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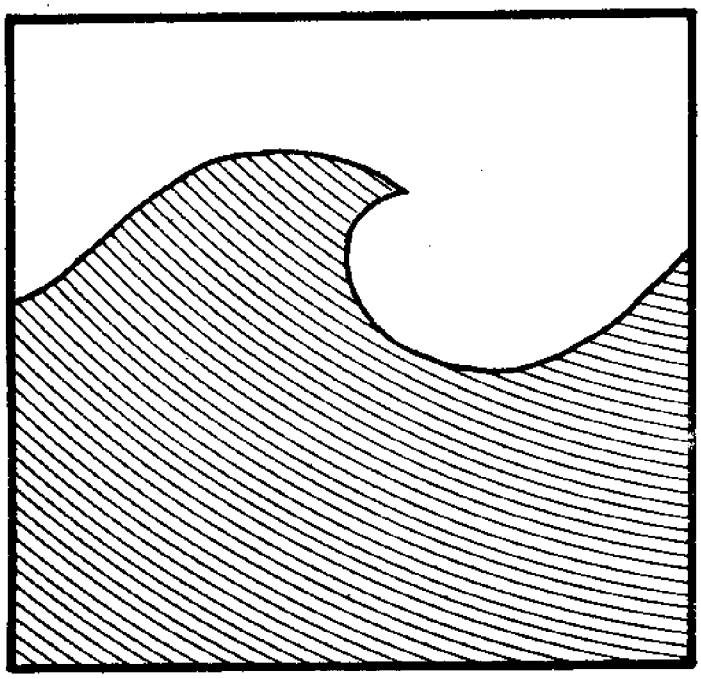
AUTHOR: SARAH HASKETT

VISUAL QUALITY OF THE COASTAL ZONE



SEA GRANT PROJECT

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VISUAL QUALITY OF THE COASTAL ZONE

- WORKING PAPERS -

New York's coastline comprises a wide spectrum of visual environmental character, ranging from the aesthetically pleasing to the physically revolting. Natural processes over time, modified to varying degrees by human activities, have produced unique regional characteristics central to the quality of life of both permanent residents and seasonal visitors. While high aesthetic quality may occur in man-dominated as well as in undisturbed natural environments, thoughtless coastal development often destroys natural scenic values and creates visual horrors.

The vital importance of protecting and enhancing aesthetic values is widely recognized. Public concern has been translated into legislation, such as the National Environmental Policy Act of 1969 (NEPA) and the Coastal Zone Management Act of 1972, requiring that aesthetic values be duly considered along with ecological, cultural, economic and other values in land use decisions. State, regional, and local directives concerned with environmental quality concur. The need for action is clear, but defining, evaluating, and managing the vulnerable visual quality of our coastal zone is highly elusive.

In November 1974, the New York State Sea Grant Institute awarded a grant to the School of Landscape Architecture, SUNY College of Environmental Science and Forestry, Syracuse, N.Y., to investigate the issues of visual quality pertaining to the New York State's coastlines. The long range objective is to provide practical methods by which coastal managers can evaluate visual quality and integrate these findings into land use decisions. The project's initial steps have included the preparation of a series of working documents, intended to provide background information on the subject and to elicit responses from selected readers.

1974-75 Research Staff

Faculty Investigators
- David B. Harper, Research Associate, Project Director
- John P. Felleman, Assistant Professor
- Christopher W.A. Macey, Assistant Professor
- Thomas J. Nieman, Assistant Professor

Graduate Trainees
- Sarah Haskett
- Margaret A. Ross
- Richard Viohl, Jr.

EVALUATING VISUAL QUALITY OF THE COASTLINE: SOME SIGNIFICANT ISSUES

by Sarah Haskett

Evaluation of the visual quality of the coastline requires an understanding of some basic concepts. The central concept embraces the nature of visual quality: What constitutes it? Which landscapes possess it? Which landscape components contribute to it? The complexity of defining aesthetics or visual quality, as it is reflected in the literature, is considered. Both psychological and physical influences on individual evaluations of visual quality in the landscape are reviewed and discussed. The unique aesthetic attractions of water are considered and some of the visual aspects of coastal zone boundary definition are presented. Finally, the significance of these considerations as background for evaluating visual quality in New York's coastal zone is indicated.

