

## AN EXPLORATION OF HUMAN TERRITORIALITY IN FOREST RECREATION

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**Abstract:** Previous studies in human territoriality have focused largely on behavior in urban settings. It is only recently that researchers are examining this construct in the context of forest settings. This study was designed to assess the territorial responses of visitors to Bald Eagle State Forest in central Pennsylvania and explore the structure and predictive validity of a proposed territoriality scale. Results indicated the sample was relatively homogenous in terms of demographics but included consumptive as well as non-consumptive forest visitors. Further analysis demonstrated only limited support for an exploratory territoriality scale and suggested the need for further research into the meaning and structure of human territoriality in forest recreation settings.

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### Introduction

Resource-based recreation is often place-specific, and recreationists can develop strong bonds to favored places, as has been investigated with the place attachment construct. Another construct, human territoriality, may add to our understanding of human-place bonds in recreation and how these bonds relate to management issues.

Human territoriality has generally been studied in urban locations (Edney, 1976; Taylor & Brower, 1985). Applying the construct in the context of outdoor recreation is likely to require modification of existing measures and the development of new measures.

Human territoriality has been suggested to consist of three dimensions: place-specific cognitions; emotions; and,

behaviors (Taylor, 1988). Territorial beliefs may address social contact, autonomy, escape, perceived control, and responsibility for place. Territorial emotions may include positive affect toward a place and preferred conditions there as well as negative affect toward possible changes in conditions. On-site territorial behaviors may include responses to intrusions such as defense of occupied space and exercise of dominance over perceived outsiders. Off-site, territorial behaviors may include advocating for favored uses and management practices.

This study is an exploration of the territoriality construct in the context of forest recreation. The study was designed to measure territorial responses to "favorite places" in a state forest and test the structure and predictive validity of an exploratory scale incorporating Taylor's (1988) three dimensions of territoriality.

### Methods

In a year-long survey of visitors to a central Pennsylvania State Forest, participants were asked to identify a favorite place in the forest and answer a battery of fixed-answer and open-ended questions about their relationship to that place. Key variables in this study included respondents' identification of their favorite place, beliefs about managing their favorite place, satisfaction regarding forest management issues, and responses to an exploratory territoriality scale.

A total of 477 useable responses was received. Seventy-two participants (15%) identified large, undifferentiated areas (e.g., the trails, the mountains) as favorite places, and 405 (85%) identified specific sites. Because we were attempting to examine territoriality as it relates to a specific place, in our analyses, we used only the latter group.

Content analysis was used to examine the open-ended responses regarding beliefs about participants' favorite places. Primary categories were identified for each of the questions into which participants logically were grouped. Principle components factor analysis with varimax rotation was used to examine the structure and predictive validity of the exploratory territoriality scale. Correlation and chi-square statistics were then used to examine the relationship between the hypothesized dimensions of territoriality and responses to satisfaction and beliefs about forest management.

### Findings

#### User Characteristics

Respondents who identified a specific favorite place within the forest were generally white (98%), male (85%), long-time forest users (mean = 25 years), middle income (56% = \$30,000-\$79,000/year), and moderately educated (51% = more than a high school education). Approximately half of the respondents (46%) lived within 30 miles of the forest and their mean age was 47 years. Interestingly, Table 1 indicates that many members of this group identify both consumptive (e.g., hunting/fishing) and non-consumptive (e.g., hiking, viewing scenery, relaxing) as favorite activities.

**Table 1. The Most Important Activities in which Respondents Participate at Their Favorite Place**

| Activity                  | N   |
|---------------------------|-----|
| Hunting/fishing           | 357 |
| Hiking/biking/riding      | 208 |
| Viewing scenery/wildlife  | 145 |
| Relaxation/peace/solitude | 86  |
| Cookouts/picnics          | 48  |
| Camping                   | 47  |
| Motorized recreation      | 40  |
| Swimming                  | 35  |
| Being with friends/family | 19  |

Note: Respondents could list up to three activities.

#### Geographic Distribution

Locating all favorite places on a forest map indicated that these sites were predominantly in the valleys of the state forest near roads, and not in less accessible areas. Further examination revealed over 80% of the locations to be located near a stream, e.g., Penns Creek, Poe Valley Area, White Deer Creek Area, Cherry Run. This is typical of visitation to other public recreation areas where visitors are more likely to visit areas with water than those without if given the opportunity.

