United States
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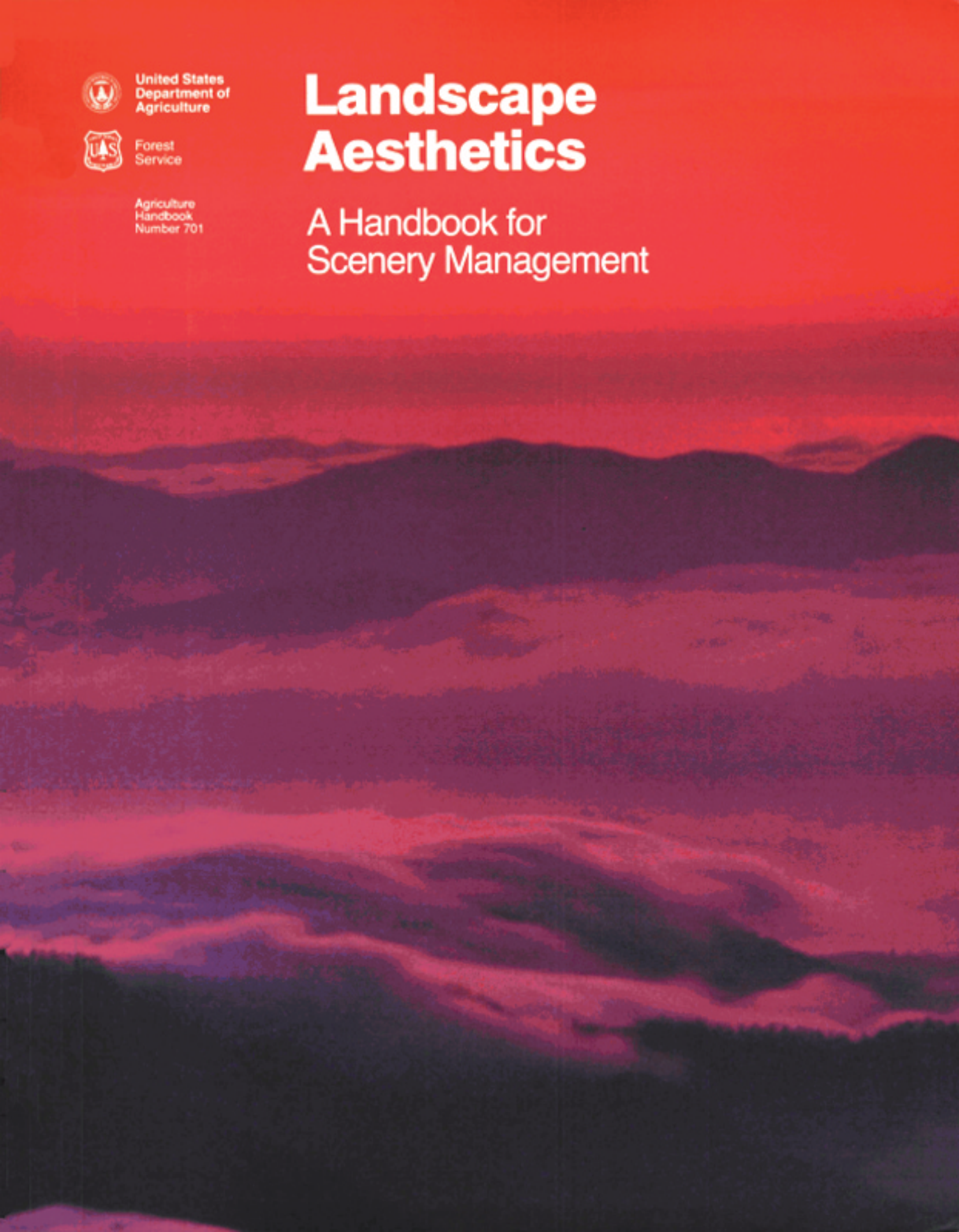
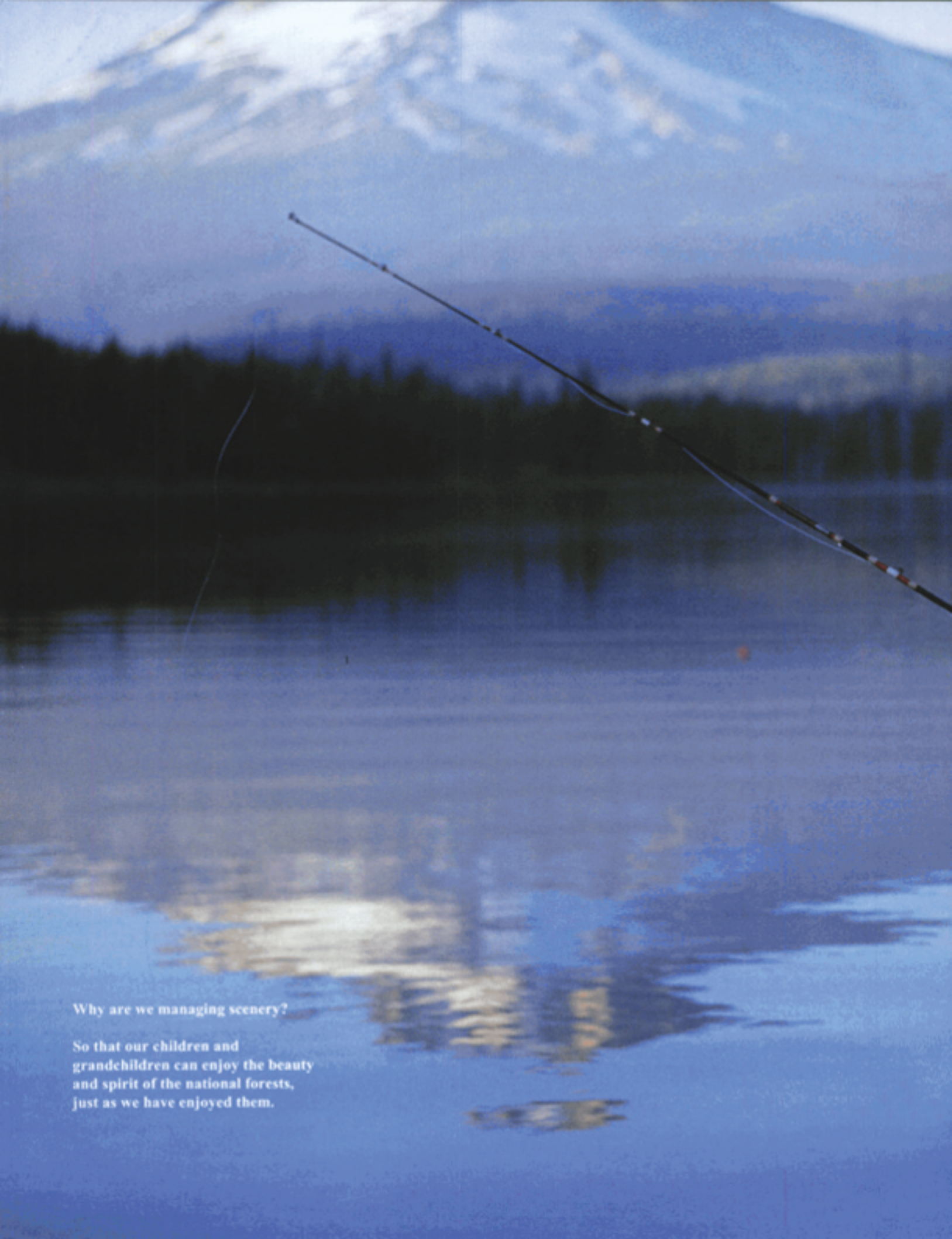
Forest
Service