Complexity of Aesthetics

The importance of aesthetics in influencing environmental quality has been recognized by both public and private spheres. The National Environmental Policy Act of 1969 (Public Law 91-190), makes the Federal Government a central participant in environmental quality protection. One of the goals enumerated, to "assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasuring surroundings," makes aesthetic quality protection a national policy objective (Sec. 101, b, 2). The act further instructs all Federal agencies to "identify and develop methods and procedures in consultation with the Council on Environmental Quality...which will insure that presently unquantified environmental amenities and values

may be given appropriate consideration in decision-making along with economic and technical considerations" (Sec. 102, b).

In relation to coastal areas, the Coastal Zone Management Act (1972) finds that "important ecological, cultural, historic, and aesthetic values in the coastal zone which are essential to the well-being of all citizens are being irretrievably damaged or lost; special natural and scenic characteristics are being damaged by ill-planned development . . . ." (Sec. 302, e, f). This act encourages states to give "full consideration" to these values in coastal management programs (Sec. 302, b).

Aesthetic determinants of environmental quality have been recognized as significant areas of study by researchers in several fields-- sociology, psychology, and planning among them. As a group, psychologists have contributed most studies on environmental preferences, with an emphasis on the visual sense (Rapoport and Kantor, 1967, p. 214). The importance of aesthetic quality has revolved around the idea that people receive psychological benefit from viewing, inhabiting, or otherwise experiencing aesthetically attractive areas. Of six basic human needs outlined by Maslow (1954, cited in Lang, et al. (eds.), 1974, p. 84), the aesthetic need, or desire for beauty, is included among other psychological and physiological requirements. Beyond psychological recognition, the need for aesthetic stimuli has been expressed philosophically by several writers (e.g., Tuan, 1974; Lowenthal, 1962).

Although research and policy statements emphasize the importance of aesthetic evaluation in environmental management, actual application has been limited. The complexity of aesthetics creates varying interpretations regarding the best methods of inquiry, analysis, and

integration of aesthetic criteria. "Except within the vaguest limits," according to Newton (1959, p. 12), "beauty cannot be described: therefore, it cannot be defined. It cannot be measured either in quantity or quality: therefore, it cannot be made into the basis of a science". His frustrations in dealing with the subject on a strictly verbal basis portend the difficulty in integrating judgments on aesthetic quality into planning practice.

Attitudes toward what constitutes aesthetic quality have changed throughout history (Johnson and Huff, 1966, p. 9). Currently, natural landscapes are often considered more aesthetically pleasing than man-dominated environments. But this view "is an esthetic abberation in the history of landscape taste. . . . In most canons of landscape beauty, man and his works occupy a prominent place" (Lowenthal, 1962, p. 20). In addition, standards used today for judging the aesthetic quality of landscapes and townscapes differ according to the degree of human influence in the environment, regardless of whether the individual prefers naturalistic or human dominated landscapes. "Men do indeed view natural objects in ways distinctive from artificial objects" (Kates, 1966, p. 21).

Other problems arise in determining aesthetic quality. In one opinion, scenic beauty is not an inherent quality in a specific landscape element. It is, rather, a pleasurable state of mind which is experienced upon viewing the landscape. Therefore, to analyze beauty it is necessary to study the effect of certain landscapes on individual states of mind (Newton, 1959, pp. 12-15). But here a new problem arises: If aesthetic quality is to be judged by people's responses to the environment, which people should be questioned? Which individuals'

perceptions more accurately reflect the "right" standards for judging visual quality? Should the perceptions of the majority be accepted, or should the considered opinions of professional designers and planners prevail in such an assessment?

Beyond the presence of multiple perceptions to confuse the issue, each individual's perception is influenced by a complex of interrelated factors, both physical and psychological. These determinants are discussed later in this paper, but it should be noted here that it is the multitude of inputs influencing visual quality, together with the elusiveness of those factors relating to the observer's psyche, that complicates the nature of aesthetics.

Despite the complexities associated with aesthetic quality, there have been various attempts to quantify the visual component of aesthetic quality, arising from the physical landscape (Coomber and Biswas, 1973). Of all influential components, the physical setting as seen by the observer has the greatest influence on environmental quality perception. This situation exists because, "man is more consciously dependent on sight to make his way in the world than on the other senses. He is predominantly a visual animal" (Tuan, 1974, p. 6). According to Victor and Rock (1964, cited in Rapoport and Kantor, 1967, p. 214), the visual sense is dominant over the other senses when a conflict develops.