#### Beliefs about Favorite Places

Content analysis of open-ended responses indicated that the characteristic that made favorite places special most often was conduciveness to a particular recreation activity (Table 2). Not unexpectedly, the same characteristic was typically enjoyed most by participants' during their most recent visits to their favorite places. Other frequently identified characteristics of favorite places included privacy, quiet, memories linked to the site, and natural qualities. Both positive and negative characteristics of favorite places were related to the impact of other people. For example, opportunities for privacy, memories (often of other people), and encounters with others were important to more than one-third of the participants. In contrast, characteristics of favorite places that were enjoyed least included other's behavior, litter, and inadequate or intrusive maintenance.

The next set of questions centered on management issues and asked respondents to identify what they would keep the same, as well as what they would change, about their favorite place. Again, responses were analyzed for content and results are provided in Table 3. Interestingly, almost equal numbers of respondents indicated that the current wilderness quality and existing uses were the most important items to keep as suggested that facilities be improved and use patterns be modified. There appears to be two distinct groups in terms of this particular set of responses.

**Table 2. Content Analysis of Open-ended Responses about Favorite Places**

| Beliefs                                                                      | Percent     | N          |
|------------------------------------------------------------------------------|-------------|------------|
| <b>What makes this place special?</b>                                        | <b>100%</b> | <b>452</b> |
| Conducive to recreation activities                                           | 27.9%       | 126        |
| Privacy/Quiet                                                                | 21.9%       | 99         |
| Memories                                                                     | 15.3%       | 69         |
| Natural quality                                                              | 14.6%       | 66         |
| Convenience                                                                  | 10.8%       | 49         |
| Views/Scenery                                                                | 6.2%        | 28         |
| Encounters with others                                                       | 3.3%        | 15         |
| <b>What did you like most about your favorite place on your last visit?</b>  | <b>100%</b> | <b>422</b> |
| Conducive to recreation activities                                           | 33.2%       | 140        |
| Natural amenities                                                            | 27.2%       | 115        |
| Quiet/Private                                                                | 17.3%       | 73         |
| Views/Scenery                                                                | 13.5%       | 57         |
| Encounters with others                                                       | 6.2%        | 26         |
| Memories                                                                     | 2.6%        | 11         |
| <b>What did you like least about your favorite place on your last visit?</b> | <b>100%</b> | <b>245</b> |
| Natural constraints                                                          | 17.0%       | 83         |
| Other's behavior                                                             | 9.6%        | 47         |
| Litter                                                                       | 8.4%        | 41         |
| Inadequate maintenance                                                       | 5.7%        | 28         |
| Personal constraints                                                         | 5.1%        | 25         |
| Rules                                                                        | 2.9%        | 14         |
| Intrusive maintenance practices                                              | 1.4%        | 7          |

**Table 3. How Favorite Place Should Be Managed**

| Belief                                                  | Percent     | N          |
|---------------------------------------------------------|-------------|------------|
| <b>What would you keep about your favorite place?</b>   | <b>100%</b> | <b>219</b> |
| Wilderness quality                                      | 32.8%       | 72         |
| Existing maintenance                                    | 27.4%       | 60         |
| Existing uses                                           | 27.4%       | 60         |
| Accessibility                                           | 8.2%        | 18         |
| Existing rules                                          | 3.6%        | 8          |
| Quiet/peace                                             | .5%         | 1          |
| <b>What would you change about your favorite place?</b> | <b>100%</b> | <b>283</b> |
| Improve facilities                                      | 36.7%       | 104        |
| Modify use patterns                                     | 24.0%       | 68         |
| Modify nature management                                | 17.3%       | 49         |
| Enforce rules                                           | 11.3%       | 32         |
| Improve roads                                           | 10.6%       | 30         |

### Territoriality Scale Items

Exploratory factor analysis of an exploratory scale provided limited support for Taylor's three-dimensional (beliefs, emotions, behaviors) structure of human territoriality (Tables 4 & 5). The four items that loaded unambiguously on the first factor were emotional in nature as suggested by Taylor. However, the structure of the second and third factors was unexpected and unclear. Neither belief nor behavioral items loaded together consistently, and two items did not load strongly on any factor. Furthermore the internal consistency of the three hypothesized sub-scales as well as the three sub-scales suggested by the exploratory factor analysis was low, with Cronbach's alphas ranging from a high of .64 to a low of .27. Finally, the three sub-scales were tested as predictors of expectations regarding favorite places, satisfaction with

forest management, and responses to forest management issues, but no significant relationships were found.

