figures 1-5) show that the smaller lakes (Lake Buffumville, Lake Congamond, East Brimfield Lake, and Webster Lake) tend to draw anglers from smaller areas. These lakes have a minimal amount of facilities compared to the wide variety of outdoor recreation opportunities that a person might find at the larger Lake Winnepesaukee. The maps of the five lakes provide a visual image of the distances that anglers in this study traveled. The majority of anglers come from an area of less than 40 miles. Most of the anglers in this study were bass anglers.

Table 3.—Effects of independent variables on perceived impact of other user problems.

Independent Variable	Some anglers inconsiderate		Too many other ramp users		Too many dogs		Dogs off leash at lake	
	r	Beta	r	Beta	r	Beta	R	Beta
Place Attachment	.114	-.098	-.096	.087	-.066	-.019	-.057	.021
	-.217**	-						
Feelings of security	.211**		-.207	-.203**	-.160*	-.178*	-.306**	-.327***
Distance from lake	-.001	.083	-.085	.100	-.024	-.101	-.085	-.138
R-squared	.065**		.053*		.045*		.127***	

***= Significant at .001 **=Significant at .01 * =Significant at .05

Table 3.—continued.

Independent Variable	Conflicting activities reduce my enjoyment		Too many other ramp-users at lake		Noisy/Rowdy people	
	r	Beta	r	Beta	r	Beta
Place Attachment	-.064	-.044	-.096	-.082	-.045	.000
Feelings of security	-.200*	-.215**	-.207**	-.177*	-.331**	-.333***
Distance from lake	-.019	.079	-.085	-.028	-.066	-.047
R-squared	.055*		.045*		.114***	

***= Significant at .001 **=Significant at .01 * =Significant at .05

Table 4.—Effects of independent variables on perceived lake and area condition problems

Independent Variable	Not enough fish		Not enough restrooms		Not enough fresh water points		Too many weeds in lake	
	r	Beta	r	Beta	r	Beta	R	Beta
Place Attachment	-.180*	-.162*	-.032	-.005	-.048	.068	-.024	.006
Feelings of security	-.024	.001	-.301	-.297***	-.227**	-.219**	-.185 *	-.164*
Distance from lake	.245**	-.162*	-.053	.069	-.048	-.022	-.173*	-.144*
R-squared	.060**		.092**		.048*		.049**	

***= Significant at .001 **=Significant at .01 * =Significant at .05

Table 5.—Effects of independent variables on perceived management action problems

Independent Variable	Not enough information available to angler		Not enough information available to plan for a safe trip		Too few rangers/ management staff		Too many facilities along lake	
	r	Beta	r	Beta	r	Beta	r	Beta
Place Attachment	.101	.113	.086	.073	-.020	-.006	-.040	-.017
Feelings of security	-.175*	-.201**	-.160*	-.157*	-.332**	-.327***	-.225**	-.237**
Distance from lake	.095	.115	.127	.173*	.120	.148*	.042	.105
R-squared	.060**		.057**		.124***		.066**	

***= Significant at .001 **=Significant at .01 * =Significant at .05

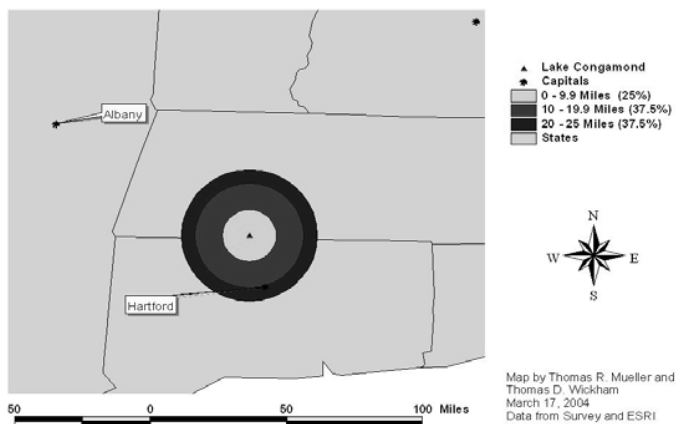


Figure 1.—Lake Congamond (% Respondents)

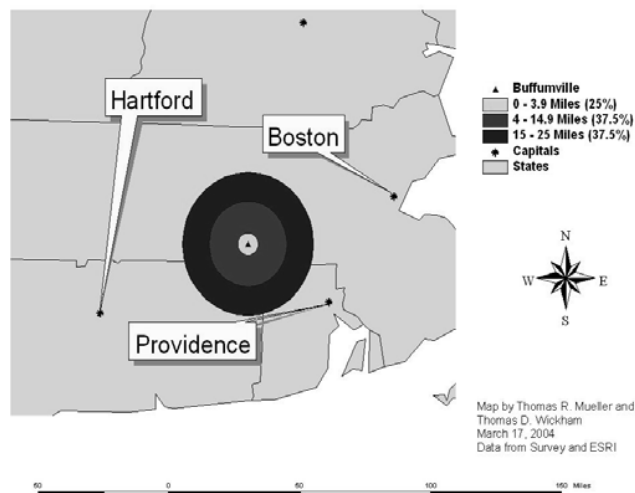


Figure 2.—Distance from Lake Buffumville (% Respondents)