The visual message clearly is the most comprehensible input in scenic quality determination. The physical environment is more easily quantifiable and less capricious than factors relating to the observer's psyche. From a planner's viewpoint, measurements of the physical environment are more adaptable to planning efforts than determination of

individual environmental perceptions. For these reasons, this study emphasizes the visual message, or physical situation, as it influences visual quality in the landscape.

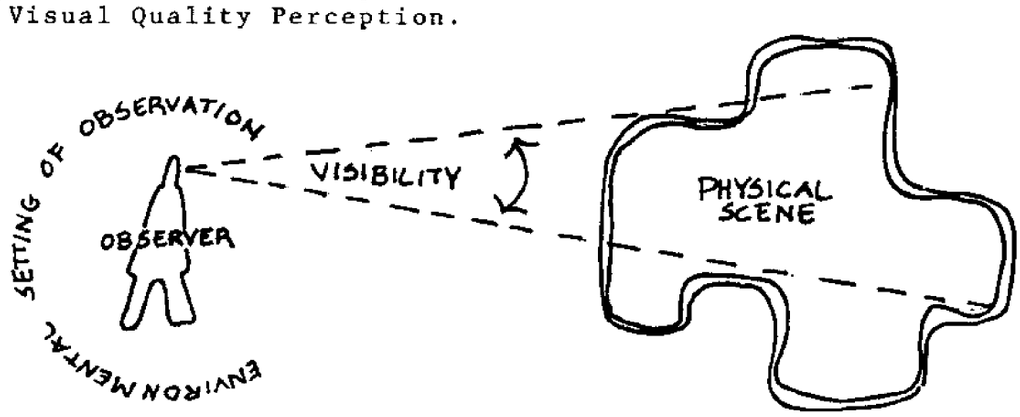
Visual Quality Influences

Visual quality in the landscape is directly related to the nature of the visual message, or the physical scene, as perceived by the observer. The character of the physical scene and the visibility of the scene from the observer's perspective constitute the visual quality influences of primary interest in this study. However, the disposition of the observer and the environmental setting of the observation are also influential in the perception of visual amenities. Broadly speaking, components of visual quality perception can be categorized as follows:

1) visual components
   a) physical scene
   b) visibility of scene from observer's perspective
2) non-visual components
   a) disposition of the observer
   b) environmental setting of observation

Figure 1 illustrates the relationships between the components.

Figure 1. Model of Components of Visual Quality Perception.



Non-visual Factors

Understanding the components relating to the observer and the context of his observation necessitates a preliminary discussion of communications theory. Mental processes in communications have been defined by Lang, et al. (1974, p. 84), as perception and cognition, perception being the "process of obtaining or receiving input", and cognition the "throughput function, involving processes of thinking, remembering, and feeling". The mental processes of perception and cognition result from the communication of a visual message from its source, e.g., a landscape scene, to its destination, the observer. The ways people perceive and think about the landscape have a profound effect both on landscape preferences and on subsequent behavior in and treatment of the environment.

The processes of perception and cognition are affected by modifying forces pertaining to the environmental setting of the observer and the observer's state of mind. According to Lang, et al. (1974, p. 85), behavioral processes are modified by (1) organismal (physical or physiological), (2) personality, (3) social group, and (4) cultural factors. An individual's past experiences can be added to this list. In Tuan's words, "truth is subjectively embraced as part of one's total experience and outlook" (Tuan, 1974, p. 61). All of these factors relate to the observer; the psychological factors are referred to by Litton as an individual's "environmental disposition", or his attitudes, beliefs, and values pertaining to the environment (Litton, et al., 1974, p. 297). In addition to environmental disposition and physical composition (age, sex, health, etc.), motivation and purpose in the environment influence perception. This motivation is significant, because what an individual

