

# ENVIRONMENTAL MEANING - A CASE STUDY <sup>1/</sup>

April 30, 1974

David L. Groves  
Assistant Professor  
Division of Forestry and Wildlife Resources  
Virginia Polytechnic Institute and State University  
Blacksburg, Virginia 24061

and

Harvey Kahalas  
Assistant Professor  
Department of Management  
Virginia Polytechnic Institute and State University  
Blacksburg, Virginia 24061

## INTRODUCTION

In the shuffle to examine the environment - recreation interface, attitudes and behavior are the common elements studied. Katz (1960) has noted that to help explain variability in attitudes and behavior the functional nature of the environment should be studied; that is, the importance the individual attaches to an object or what pragmatic use he makes of it (meaning). This type of approach will give more insight if different frames of reference are used because similarities among objects will help isolate common threads to suggest generality of the phenomena observed.

This case study was undertaken to explore the meaning of recreational areas across a variety of frames of reference to isolate similarities and differences to suggest common threads for the development of definitional limits.

## STUDY AREA

The area chosen for the study was State College, Pennsylvania (12 minor civil divisions that are adjacent to State College) because this area has a diversity of recreational areas that provide a variety of dispersed types of recreation. One particular area, Game Lands 176, is of particular interest because it has multiple uses which are potentially of a conflicting nature. This type of

---

<sup>1/</sup> Funds for this study were provided by the National Rifle Association and Wildlife Management Institute in cooperation with the Pennsylvania Cooperative Wildlife Research Unit, The Pennsylvania State University, and the Pennsylvania Game Commission.

situation lends itself to the examination of environmental meaning because it permits the examination of a wide range of responses that are related to a specific and general area.

### SAMPLE POPULATION

The two populations sampled were a vested interest group; that is, the users and the general populations in the State College area. The four basic frames of reference were: (1) the users' perception of Game Lands 176, (2) the users' perception of public forested land in the State College area, (3) the general population's perception of Game Lands 176, and (4) the general population's perception of public forested land in the area. Through such a design, it was possible to examine the generality of the phenomena of environmental meaning and to suggest the feasibility of a functional approach as a possibility to explaining the variability in attitudes and behavior research.

### TYPOLGY

Gibson (1950) has identified four theoretical positions that can be developed into a typology for the description of meaning. These four categories are: (1) concrete-tangible results of the land being there in its present condition (higher taxes, firearm noise, etc.)—rational; (2) use-utility of the land being there in its present condition (for hiking, bird watching, etc.)—real; (3) emotional-intangible results of the land being there in its present condition (aesthetically pleasing, invigorating, etc.)—emotional; (4) symbolic-intangible results that represent more than is seen; represents or suggests something else (freedom, bygone years, etc.)—abstract.

In an effort to identify items, open-ended questions were used in a preliminary survey and individuals were asked about the importance of recreational areas (Game Lands 176 and public forested land) using a "how" and "why" question format. The question format centered on identifying how these areas were unique and if they had any special meaning to the individual, especially with regard to the isolation of the tangible and intangible results of the experience or the land being there in its present condition. When analysis was performed on the opened responses, it was found that Gibson's taxonomy was indeed a good system for characterizing the recreational areas because all the responses could be characterized on a mutually exclusive basis. Results from the preliminary analysis also indicated that the taxonomy could only differentiate three points along a continuum: negative, neutral, and positive. The preliminary meaning survey allowed for the development of response distributions and criteria for the follow-up survey. The follow-up survey was designed around "how's" and "why's" of the experience or the land being there in its present condition.

## SAMPLING AND INTERVIEWING

A proportionate, stratified random sampling technique based on demographic variables was used. Proportions were established using 1970 Census data. The sample was identified through the Centre County tax records and The Pennsylvania State University directory. The users of Game Lands 176 were identified and proportions were established, using a sampling technique that was developed by James and Henley (1968). The sample size was 60 in both the user and general populations. Eighteen percent of the general population sampled were users. The interviewing procedure was similar to an instrument developed by Harvey (1970). This approach was designed around the use of "how" and "why" probing questions. A tape recorder was used in the interview and judges were used to help quantify the responses. Reliability of the interviews and judge consistence was tested in a test-retest design. It was found that there was not a significant difference between the tests at the 0.05 probability level using a t-test for related samples.

## RESULTS

The two basic questions that must be answered are: (1) what are the relationships among the meaning components and (2) are there any common dimensions or threads among the meaning components across the different frames of reference. Factor analysis (principal component and Varimax methodologies) were used to obtain an indication of the underlying dimensions of environmental meaning and which components are highly interrelated. A distribution of the environmental meaning typology was used to obtain an indication about the meaning trends across different frames of reference.

Results from the factor analysis of meaning indicated that there were two factors in each frame of reference and that these factors were of a concrete-use dimension and an emotional-symbolism dimension. The only exception to this trend was in the public forested land-user frame of reference. In this situation use was associated with both factors 1 and 2 and was therefore deleted from the analysis. (Table 1)

The distribution of meaning scores by frames of reference indicated that the meaning components are positive. The only exception was a trend toward the neutral category in the Game Lands 176-user frame of reference of the concrete and use components. The concrete, use, and emotional dimensions of the users in the Game Lands 176 and public forested land frames of reference indicated that more users had positive scores than individuals in the general population. The concrete and use dimensions of the general population indicated that the concept of public forested land had a greater positive meaning than the concept of Game Lands 176. In fact, Game Lands 176 tended to have an almost complete neutral meaning to the general population

in terms of the concrete and use dimensions. The emotional component of the general population indicated that Game Lands 176 and public forested land had a positive meaning to the general population. The score patterns with regard to symbolic element was the same as in the emotional element except there were fewer positive user scores across the Game Lands 176 and the public forested land frames of reference. (Table 2)