Agriculture
Handbook
Number 701

Landscape Aesthetics

A Handbook for Scenery Management



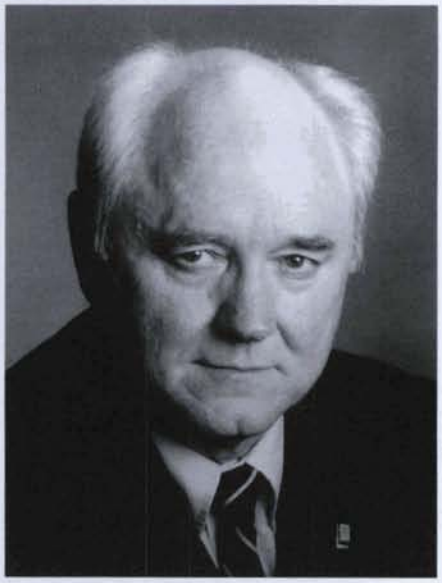


Why are we managing scenery?

So that our children and grandchildren can enjoy the beauty and spirit of the national forests, just as we have enjoyed them.

Dear Forest Service Employees,

I am very pleased to introduce the revised Landscape Aesthetics Handbook. This Handbook replaces Agriculture Handbook 462 - The Visual Management System,which has been an important tool for visual resource management for the past 25 years.



The users and owners of the national forests continue to express a strong interest in maintaining the character of forest and grassland settings. These settings provide special places for recreation and visual amenities. Alfred Runte stated in a book called The National Forest Idea (published in 1991) "There is no question...that the national forests are major contributors to an American sense of place, to an identity with landscape that transcends economics for its own sake. The founders of the national forest idea...were consistent in their advocacy for landscape aesthetics. The forests not only should be functional, they should be beautiful as well." This idea is one of the fundamental principles of the Landscape Aesthetics Handbook.

While retaining many of the basic inventory elements of the Visual Management System, the Landscape Aesthetics Handbook incorporates much of what we are learning about the management of ecosystems. The landscapes we see today are the result of both natural and human processes that have occurred over time. Understanding these processes will help us consider the effects of proposed changes in the landscape and to incorporate people's values into our decisions more effectively.

Please begin using the concepts and terms contained in this Handbook as you work on new projects or initiate forest plan revisions. I am confident that with this revised Handbook, the Forest Service will not only continue to be a national leader in visual resource management, but will also demonstrate a strong commitment to integrating human values into ecosystem management.

Jack Ward Thomas

United States Department of Agriculture

Forest Service

Agriculture Handbook Number 701

Landscape Aesthetics

A Handbook for Scenery Management

Abstract

High quality scenery, especially scenery with natural-appearing landscapes, enhances people's lives and benefits society. The Scenery Management System presents a vocabulary for managing scenery and a systematic approach for determining the relative value and importance of scenery in a national forest. This handbook was written for national forest resource managers, landscape architects, and others interested in landscape aesthetics and scenery. Both students and the general public, our "constituents," will benefit from the straightforward approach of the system to a complex art and science. Ecosystems provides the environmental context for this scenery management system. The system is to be used in the context of ecosystem management to inventory and analyze scenery in a national forest, to assist in establishment of overall resource goals and objectives, to monitor the scenic resource, and to ensure high-quality scenery for future generations.

December 1995

This handbook supercedes AH-462,
National Forest Landscape Management,
Volume 2, Chapter 1,
The Visual Management System
Issued April 1974