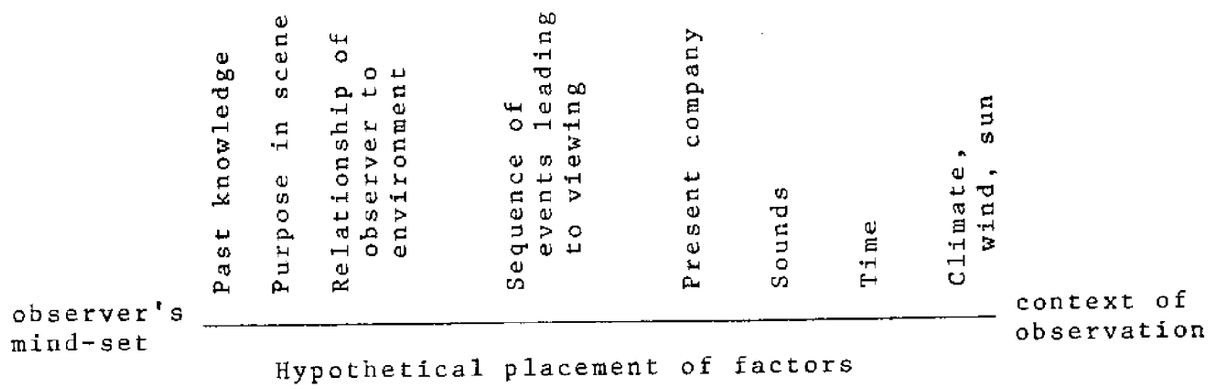
attends to in an environment depends on his purpose there (Ittelson, 1970, p. 812). Attentiveness and purpose in the environment range from the tourist's visual awareness and holiday-mind-set to the native's habitual relationship with place derived from long-time association.

Illustration of purpose in a scene as influencing environmental evaluation is afforded by the early American setters' fear of the wilderness (Tuan, 1974, p. 63). Cultural background and past experience made little difference in coping with the life and death situation on the frontier. Attitudes toward environment changed, however, in emerging upper classes who viewed wilderness from a distance as exciting and awe-inspiring, while lower classes, still struggling against the elements, retained their fears. Thus purpose in and relationship to the environment, as well as past experiences and background, have a profound effect on visual quality perception.

In communications theory, factors which interfere with mental processes or the transmission of a message from the source to its destination are called noise (Kemp, 1963, p. 11). Components discussed above can be described as "internal" noise relative to the observer's psyche. External noise derives from the circumstances surrounding the viewing of a scene, or the environmental setting of the observation. Climatic and temporal factors such as wind, sun, temperature, season, and time of day contribute to the environmental context of the observation. Sensory inputs of a non-visual nature-- sounds, tastes, feeling-- contribute to external noise. Considering present-day preferences for natural landscapes, mechanized sounds of motors or machinery might adversely influence visual quality preferences, while sounds of surf and shorebirds might contribute to preferences.

These non-visual influences on visual quality can be expressed as a continuum of influential factors ranging from those that are a function of the external context of the observation to those purely a function of the observer's mind set.

Figure 2. Continuum: Non-visual Components of Visual Quality



Hypothetical placement of factors

The positions of the non-visual influential factors on the continuum illustrated above may vary, depending on the ability of the viewer's mind to influence his preferences. Exact positioning of factors on the continuum is beyond the scope of this paper. The significant point is that such a range of factors does exist, and the relative importance of the factors is determined by their impact on the viewer. Every individual prefers certain elements to others in the landscape, and this preference is registered through the mental processes of perception and cognition.

"Environments are always multinodal", states Ittelson (1970, p. 811) and this variety produces richness in environmental experience. Perception of the non-visual components listed above influences the visual quality of the coastal zone environment. However, the multitude of factors makes difficult the evaluation of just what influences the

perception of visual quality. In addition, the impact of any of these non-visual components at a given instance is difficult to measure because of their capricious natures (Coomber and Biswas, 1973, p. 37). Despite these complexities in evaluating the significance of non-visual components, their importance is recognized. Recognition of their existence as well as their potential significance in influencing perception in requisite in understanding the nature of visual quality in the landscape.

The Visual Message

Characteristics of the physical landscape which influence visual quality have been variously categorized by researchers. Generally, there are two scales of characteristics influencing visual quality: the landscape features, or elements, on a small scale and the dimensions of those elements on a larger scale. Landscape elements are physical features of the environment that are either naturalistic, man-made, or exhibiting both natural and man-made characteristics. The range of landscape elements can be expressed as a continuum between the extremes of purely natural and entirely man-made features. Included in natural features are all unaltered landforms such as hills, valleys, plains; water edge features such as bars, spits, points; water features such as ponds, bays, rivers, and marshes. Man-made features are structures and artificially-surfaced areas. Houses, industrial plants, roads, and parking lots belong to this category. Features falling within the continuum include tilled fields, filled marshes, and cut dunes; their location on the continuum depends on the degree to which human alteration is apparent.

