

The Mt. Mitchell Scenery Assessment¹

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Abstract: The scenery assessment process for the Mt. Mitchell Suitability/Feasibility Study was conducted by National Park Service personnel and consultants in 1977-78. It combined approaches designed by Lewis (1962) and Jones (1976) in a comparative evaluation of the scenery of two large landscapes in the Appalachian physiographic province. The purpose of this study was to determine the degree to which parts or all of the +245,000 acre study site surrounding Mt. Mitchell, North Carolina, satisfied national significance, natural area criteria for designation as a new national park. The design challenge required that the scenery assessment process be comprehensive, believable, efficient and that it aid the boundary definition phase of the study.

INTRODUCTION

Public Law 94-518 authorized the National Park Service to undertake a Suitability/Feasibility Study of a large area of landscape northeast of Asheville, North Carolina (fig. 1). Work on the study began May of 1977 and continued for a year. The primary purpose of the study was to explicate the significant resource values within the loosely defined boundaries of the study area and determine whether the sum of these natural attributes might qualify this landscape for inclusion in the National Park System. In some ways the search for resource values of scientific, historic, or scenic significance was a reversal of early Park Service studies which sought to define boundaries to protect landscape values which already enjoyed recognition, understanding and acceptance by national publics.

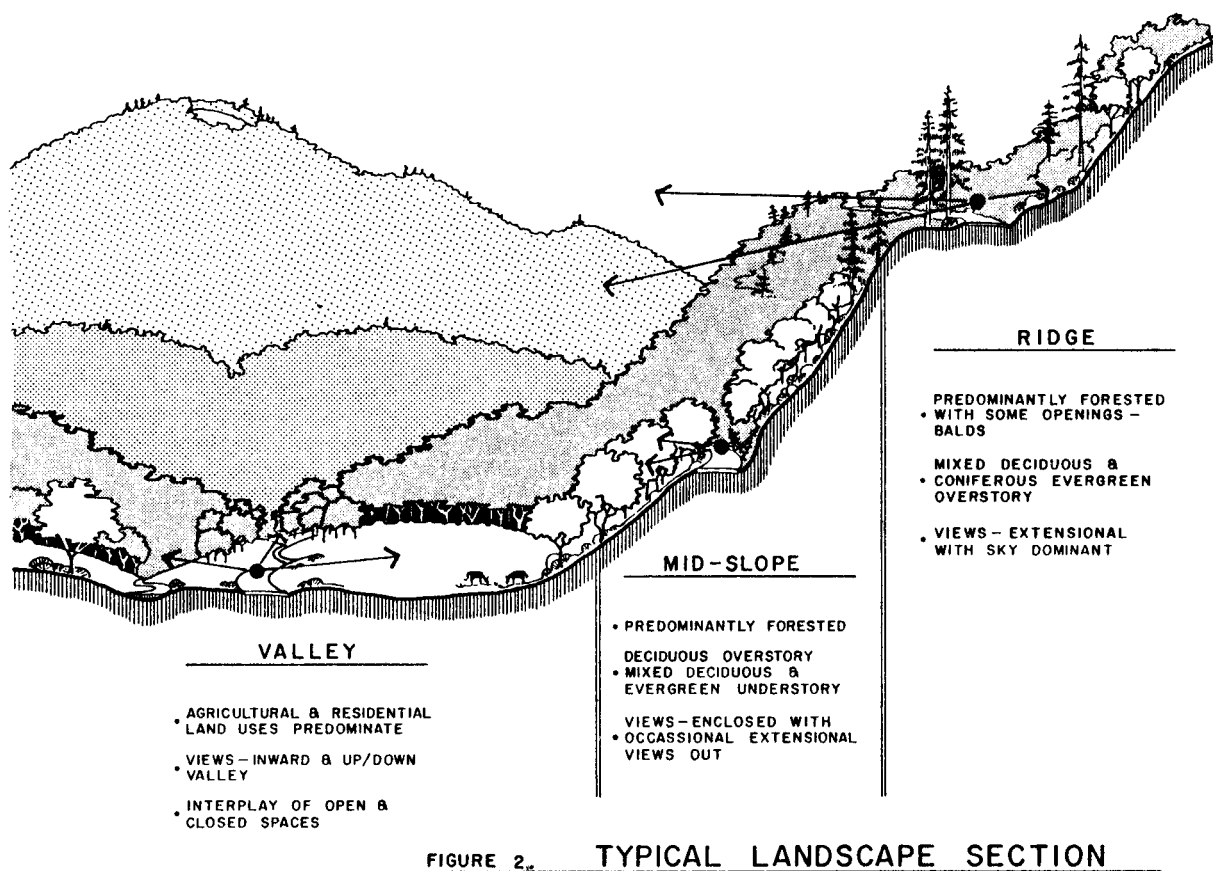
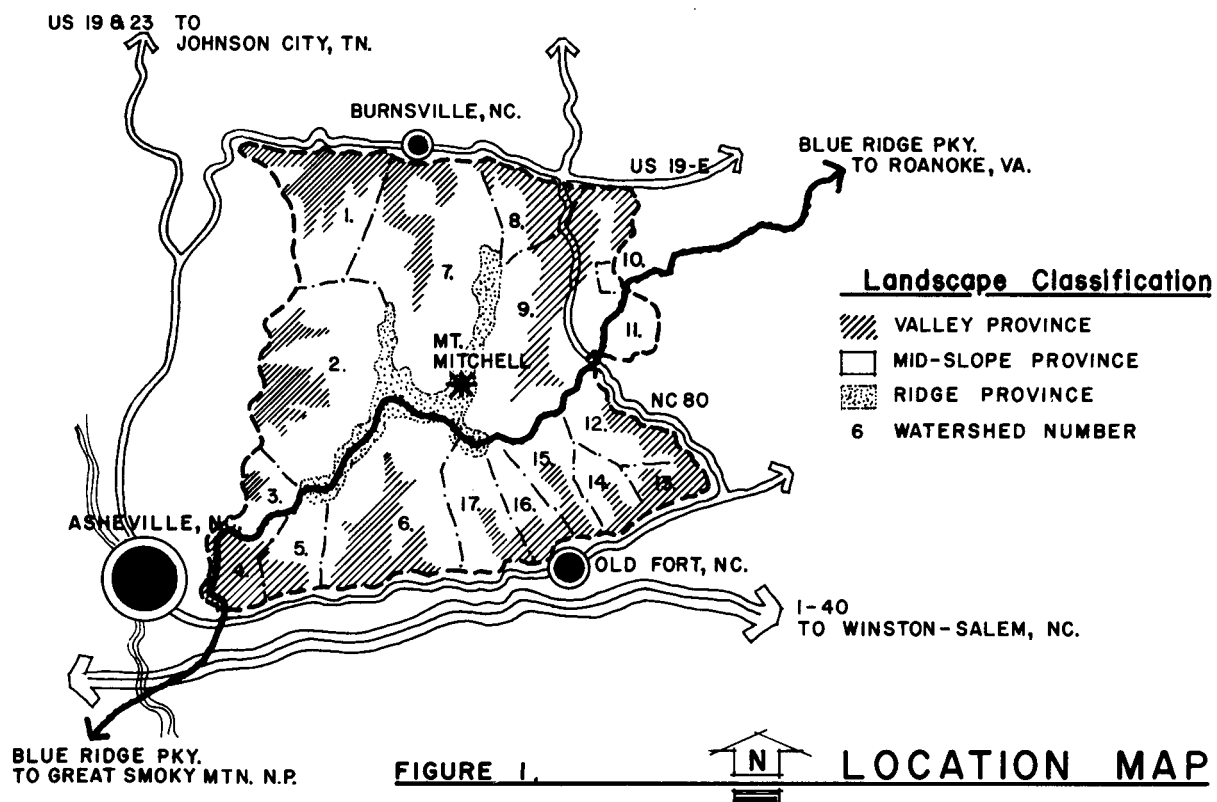
The study team included resource specialists from the Denver Service Center of the National Park Service, the office of the National Forests of North Carolina and the office of State Parks of North Carolina. The thoughts of private land owners in the study area were voiced through their Congressional representatives and the local media.