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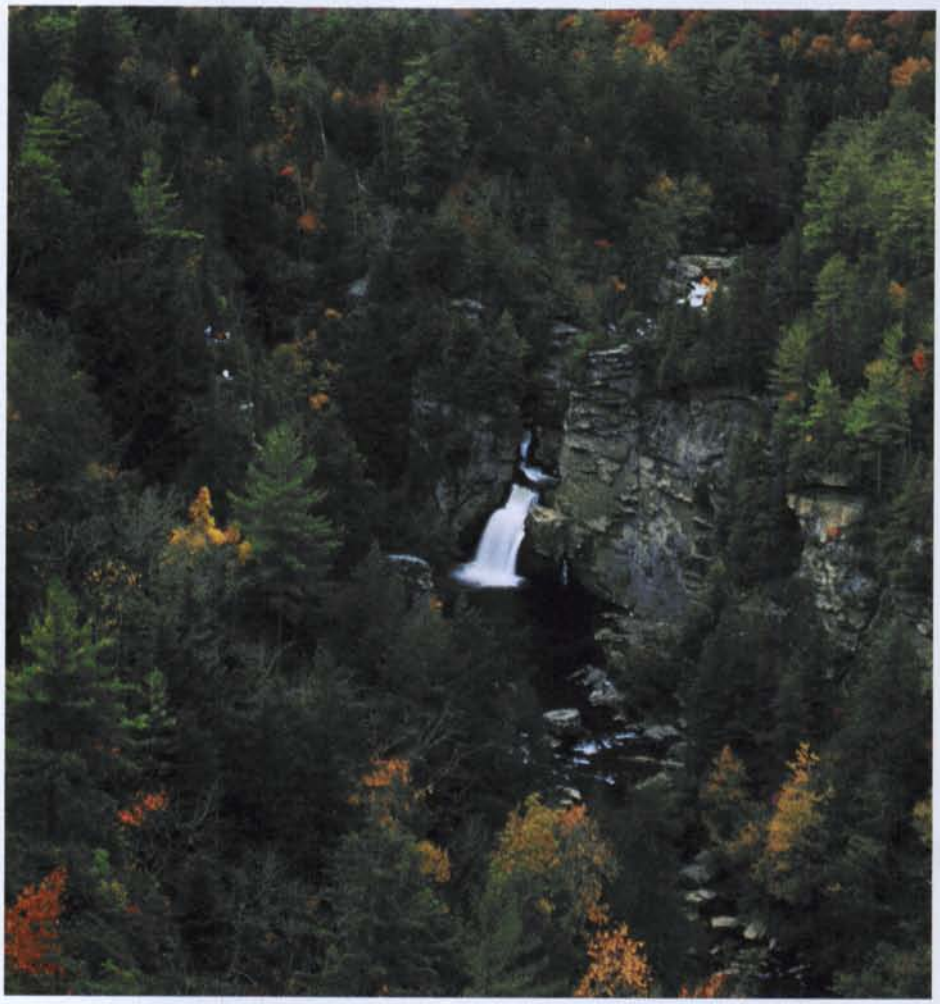
A Note to the Reader

I mean not, with
unphilosophic weakness,
to bemoan the perishable
condition of sublunary things;
but to lament only,
that, sublunary things,
the wood-land-scene,
which is among
the ***most beautiful***,
should be among
the ***most perishable***.
Willaim Gilpin, A.M. 1791.



Why is a handbook on landscape aesthetics needed? There are many reasons. Let's think about it.

On your next visit to a national forest, what awaits you as you explore nature? You have driven from your home, leaving behind the bustling traffic of modern life. You see the national forest entrance sign and know that a treasure chest of experiences awaits you. What is at the end of the road, at the end of the trail?

Hiking along a trail, your vehicle left far behind at the trailhead, you discover that tension is leaving your body, and you are tuning in to your new surroundings. You hear the sound of your boots scuffing fallen leaves on the earthen trail, and your breathing deepens.

When hiking with friends, conversations cease, and you focus on the forest environment. Walking quietly now, you inhale the clean, clear air and smell the unique fresh scents of the woods. Splashes of red and coral wildflowers dot the forest floor. You look around and see that bark on one grove of trees is different from its neighbor, and wonder why. The wind rustles through the tree tops and you are startled by the call of a hawk as it floats high overhead on a powerful thermal updraft.