### **Conclusion**

The first issue to examine is the lack of relationship between the territoriality scale and respondents' satisfaction and beliefs regarding management. The satisfaction and management items were measured with respect to the entire forest. However, the territoriality items were measured within the context of the favorite place identified within the forest. Satisfaction and responses to forest management issues may differ according to the level of geographic specificity defined. Thus, it may be that territoriality of a specific place does not provide insight regarding beliefs and behaviors relative to the broader context within which that specific place operates.

**Table 4. Factor Structure of Hypothesized Territoriality Scale Items, Their Factor Loadings and Reliabilities**

| Sub-scale                  | Sub-scale item                                                         | Factor Loading | Standardized Alpha |
|----------------------------|------------------------------------------------------------------------|----------------|--------------------|
| <b>Factor 1 (Emotion)</b>  |                                                                        |                | <b>.6431</b>       |
|                            | I have a lot of fond memories about this place.                        | .646           |                    |
|                            | I have a special connection to this place and the people that use it.  | .620           |                    |
|                            | This place means more to me than any other place I can think of.       | .591           |                    |
|                            | For me, lots of other places could substitute for this one.            | .568           |                    |
| <b>Factor 2 (Behavior)</b> |                                                                        |                | <b>.4275</b>       |
|                            | I know this place better than the people who run it.                   | .712           |                    |
|                            | I treat this place better than most other people that come here.       | .583           |                    |
|                            | I don't tell many people about this place.                             | .576           |                    |
|                            | I do (or would) bring my children to this place.                       | -.194          |                    |
| <b>Factor 3 (Beliefs)</b>  |                                                                        |                | <b>.3130</b>       |
|                            | People should be free to do whatever they want at this place.          | .678           |                    |
|                            | Managers need to restrict use at this place.                           | .672           |                    |
|                            | Everyone should be able to use this place.                             | .503           |                    |
|                            | People who have used this place longest should have priority using it. | .172           |                    |

**Table 5. Factor Structure of Territoriality Scale Items as Revealed by Exploratory Factor Analysis, Their Factor Loadings and Reliabilities**

| Sub-scale       | Sub-scale item                                                         | Factor Loading | Standardized Alpha |
|-----------------|------------------------------------------------------------------------|----------------|--------------------|
| <b>Factor 1</b> |                                                                        |                | <b>.5548</b>       |
|                 | I know this place better than the people who run it.                   | .712           |                    |
|                 | People who have used this place longest should have priority using it. | .591           |                    |
|                 | I treat this place better than most other people that come here.       | .583           |                    |
|                 | I don't tell many people about this place.                             | .576           |                    |
| <b>Factor 2</b> |                                                                        |                | <b>.6127</b>       |
|                 | I have a lot of fond memories about this place.                        | .646           |                    |
|                 | I have a special connection to this place and the people that use it.  | .620           |                    |
|                 | This place means more to me than any other place I can think of.       | .591           |                    |
|                 | For me, lots of other places could substitute for this one.            | .568           |                    |
|                 | I do (or would) bring my children to this place.                       | .533           |                    |
| <b>Factor 3</b> |                                                                        |                | <b>.2713</b>       |
|                 | People should be free to do whatever they want at this place.          | .678           |                    |
|                 | Managers need to restrict use at this place.                           | .672           |                    |
|                 | Everyone should be able to use this place.                             | .503           |                    |

In addition, as previously mentioned, the investigation of human territoriality in dispersed, non-urban settings, is still exploratory. More in-depth, qualitative data may be necessary in order to better understand this construct in the context of forest recreation.

Finally, this study may have masked patterns within individual groups (i.e., between consumptive and non-consumptive types of activities). Previous research on specific user groups such as anglers (Wickham & Zinn, 2001) suggests a stronger relationship between the territoriality construct and expectations. More information may be obtained for managers, particularly in this exploratory stage, if research is focused on specific user groups such as anglers or specific recreation sites such as campgrounds or picnic areas.

While not supported strongly by this study, other research suggests that the human territoriality construct can contribute to our understanding of outdoor recreation and recreationists' responses to management issues. However, additional research will be required to develop items that best capture the dimensions of the territoriality construct and clarify the relationship between territoriality and recreation.

## References

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