The inter-agency makeup of the team and the approach reversal spoken to above required that the subgroups of the study team be as objective as possible. Believability, or at least the expectation that the results of each substudy would stand the test of reasonableness was a goal to be achieved.

The scenery assessment sub-group designed the process which follows as a means of assessing the significance of the scenic aspects of study area landscape. We were guided by the recognition that in addition to seeking to be objective the method needed to be comprehensive, efficient to implement, and had to address head on the need for the results of the assessment to aid in the critical boundary definition phase of the overall study. As indicated above the authorizing legislation did not tie the study to specific and firm boundaries but rather to a region. Many local residents and resource users were concerned with this lack of specific study area definition and reacted quite naturally with fear and suspicion.

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LANDSCAPE DESCRIPTION AND CLASSIFICATION

The study area encompassed approximately 245,000 acres. Mt. Mitchell, the highest land elevation east of the Rocky Mountains (6,684 feet) is near the geographic center of the area. Mt. Mitchell is part of the Black and Craggy Mountain Ranges of the Blue Ridge Province in the Appalachian Highlands (Penneman 1928). The area is northeast of Asheville, North Carolina, and is bisected by the Blue Ridge Parkway. The dominant visual impression observers are likely to have of the study area landscape is one of large expanses of forested mountains and narrow valleys with suburban to rural development patterns in evidence.

A simplified landscape classification system based on a visual and elevational definition was developed to aid the inventory and analysis process. This classification identified landscapes as being in either the ridge, midslope or valley provinces. Figure 2 expresses the interrelationship of the provinces and also identifies some of the perceptual characteristics of each setting. It was within the ridge, midslope and valley provinces that the "corridor and observation point qualitative analysis" was performed.

A secondary classification by watersheds, 1-17 (fig. 1) was created to conduct the "interior potentials analysis." The dual system of classification-horizontal (watershed) and vertical (ridge, midslope, valley) aided comprehensive description and qualitative evaluations of the scenery.

THE SCENERY ASSESSMENT MODEL

Much energy has been spent in the past ten years in attempts to define and measure scenic quality. This has occurred for a number of reasons. Dominant among them has been the desire to bring scenic resource

values to an equal footing with other more tangible resource values in the trade-off oriented management decision process. This desire has produced studies which purport to establish measures of quality which range from the documentation of individual expert feelings on the one hand to relatively sophisticated group preference testing on the other. At the time of the Mt. Mitchell study there was no consensus on the right method or participants or for that matter on the possibility or even desirability of attempting measurement. The National Park Service had no operational standards of scenic quality nor an accepted and uniformly applied process for measuring it on a relative scale. For the purposes of the study the following guideline was used:

Qualitative evaluations of the visual resources of different landscape units must be based on inherent capacity to evoke perceptual response rather than on the subjective preference of the investigator, or even of the public at large. Preferences are culturally and historically conditioned, and as such are transitory: 'the mountain scenery', for instance, which many people now admire above all other, was once detested as dreary wastes (Fairbrother 1974, p. 4). Preference testing is highly appropriate when used to prioritize the results of a resource-based landscape assessment. The resource-based assessment itself can attain a high degree of objectivity by breaking visual character into component elements, performing qualitative evaluations on these, and then recombining the results into an overall measure of character or value. A considerable degree of consistency in qualitative judgment between groups with markedly different preferences has been achieved with this