Table 1  
Factor Analysis of Meaning Components

Meaning	a. Game Lands 176 - Users			b. Public Forested Land - Users			c. Game Lands 176 - General Population			d. Public Forested Land - General Population		
	Factor 1	Factor 2	h <sup>2</sup>	Factor 1	Factor 2	h <sup>2</sup>	Factor 1	Factor 2	h <sup>2</sup>	Factor 1	Factor 2	h <sup>2</sup>
Concrete	0.153	0.790	0.649	-0.119	0.893	0.812	-0.081	0.945	0.899	0.238	0.886	0.842
Use	-0.095	0.862	0.752	0.422	0.684	0.651	0.182	0.930	0.898	0.024	0.939	0.882
Emotion	0.896	-0.083	0.810	-0.908	0.076	0.831	0.957	0.028	0.917	-0.919	-0.210	0.889
Symbolism	0.842	0.146	0.730	-0.868	-0.222	0.802	0.970	0.069	0.946	-0.958	-0.048	0.920
Variance	1.544	1.396		1.770	1.325		1.898	1.762		1.819	1.713	
Percent	52.5	47.5		57.2	42.8		51.9	48.2		51.5	48.5	

Table 2  
Distribution of Meaning Components by Frame of Reference

	Concrete				Use				Emotion				Symbolism			
	GL 176-Users		GL 176-GP		GL 176-Users		GL 176-GP		GL 176-Users		GL 176-GP		GL 176-Users		GL 176-GP	
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
1. Negative	15	2	12	3	7	5	2	5	2	2	5	3	5			
2. Neutral	22	65	22	43	22	65	22	43	27	45	28	47	38	47	43	47
3. Positive	63	33	67	53	72	30	77	52	73	53	72	52	57	50	57	48

## IMPLICATIONS

Many assumptions have been made about environmental meaning, especially the emotional and symbolic components. These assumptions usually explicate to what degree these components are the overriding elements in influencing attitudes and behavior. These assumptions should be dispelled with empirical research so that some indication about the importance of these and other dimensions of the environmental meaning can be understood and utilized to help explain variability in attitudes and behavior. The first two steps in such a process are to isolate underlying dimensions and relationships among components and common threads among a variety of frames of reference from a specific to a general condition.

Results of the factor analysis suggest that meaning is a dichotomy across all frames of reference between tangible and intangible results of the experience or the land being there in its present condition. These are the elements or factors that determine worth of the land to the individual. Therefore, comparisons with regard to environmental meaning should be made within this tangible-intangible dichotomy.

Examination of the distribution scores suggests the importance of positive concrete and use meaning scores to the users. Both the specific and general concepts of dispersed types of recreation areas have a similar concrete and use meaning to the users. The more general concept of public forested land has a much greater meaning to the general population than the specific concept of Game Lands 176. The more broad based types of forest recreation that represent a variety of activities are the elements that are appealing to the general population, whereas all forms and types of recreation appeal to the users of Game Lands 176. The particular dimension of concrete and use also has a more specific implication because these elements or dimensions of meaning are attached to specific activities and areas that require certain types of development; that is, the individuals with this type of orientation are centered more on the physical outcomes of the facilities provided. This suggests that the tangible outcome quality of facilities is a basic dimension that determines overall worth of the recreational meaning.

The emotional and symbolic dimensions of the environmental meaning suggest that there are more users with positive scores than the general population. This trend is especially true with regard to the emotional element. The emotional component in some instances must be associated with the concrete and use dimension. Therefore, the meaning of the experience or the condition of the land to some of the users is a three dimensional element; that is, concrete, use, and emotional elements. The symbolic component seems to be an element that may develop only under certain conditions. The emotional and symbolic elements in this particular circumstance seem to be consistent across all frames of reference, suggesting that there is no difference between the specific and general concepts. Worth in the particular instance is not a function of activities and facilities but the intangible outcome qualities of the land. Therefore, the recrea-

tional areas in this particular instance serve as a release or escape mechanism, a fulfillment mechanism, etc. In other words, it has some association with some other point in the individual's life and will positively or negatively affect the mental well-being of the individual significantly because the experience or the land will have an impact upon another part of the individual's life.

These results and implications are not meant to be definitive but are only suggestive of the type of associations and research that is needed to add perspective to attitudes and behavior variability. This type of information will provide perspective with regard to the larger context and suggest stratifications within attitudes and behavior dimensions. This study suggests one major type of stratification, a tangible and intangible outcome dimension. It suggests further that these components are the elements upon which worth of the experience or the land is based. This study postulates findings for future studies but the typologies must be refined and different populations sampled before the results have any general implications. The next step in this type of research is trying to isolate elements associated with each of the dimensions so that greater understanding of the formation process can be obtained.

#### REFERENCES

- Gibson, J. J. *The Perception of the Visual World*. Boston: Houghton-Mifflin Company, 1950.
- Harvey, O. J. *Belief Systems and Education: Some Implications for Change*. In J. Crawford (Ed.), *The Affective Domain*. Washington, D. C.: Communication Service Corporation, 1970.
- James, G. A. & Henley, R. *Sampling procedures for estimating mass and dispersed types of recreation use on large areas*. U. S. Forest Service Research Paper SE 31. Asheville, North Carolina: Southeastern Forest Experiment Station, 1968.
- Katz, D. *The functional approach to the study of attitudes*. *Public Opinion Quarterly*, 1960, 24(Winter), 163-204.