The trail curves out of sight ahead, and you hear the first unmistakable sound of falling water. You know your destination, that favorite waterfall, where you will stop a while and feel the cool mist billowing up into your face. You remember from your last visit here the verdant ferns spilling down along the cliffs behind the falls and splashes of bright reds and subtle deep blues from flowers clinging tenaciously to the rock cliffs as if planted by a master gardener.

Sooner than you had expected, you are there once again. You round the bend and see the glistening water as it cascades over its stone precipice, contrasting against the darkness of the forest. Sitting on a rock ledge, you wonder who it was who first followed a deer trail and came upon this place with its exceptional combination of rocks and water and ferns and forest. You enjoy this landscape, reflecting on how unique it is, and how different from your daily surroundings. This is a special place.

The landscapes of your national forests are distinctive and unique. Some would say they have a **character** all their own.

Acknowledgments

Several hundred individuals and many organizations and agencies have made important contributions in various ways to the development of this handbook.

Ever since *The Visual Management System* was published in 1974, there have been helpful comments and critiques from within the Forest Service, other agencies, academic institutions, organizations, and private practitioners. Along the way there have been many innovators who have helped develop appropriate subsystems to complement the basic system. Dozens of researchers in the fields of landscape architecture, psychology, sociology, economics, ecology, and so on, have since added to the evolving knowledge and understanding of scenic quality, attributes, and values. Throughout the development of this handbook, there was a concerted effort to analyze and utilize new knowledge developed by researchers.

Among the pioneers in scenery management research was Professor R. Burton Litton of the University of California-Berkeley. Litton developed many of the concepts and vocabulary still used today. Regional Landscape Architect Warren Bacon of the Pacific Northwest Region of the Forest Service, far more than anyone else, is the primary contributor to this handbook. He spearheaded the development and publication of *The Visual Management System* in 1974, served as a watchdog over the system for almost 20 years, and then played a major role in updating the system by publication of this handbook. He served as contracting officer's representative on its production, guiding the contracting team through the maze of possible approaches. Without the backing and perseverance of Bob Ross, Chief Landscape Architect in the Washington Office, the high standards of quality and priority for funding for this handbook would not have been possible. Regional Landscape Architect Steve Galliano of the Southern Region rounded out this core team of contract administrators, working side-by-side with Bacon as an associate contracting officer's representative in guiding and reviewing the development of the handbook over a 2-year period. Galliano guided the steering committee and technical advisory group through a very difficult and key technical review session in May 1992 in Denver, CO. He provided in-depth editing and organized a field testing workshop on the Jefferson National Forest in March 1993.

A steering committee of regional landscape architects and representatives provided invaluable reviews and recommendations from the time of development of the request for proposals through the development of the handbook. In addition to Bacon and Galliano, steering committee members included:

Meeting of steering committee and technical advisory group in May 1992 in Denver, CO.

- Larry Blocker—Northern Region.
- Herb Mittmann—Rocky Mountain Region.
- Bill Larsen—Southwest Region.
- Tom Hagan- Intermountain Region.
- Gary Brogan—Pacific Southwest Region.
- Dennis Parker—Eastern Region.
- Nora Laughlin—Alaska Region.

A technical advisory group of forest landscape architects and educators provided multiple reviews and critiques of the expanded process developed in this handbook. They helped test how concepts would actually work in field practice. This group included:

- Pat Thomas, Flathead National Forest
- "Corky" Sanborn, Idaho Panhandle National Forests
- Stan Specht, Rocky Mountain Region
- Erik Martin, White River National Forest
- Terry Reetz, Black Hills National Forest
- Doug Schleusner, Santa Fe National Forest
- Ron Wilson, Tonto National Forest
- Terry Fletcher, Sawtooth National Forest
- Ken Sonksen, Sierra National Forest
- Jerry Mosier, Klamath National Forest
- Philip Horning, Tahoe National Forest
- Al Grapel, Siuslaw National Forest
- Jennifer Burns, Sisters Ranger District, Deschutes National Forest
- Steve Hendricks, Cherokee National Forest
- Melinda McWilliams, National Forests in North Carolina
- Sherri Schwenke, Ottawa National Forest
- Gary Kell, Allegheny National Forest
- David Johnson, Shawnee National Forest
- Carol Jensen, Petersburg Ranger District, Tongass National Forest
- John Short, Tongass National Forest, Ketchikan Area
- Dom Monaco, Tongass National Forest, Chatham Area
- Deirdre Buschmann, Tongass National Forest, Stikine Area
- Professor Wayne Tlusty, University of Wisconsin-Madison

Professor Tlusty is singled out from the above group for commendation, not only because he is a nationally recognized expert on this subject, but because he unselfishly committed far more time to this project than his university activities would normally allow.

Environmental Consulting, Planning and Design (ECPD) developed a high quality preliminary draft document which provided an excellent basis for refinement of this final document. ECPD, led by Lee Anderson, Principal, utilized the expertise of the following members: Wayne Iverson, Dr. Perry Brown, Bennie Blake, Roy Maloney, Robin Velte, Patrick Neff, and Janie Gustafson.

A revision team led by Larry Blocker, Northern Region Landscape Architect, refined, reorganized, and completed the Landscape Aesthetics Handbook. Other members of the revision team included:

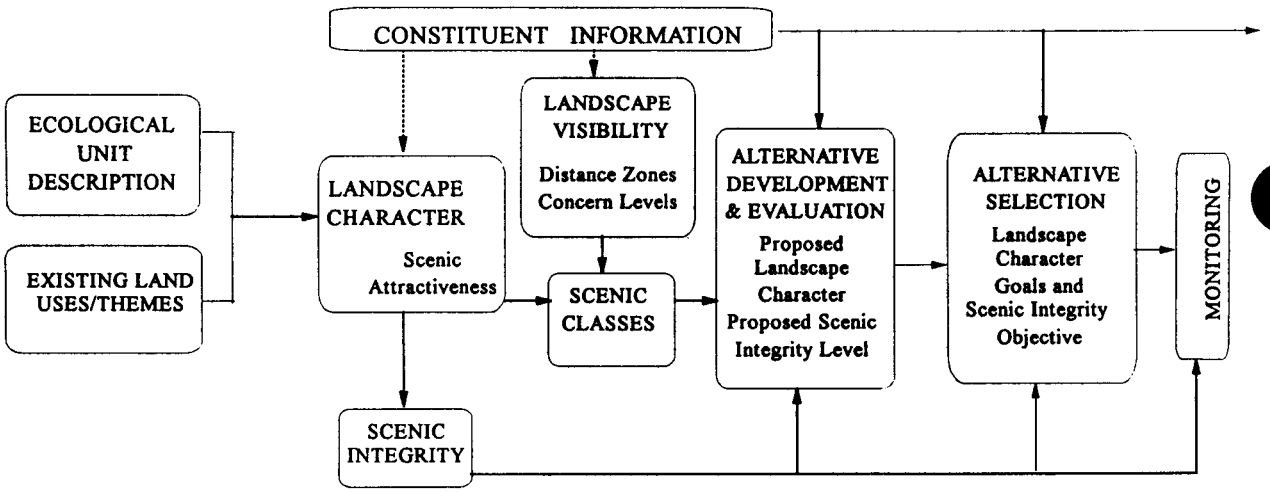
- Terry Slider. Deschutes National Forest
- Jane Ruchman. Gallatin National Forest
- Jerry Mosier. Klamath National Forest
- Larry Kolk. National Forests in Florida
- Janet Silbernagle. Hiawatha National Forest
- Jim Beard. Coconino National Forest
- Dave Wagner. Jefferson National Forest
- Gary Brogan. Pacific Southwest Region
- Dennis Jones. Hiawatha National Forest
- Nora Laughlin. Alaska Region