Beyond these individual elements, combinations of elements work together to create a physical setting or scene. The observed relationships

between elements, referred to here as dimensions of elements, are major determinants of visual character (Zube, et al., 1974; U.S. Dept. of Agriculture Forest Service, 1973; Litton, et al., 1974). A wide variety of terms is used to describe these dimensions, including complexity, variety, contrast, diversity, unity, harmony, rhythm, and balance.

Beyond elements and their dimensions, a third set of physical environment characteristics, referred to here as landscape properties, contribute to visual quality (U.S. Dept. of Agriculture Forest Service, 1973; Newby, 1971). As descriptive attributes of elements, landscape properties can either be intrinsic, acquired, or interpreted. Width, height, color, texture, edge definition, and degree of pollution are a few landscape properties (See Figure 3).

Figure 3. Partial List of Components of Physical Settings Which Influence Visual Quality

I. Landscape Elements:

- Landforms
- Vegetation
- Water forms
- Shoreline forms
- Structures
- Groups of structures
- Paved surfaces
- Open spaces

II. Landscape Dimensions:

- Complexity, variety diversity, incongruity surprisingness, mystery ambiguity
- Contrast, deviation
- Vividness, uniqueness
- Unity, harmony congruity
- Rhythm, balance, scale

III. Landscape Properties:

- Breadth
- Height
- Width
- Texture, grain
- Color
- Degree of pollution evident
- Degree of naturalness
- Degree of urbanization
- Edge fefinition

Environmental preference studies concur on the existence of certain dimensions which, when exhibited by many elements working together, create visually pleasing landscapes. Birkhoff (1933, in Coomber and Biswas, 1973, p. 35) developed a formula for measuring the degree of aesthetic quality in the landscape. His formula, M = f(o/c), expressed the belief that aesthetic measure (M) is a function of the ratio of order (o) of the object and its complexity (c). Rapoport and Kantor (1967) proposed that each individual has an optimal rate of perceptual input which enables him to give meaning to his environment. More complex, ambiguous patterns are preferred according to this hypothesis because they help to achieve this optimal perceptual rate. Similarly, the "adaption level theory" (Helson, 1964; Wolhill, 1966) holds that the optimum level of positive stimulation derived from an environment is influenced by the degree to which that environment varies from the norm, or the adaptation level. To a certain extent, deviation from the norm is pleasurable, but there is a threshold of deviation which, if crossed, produces sensory overload and unpleasantness for the viewer.

Cullen (1961) expresses this preference for controlled variety in the environment with the belief that the essential element for urban design is variety within a pattern. "Whatever the reason", claims Lowenthal (1962, p. 22), "most people expect a measure of visual harmony in landscapes", but order must present a measure of complexity in order to be interesting. "Without the pattern we have chaos: without the variety, monotony" (Rapoport and Kantor, 1967, p. 218). Though researchers have generally agreed on the significance of complexity in influencing preferences (Sanoff, 1974; Craik, 1970), terms used to describe this dimension vary considerably ("surprisingness" and

"incongruity" in Berlyne, 1960; "mystery" in Kaplan, R., 1973). "The variety of terms used by different investigators shows the difficulty (in labeling the dimension), but the common factor seems to be an open-ended or indeterminant quality to the stimuli, which can be covered by the term ambiguity" (Rapoport and Kantor, 1967, p. 215) (see Figure 3).

The above description has treated complexity in spatial terms, but complexity can also relate to temporal changes in stimulus variability (Dember and Earl, 1957, cited in Rapoport and Kantor, 1967, p. 215). This extended meaning of complexity links the discussion to the other group of physical factors which influence visual quality, the visibility of the environment from the observer's viewpoint. The viewer's visibility is influenced by whether he is stationary or moving. If stationary, preferences can be influenced by the presence or absence of panorama, view, vista, enclosure, and site distance. If moving, the speed at which features are passed can influence visual preferences. At higher speeds, simpler visual patterns become more complex, thereby influencing perception of and preference for environments (Rapoport and Kantor, 1967, p. 217).

The Aesthetics of Water

The presence of water is central to man's existence. Through the years, water has been used for thirst-quenching, physical hygiene, irrigation, transportation, and power generation. Beyond these physical and technological purposes, water has served the recreational and aesthetic needs of man. "Whether the environment is being used for work, for play or habitation there is an enrichment of place by its presence" (Litton, et al., 1974, p. i).