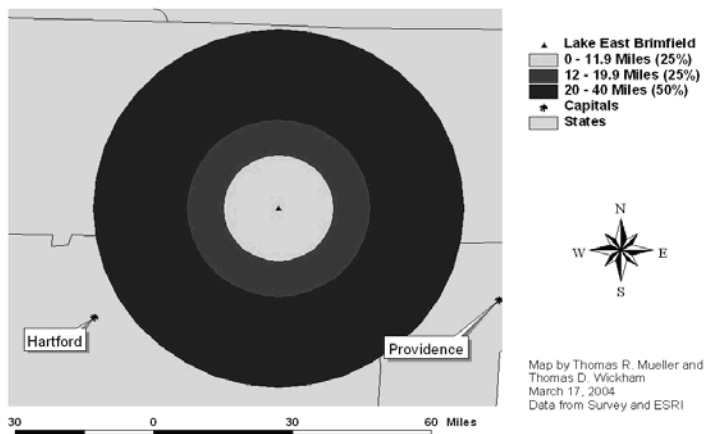


Figure 3.—Distance from Lake East Brimfield (% Respondents)

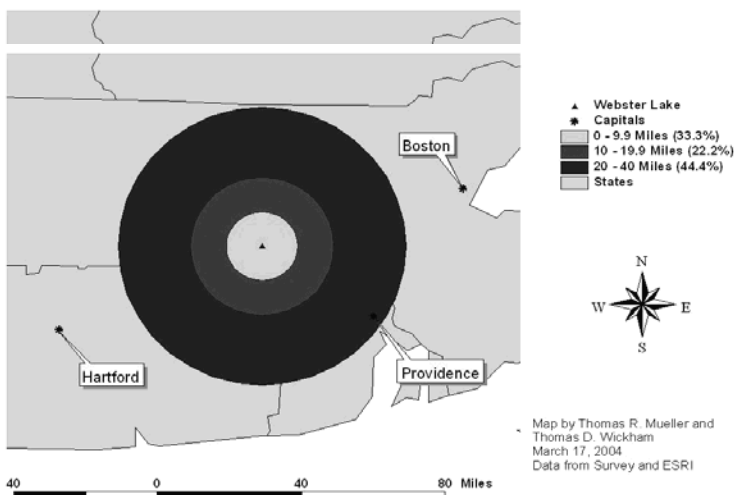


Figure 4.—Distance from Webster Lake (% Respondents)

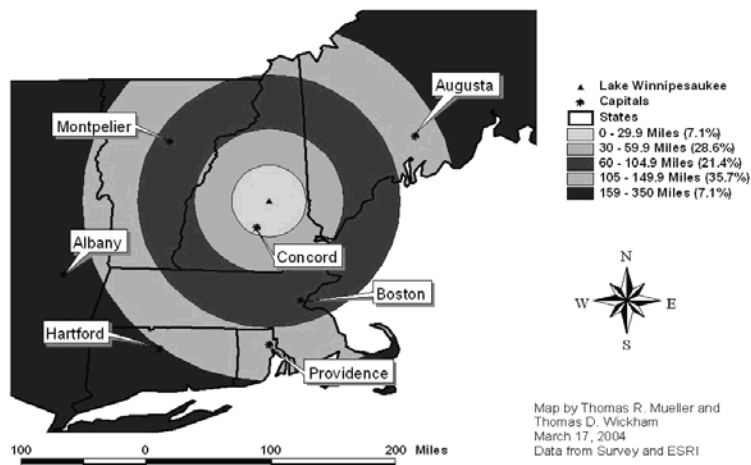


Figure 5.—Distance from Lake Winnepesaukee (% Respondents)

Many of these anglers are quite mobile, highly involved (members of fishing clubs or have invested large amounts of money for fishing boats and equipment). Lake Winnepesaukee is a large lake in the New England region that attracts a large number of people. Anglers that fished at this lake were willing to travel as far as 350 miles. The majority of New England's major population centers fall within this distance range. The larger draw of Lake Winnepesaukee makes sense due to the greater amount of resources available (camping, hiking and other outdoor recreation activities), as well as the fishing opportunities. Managers could use these maps to help visualize where most of their visitors come from when considering important managerial decisions or actions that might impact the various user groups at these lakes. Another use for these maps would be to promote the value (recreation opportunities) of these lakes to the areas from which they receive most of their visitors.

Conclusions and implications

There are a number of steps that could be taken to improve the overall study. The first would be to obtain a larger sample size. This would allow the researchers greater flexibility in making comparisons between lakes and various angling groups. The researchers might also consider other distance variables. We believe that the use of perceived distance or actual travel time might provide greater insight into how distance might influence how anglers perceive management problems and actions. Another option would be to consider examining the relationship between place attachment and distance variables. Other researchers might consider using the same variables in different recreation settings or modifying the current constructs as used in this study. The refinement of current measures might provide information to make more informed management decisions.

In summation, there were a number of important and interesting results. First, security at the lakes was the most consistent predictor of management problems among anglers in the New England region. Place attachment was also an important predictor of the some of the dependent variables. The last independent variable (distance) did not perform up to expectations and only played a small role in the analysis of this study. Perhaps some of the changes suggested above might improve our understanding of how distance may influence anglers' management perceptions.

In conclusion, all four types of management problems (lake and ramp access, impact of other users, lake and area conditions, and management actions) were significantly related to the independent variables in this study. The suggested changes may provide improved information from which researchers could draw stronger conclusions in future studies. In the end, such information may help resource managers to better understand how visitors' attitudes and travel behaviors influence management perceptions for lakes in New England.

5.0 References

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