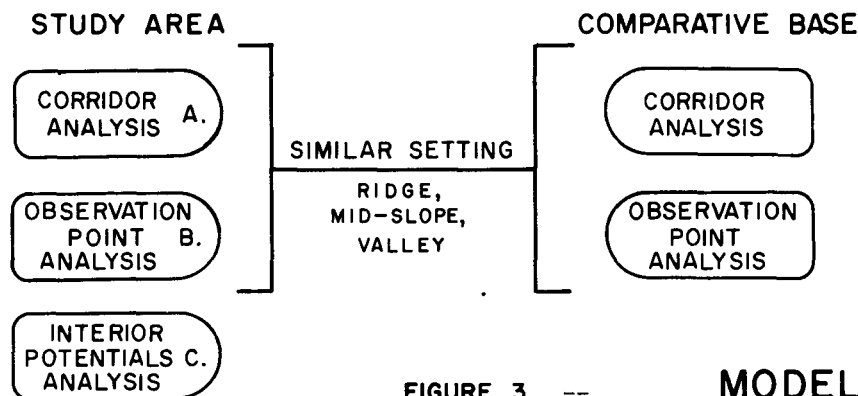


FIGURE 3 -- MODEL

method, which may be interpreted as an empirical demonstration of success " (Burnham et al. 1974, Hendrickson, et al. 1974, (Jones & Jones 1975)).

The assessment model designed for the study involved the application of three analysis components, figure 3, to the study area. The results of two of them, 'A & B', were compared with the results of similar application to a landscape within the same physiographic province and of established national significance-The Great Smoky Mountains National Park. The process, modeled after the Scenic and Recreational Highway Study for the State of Washington (Jones 1976), involved evaluation of selected road segments and observation points within the 3 provinces-ridge, midslope, valley-of the comparative landscape and the acceptance of these ratings as quality standards. The ratings of similar segments within the provinces of the study area were then compared to these standards to determine the relative degree of difference between the two places.

These analyses were based on certain assumptions. First it was assumed that most visitors to the study area if it achieved park status would gain their impressions about the quality of the landscape from their automobiles while moving or stopped at observation points. The view from the road corridor, therefore, became very important.

It was also assumed that most visits to the area would take place in the summer and during the fall color season. Evaluations were therefore made during both seasons. Additional implicit assumptions had to do with the evaluator's objectivity, the typicalness of the time of year and day that evaluations were made, and the validity of the criteria and rating process used.

Data on the visual characteristics of the landscape were gathered in two ways; by observing while in a moving automobile and by photographing views at observation points.

Qualitative evaluations of the data gathered while driving were made immediately after the segment being evaluated was traversed. Evaluations of the photographs were conducted from mounted panoramas and projected slides within two months after the picture taking occurred. All evaluations were made by two trained observers. The evaluations were recorded on specially created forms (fig. 4).

It had been determined by others (Jones 1976) that three criterion values of visual quality are most important: the memorability of a scene or its "vividness," the wholeness of a scene or its "intactness," and the harmony of its parts, "unity." The careful definition and scaling of these criterion values promised the possibility of retaining high degrees of objectivity in the evaluation of the visual quality of a scene or landscape type (i.e., ridge, mid-slope, or valley). The averaging of the ratings given these three criterion values became the "score" for the view of the corridor segment being rated.

The definitions of the criterion values are:

Vividness: A measure of the distinctiveness, diversity, and contrast of the visual impressions derived from the qualitative assessments of land-form, waterform, vegetation and man-made form and their prominence within each segment.

Intactness: A measure of the degree of natural condition of the landscape, derived from "development"-- the degree of landscape modification by man, and "encroachment"--the degree of visual disruption.

Unity: A measure of compositional harmony, derived from the congruence of man-made forms with nature and the overall unity of the elements of the view.

The third analysis component of the scenery assessment model, 'C,' was applied only to the interior reaches of the study area. This procedure was modeled after that designed by P. H. Lewis, Jr. to estimate the recreation value, based partially on scenic quality, of large landscape areas (Lewis 1962).

The analysis was designed to expose qualitative differences between the 17 watersheds of the study area to aid the boundary alternative identification process.