That water possesses aesthetic value is recognized. In recent

studies of people's perceptions of scenic resources, presence of water has figured as a positive visual element in the landscape (Zube, "Scenic...," 1973; Fines, 1968). "Involved in (scenic resources) are the water surfaces, running or still, salt or fresh, natural or artificial, that enter into many of our most attractive landscapes" (Linton, 1968, p. 223). Difficulty arises, however, in determining just why water contributes to aesthetic quality in a given scene. Sources reviewed agree that the aesthetic quality of water derives from either its physical properties or from the images it evokes.

In regard to physical properties, the "uniform coverage of an area" is a distinctive quality which can lend aesthetic value to a scene (Litton, et al., 1974, p. 76). Uniform coverage produces harmony in a scene; if bounded by an irregular shore or intermittent vegetation, water areas possess both dimensions of attractive landscapes: unity and variety. Movement is another property which contributes to aesthetic quality. Movement implies change, and the paradox of change of form amidst constancy of content is a basic quality of water. "Its playful, changeable range runs from the breathtakingly theatrical to the mysteriously subtle" (Huxtable, 1962, p. 11). This changing constancy of water also satisfies the unity/variety dichotomy of visually pleasing areas.

Appearance of water is another potentially aesthetic quality. Appearance is a composite of "fluidity or liquidness, clarity and color, and capacity to reflect light and images" (Litton, et al., 1974, p. 83). Fluidity of substance gives water an ephemeral, ethereal quality, a fleeting beauty which is more precious than permanent, tangible loveliness (Huxtable, 1962, p. 11). Clarity is often interpreted as purity or freedom from pollution. Clarity and color combined, because of their

striking appearance and attendant associations of absence of inpurity, make for aesthetically pleasing scenes (Litton, et al., 1974, p.83). The capacity of water as an image and light reflector heightens visual stimulation and mystery in a scene where water is present. In addition to appearance, water's "intimate connection with life" in the forms of vegetation and animals influences visual quality by introducing contrasting live elements in the water (Lynch, 1962, p. 210).

Cultural mores and societal values have directed the use of water for non-essential aesthetic purposes throughout history. In the 17th century, called by Huxtable (1962, p. 12) the "Age of Water", lavishness and overstatement of baroque taste prompted the use of water as a dynamic, moving element in the forms of cascades, streams, jets, sprays, pools, fountains, and artificial displays of all kinds. In general, Western European tradition emphasized water in motion, while Eastern aestheticism dictated the use of gentle, placid water for visual displays. Speaking of Japanese and Chinese lakes and gardens, Huxtable says, "The effects they created were artfully natural and heavy with symbolism" (Huxtable, 1962, pp. 12-15).

The symbolic quality of water has been recognized by past cultures and their interpreters. The ancient Greeks emphasized miracle and myth as associated with water. "As decoration, water has been used for visual, oral, or tactile effects, but its power may often be observed to go deeply beyond the casual impression" (Tunnard, 1939, p. 100). Beyond sensory stimulation, water can "evoke moods of gaiety, serenity, sorrow, mystery, majesty, contentment, or sheer voluptuousness" (Lynch, 1962, P. 211). This range of moods indicates the extent of symbolic association connected with water. Moving water may symbolize life and fertility, change, or freedom. Still water may symbolize harmony between

the elements, rest and contentment, or contemplation. Clean water may symbolize purity, health, or sterility (Tunnard, 1939, pp. 100-101; Lynch, 1962, p. 211).

As these properties enhance aesthetic quality, so the evidence of human impact on water in an otherwise naturalistic landscape usually degrades aesthetic quality. Modification in the flow or configuration of water and the visual presence of pollution are the most common evidences of human intervention (Litton, et al., 1974, pp. 84-85). Intrinsic water properties and the symbolic images evoked through sensory contact with water contribute to positive aesthetic quality in the landscape.

Illustrative Examples

In some scenic quality evaluation studies, ranking of landscapes has been attempted. According to one researcher, there is considerable agreement on landscapes which rank either very high or very low in visual quality terms (Zube, "Rating Everyday...," 1973, p. 372). Landscape of less distinctiveness which fall within the middle range of the spectrum from high to low quality tend not to generate as much agreement. According to Newton, (1959, p. 21), "certain phenomena are fairly universally recognizable as more pleasurable than others". It is interesting to note here the results of one scenic evaluation study: visual quality within a rural setting is a "function of landform or relative relief, land-use diversity, and degree of naturalism" (Zube,"Rating Everyday...," p. 373). In other words, landscape elements working together to exhibit the most attractive combination of principles discussed above determine visual character.

Examples of visually pleasing and displeasing landscapes will help to illustrate the impact of the inputs discussed above. Holding the non-visual factors constant, the spectrum of preferred landscapes becomes

discernable. Naturalistic landscapes will be compared to avoid the influence of "degree of urbanization" in determining visual quality. It should be recalled that naturalistic landscapes, in general, are preferred over man-dominated ones (Kaplan, Kaplan, & Wendt, 1972; Zube, "Scenic...," 1973; Lowenthal, 1962).

A pleasing landscape in the coastal zone would be one which exhibited contrast among elements, yet possessed cohesiveness to the point that no element seemed incongruous to the setting. This type of environment might be afforded by a combination of rock cliffs, vegetation, intermittent areas of sandy beach, and clear blue water. A landscape falling in the middle of the spectrum from high to low might exhibit little variety in pattern. A continuous, gently rolling shoreline, broken only by slight dunes or sparse vegetation, and undefined uses of the land behind the beach, might comprise such a landscape. An environment of low visual quality would exhibit no variety or visual stimulus to the viewer. Absence of topographical change, vegetation, or distinction of any kind, an undeviating, linear shoreline might constitute an environment of low visual quality.

Coastal Zone Boundary Definition

Coastlines under study include the Lake Ontario and Lake Erie shorelines within New York State, the entire Long Island shore (Sound and South Shore), and coastal areas within New York City. In addition to this linear delineation, the coastal zone has three boundaries which determine its width and height at a given point along the shoreline: (a) a land boundary, measured inland from the shoreline; (b) a water boundary, measured outward from the shoreline; and (c) a vertical boundary, measured by the height above water level of the tallest element in the coastal zone.

According to guidelines prepared for Federal approval of state coastal zone management programs, the coastal zone is composed of both land and water resources (Wise, et al., 1973, p. 41). Generally, the coastal zone is said to include coastal waters, adjacent shorelands, transitional and intertidal areas, salt marshes, wetlands, and beaches. Based on the Coastal Zone Management Act of 1972, the report further defines the coastal zone as extending "inland from the shorelines only to the extent necessary to control shorelands the uses of which have a direct and significant impact on the coastal waters" (Wise, et al., 1973, p. 41). From these descriptions, two boundary identification determinants can be established: (a) biological and physical characteristics, and (b) shoreland use impact on coastal areas. Beyond these physical and use characteristics, institutional demarcation lines, such as town lines and recreation area borders, also influence coastal zone boundary location.

In terms of aesthetic quality, coastal zone boundaries are determined by the complex interaction of physical and perceptual variables. Both natural landscape elements, such as landforms and vegetation, and man-made elements like buildings, roads, or plowed fields are physical determinants of boundary location. The significance of any of these elements in influencing boundary location depends on their collective capabilities to provide edge definition. A plowed field may influence boundary location only if bordered by a tree stand, a group of structures, a hill, or some other landscape element which defines its edge. Elements working together produce visual edges which influence boundary location.

Perceptual factors other than sight are also important in influencing boundary definition. Included in this category are the sensory faculties

of sight, sound, smell, and their attendant associations of proximity to the shore. For the purposes of this study, non-visual, perceptual stimuli are de-emphasized in favor of visual stimuli as primary influences of boundary location.

Linkage to Research

The coastal visual quality research program has as its primary goal for 1975 the development of a research program on coastal aesthetics for New York State. The research program will be directed toward devising an appropriate method or methods for assessing visual environmental quality along the coastal zone. To this end, methods for studying visual quality must be evaluated in terms of their applicability to the coastal zone.

Identifying the inputs which determine visual quality is one of the first steps in evaluating the visual quality of the coastal zone. Of the inputs described above, the physical characteristics of the coastline, specifically the landscape elements, are being emphasized in this project. On a regional scale, classification of physical landscape types based on natural and man-made elements is in progress. Beyond a broad classification, representative sections of the landscape types are being inventoried to determine the spectrum of visual environmental stimuli. Additionally, identification of coastal zone user groups and sampling of their attitudes on visual quality will supplement the physical characteristics inventory.

One of the aims, then, of this research project is to determine which methods have the greatest applicability to the analysis of coastal visual quality. Inventorying representative sections of the New York State coastline and sampling user-group preferences and perceptions will

lay the groundwork for the eventual design and application of a user-oriented methodology for evaluating visual quality along this coastline.