The 12 scenic resources which were inventoried and mapped fit into water, land and vegetation categories (fig. 5). The basic proposition was that watersheds which possess large amounts of these scenic resources-- preferably in close proximity to each other-- have higher scenic quality than those which don't. By extension, those watersheds with "low" amounts of scenic resource would be candidates for exclusion in a process which tried to include the "best," most scenic,

VIEWZONE CLASSIFICATION		RESOURCE INVENTORY	RESOURCE QUALITY	VALUE DETERMINATION
PROVINCE	UNIT			
RIDGE	CORRIDOR 1	LANDFORM MOUNTAIN TOP MOUNTAIN SIDE VALLEY EXPOSED ROCK	CRITERIA VIVIDNESS INTACTNESS UNITY	$VQ = 1/2 (VQ_L + VQ_R)$ HIGHER QUALITY 7 6 5 4 3 2 1 0 LOWER QUALITY
MID-SLOPE	CORRIDOR 2	LANDCOVER • Waterform STREAMS/RIVER FALLS SPRINGS/POOLS • Vegetation DECIDUOUS FOREST EVERGREEN FOREST HEATH BALDS • Manmade ROADS/RAILROADS LAND DEVELOPMENT TRANS. LINES ETC.	VISUAL QUALITY LANDSCAPE UNIT ROAD OVERALL	
VALLEY	ETC.			
		PROMINENCE JUDGEMENTS (SCALE 0-4)	CRITERIA CLASSES (SCALE 1-7)	

BASIC PROPOSITION IS THAT A LANDSCAPE EXHIBITS HIGH SCENIC QUALITY IF ITS RESOURCES ARE PROMINANT AND DIVERSE, MEMORABLE, AND EVIDENCE INTEGRITY AND UNITY.

VISUAL QUALITY • LANDSCAPE PROMINENCE OF CHARACTERISTICS (0-4)	MOUNTAIN TOP MOUNTAIN SIDE VALLEY EXPOSED ROCK LANDFORM	☐ X ☐ = ☐	VIVIDNESS VALUE (1-7) CATEGORY QUALITY	SCENIC RESOURCE EVAL. CORRIDOR: FIELD COMMENTS:
	FALLS STREAMS/RIVERS SPRINGS POOLS WATERFORM	☐ X ☐ = ☐		
	DECIDUOUS FOR. EVERGREEN FOR. HEATH BALD VEGETATION	☐ X ☐ = ☐		
	ROADS RAILROADS SUBURBAN DEV. URBAN DEV. FARM DEV. RESERVOIR PONDS QUARRIES/STRIP TRANS. LINES PASTURE CROPLAND CLEARCUTS RECRETE. FAC. MANMADEFORM	☐ X ☐ = ☐		
(VQ_L)	Pt = ☐	☐ ÷ Pt	VISUAL QUALITY • ROAD OVERALL VISUAL QUAL. (VQ) (VQ _R)	1/2 (VQ _L + VQ _R) = ☐ 1/3 (R _{sv} + R _{fl} + R _{sq}) = ☐ 1/2 DEVELOP. ENCROACH. ☐ 1/2 OVERALL MAN/NATURE ☐ 1/3 (☐ UNIT VIVIDNESS + ☐ INTACTNESS + ☐ UNITY) = ☐

FIGURE 4. COMPONENTS A & B

INTERIOR POTENTIALS ANALYSIS *

PROCESS DEPENDENT ON INFORMATION FROM ENVIRONMENTAL SPECIALISTS.

NATURAL RESOURCES OF HIGH SCENIC QUALITY POTENTIAL

WATER

CLEAN STREAMS & LAKES
RAPIDS-WHITewater
NATURAL SPRINGS
UNDISTURBED WETLANDS
STREAM CONFLUENCES
WATERFALLS

LAND

STEEP SLOPES
ROCK OUTCROPS - CLIFFS
HIGH POINTS
TIGHTLY ENCLOSED SPACES

VEGETATION

MAJOR ECOTONES
MEADOWS
BALDS
UNIQUE SPECIES

CULTURAL RESOURCES OF HIGH SCENIC QUALITY POTENTIAL

BASIC PROPOSITION IS THAT LOCATIONS WITH AGGREGATED RESOURCE VALUES HAVE GREATEST POTENTIAL OF PROVIDING A HIGH QUALITY SCENIC EXPERIENCE.

* SYSTEM MODELED AFTER P.H. LEWIS JR. RESOURCE INVENTORY PROCESS.