Summary

The above discussion is an attempt to sort out the complexities associated with visual quality. There is no attempt to minimize the complexity, for such a limitation would misrepresent the magnitude of the problem. As shown, an aesthetic character study must by nature be multi-faceted; application to the coastal zone presents new questions which must be resolved.

Despite its complexity, need for research into visual quality is justified by its inclusion as an environmental goal in national policy. The very intangibility of aesthetics makes necessary experimentation with means to achieve its comprehensibility. Though mentioned in policy and occasionally in plans, aesthetics as a viable determinant in professional practice is rarely considered (Ross, 1975). Design and application of a method for assessing visual character along New York's coastal zone could change this situation.

Litton, R. Burton. Water and Landscape: An Aesthetic Overview of the Role of Water in the Landscape. Port Washington, New York: Water Information Center, Inc., 1974.

Lowenthal, David. "Not Every Prospect Pleases--What is our criterion for Scenic Beauty?", Landscape, vol. 12, no. 2 (Winter, 1962-63), pp. 19-23.

Lynch, Kevin. Site Planning. Cambridge, Mass.: MIT Press, 1962.

National Environmental Policy Act, P.L. 91-190, 42 U.S.C., Sec. 1962 et seq., (1970).

Newby, Floyd L. "Perceptual Assessment of Forested Roadside Landscapes." PH. D. dissertation, University of Michigan, Ann Arbor, Mich., 1971.

Newton, Eric. The Meaning of Beauty. Baltimore: Penguin Books, 1959.

Rapoport, Amos and Kantor, Robert. "Complexity and Ambiguity in Environmental Design", Journal of the American Institute of Architects, No. 33 (July, 1967), pp. 210-221.

Ross, M. A. "Visual Quality in Land Use Control." Draft research paper, Sea Grant Project, School of Landscape Architecture, SUNY College of Environmental Science and Forestry, Syracuse, N.Y., 1975

Sanoff, Henry. "Measuring Attributes of the Visual Environment". Designing for Human Behavior: Architecture and the Behavioral Sciences. Ed. by John Lang, et al. Stroudsburg, Penn.: Dowden, Hutchinson, and Ross, Inc., 1974.

Tuan, Yi-Fu. Topophilia, A Study of Environmental Perception. Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1974.

Tunnard, Christopher. "The Adventure of Water", Architectural Review vol. 86 (1939), pp. 99-102.

U.S. Dept. of Agriculture, Forest Service. National Forest Landscape Management, vol. 1. Washington: U.S. Government Printing Office, 1973.

Wise, Harold, et al. A Guide for Federal Approval of State Coastal Zone Management Programs. Washington, D.C.: Office of Coastal Environment, National Oceanic and Atmospheric Administration, November, 1973.

Wohlhill, Joachim. "The Physical Environment: A Problem for a Psychology of Stimulation", Journal of Social Issues, vol. 22, no. 4 (1966), pp. 29-38.

Zube, Ervin H. "Rating Everyday Rural Landscapes in the Northeastern U.S.", Landscape Architecture, vol. 64, no. 2 (July 1973), pp. 370-375.

_____. Scenic Resources and the Landscape Continuum: Identification and Measurement. Ph. D. dissertation, Graduate School of Geography, Clark University, 1973.

_____, Pitt, David G., and Anderson, Thomas W. Perception and Measurement of Scenic Resources in the Southern Connecticut River Valley. Amherst, Mass.: Institute for Man and His Environment, 1974.

VISUAL QUALITY OF THE COASTAL ZONE

- WORKING PAPERS -

To date this series of working papers includes:

No. 1: M. A. Ross, "Visual Quality in Land Use Control," 1975.

No. 2: S. Haskett, "Evaluating Visual Quality of the Coastline: Some Significant Issues," 1975.

No. 3: R. Viohl, Jr., "Landscape Evaluation: A Review of Current Techniques and Methodologies," 1975.

No. 4: J. Felleman, "Coastal Landforms and Scenic Analysis: A Review of the Literature, with a Preliminary Examination of New York's Shoreline." 1975.

Single copies of these papers may be obtained on request from:

David Harper, Sea Grant Project Director
School of Landscape Architecture
SUNY College of Environmental Science
and Forestry
Syracuse, N. Y. 13210