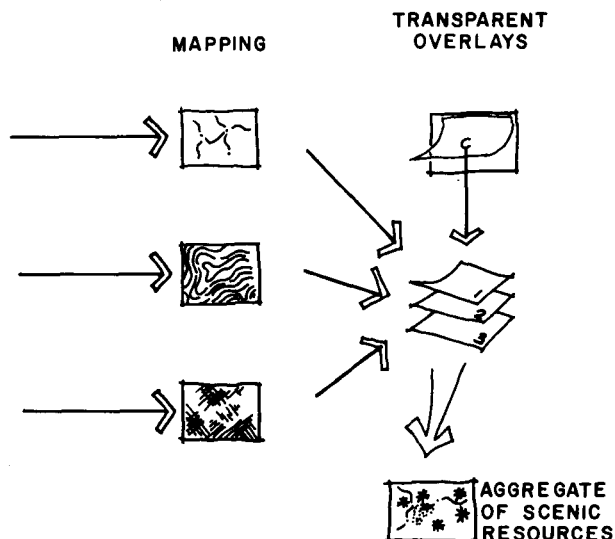


FIGURE 5.

COMPONENT C

in Park System boundaries. Judgments about the aggregated resource values as they are distributed in the landscape were expressed relatively.

The primary sources of information for this component included U.S.G.S. Quad sheets 1:62500, color aerial photography from a 1972 flight, and the maps and reports of the other team members. The mapping on overlays was conducted in the office. There was inadequate time to field check the results. Thus the use of the word "potential" in the component name.

In summary, analysis components 'A & B' yielded information on the scenic quality as seen from the road. Analysis component 'C' predicted the scenic quality potential of the interior landscapes - those not seen from a road.

FINDINGS

Components A & B

The process display (fig. 4) indicates that the formula $VQ = 1/2 (VQ + VQ_r)$ (Jones 1976) was applied to synthesize the segment

ratings into a segment score. The scores were compared, province by province, with those of similar segments in the Great Smoky Mountains National Park. This comparison indicated the position of the study area province being analyzed with respect to the comparative standard when both were arrayed on a lower to higher, 7 level relative quality scale. The following tabulation results from summing and averaging ratings of all segments in each province in the study area and comparative landscape in two seasons.

	<u>Summer</u>	<u>Autumn</u>	<u>Mean</u>
Component 'A'			
Corridor Analysis			
Average value Smokies	5.0	6.0	5.5
Average value Mitchell	3.9	4.8	4.4
Component 'B'			
Observation Point Analysis			
Average value Smokies	5.3	6.3	5.8
Average value Mitchell	4.3	5.3	4.8

As can be seen and as expected the scenic quality ratings are higher for the comparative base than those of the study area. A review of the pertinent field rating forms indicated that the study area generally received lower

ratings in the valley province under the criterion values of intactness and unity. The fact that the valley provinces of the study area, especially those south of the Blue Ridge Parkway, are undergoing rapid unplanned land use change from rural to suburban type uses is no doubt the reason for the lower scores.

Component C

The scenic resource values mapped for the study area tended to aggregate in the upper reaches of the mid-slope and ridge provinces. As a pattern this distribution attributed no relative advantage to one watershed over another.

The even distribution of scenic resource potential in the higher elevations and the higher and comparable (with the landscape of national significance) scores of road segments in the ridge and midslope provinces suggested boundaries be established which included the landscapes above the valley province.

SUMMARY

This scenic quality evaluation set about to explicate the attributes of the Mt. Mitchell study area and, also to discover the relative degree of sameness between the study area and the regionally significant landscape of the Great Smoky Mountains National Park. The procedures used to accomplish both of these goals were comprehensive in design and systematically implemented. Relative quality rankings were produced. It was found that the higher reaches of the Mt. Mitchell study area compare favorably to similar settings in Great Smoky Mountains National Park and also possess the highest aggregation of scenic resource values.

The results of the studies of the other resource specialists also tended to place value on the higher areas. In combination the findings led to the creation of 6 management alternatives for midslope and ridge provinces of the study area. A Congressional decision on the management designation for this landscape has not been rendered at the time of this writing.

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