Summary

Purpose and Scope

This handbook defines a system, referred to hereafter as the Scenery Management System (SMS), for the inventory and analysis of the aesthetic values of National Forest lands. The Scenery Management System evolved from and replaces the Visual Management System (VMS) defined in Agricultural Handbook #462. While the essence of the system remains essentially intact, still supported by current research, terminology has changed and the system has been expanded to incorporate updated research findings. Conceptually, the SMS differs from the VMS in that: it increases the role of constituents throughout the inventory and planning process; and it borrows from and is integrated with the basic concepts and terminology of Ecosystem Management. The Scenery Management System provides for improved integration of aesthetics with other biological, physical, and social/cultural resources in the planning process.

The flow chart below outlines the Scenery Management System process. This process involves identifying scenery components as they relate to people, mapping these components, and developing a value unit for aesthetics from the data gathered. This value unit provides information to planning teams and leads to rational decisions relative to scenery as a part of ecosystems.



Process

An **Ecological Unit Description** (EUD), sometimes called a mapping unit description, represents the common starting point for SMS and for Ecosystem Planning. An objective description of the biological and physical elements is drawn from the EUD and combined with identified landscape character attributes to develop the Landscape Character Description. It is a combination of the scenic attributes that make each landscape identifiable or unique. Landscape Character creates a "Sense of Place," and describes the image of an area. The Landscape Character Description provides the frame of reference for defining the Scenic Attractiveness classes.

Scenic Attractiveness (ISA) classes are developed to determine the relative scenic value of lands within a particular Landscape Character. The three ISA classes are: Class A, Distinctive; Class B, Typical; Class C, Indistinctive. The landscape elements of landform, vegetation, rocks, cultural features, and water features are described in terms of their line, form, color, texture, and composition for each of these classes. The classes and their breakdown are generally displayed in a chart format. A map delineating the ISA classes is prepared.

The Landscape Character description is used as a reference for the **Scenic Integrity** of all lands. Scenic Integrity indicates the degree of intactness and wholeness of the Landscape Character; conversely, Scenic Integrity is a measure of the degree of visible disruption of the Landscape Character. A landscape with very minimal visual disruption is considered to have high Scenic Integrity. Those landscapes having increasingly discordant relationships among scenic attributes are viewed as having diminished Scenic Integrity. Scenic Integrity is expressed and mapped in terms of Very High, High, Moderate, Low, Very Low, and Unacceptably Low.

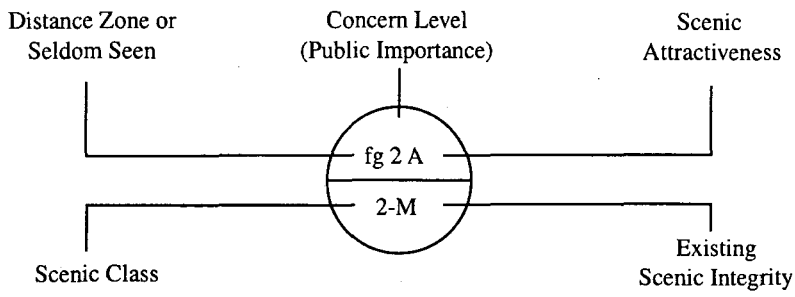
Landscape Visibility is composed of two parts: human values as they relate to the relative importance to the public of various scenes and the relative sensitivity of scenes based on distance from an observer. Human values that affect perceptions of landscapes are derived from constituent analysis. This information may be derived from many sources including, but not limited to independent research; other facets of ecosystem assessments; local, regional, and national studies.

Constituent Analysis serves as a guide to perceptions of attractiveness, helps identify special places, and helps to define the meaning people give to the subject landscape. Constituent analysis leads to a determination of the relative importance of aesthetics to the public; this importance is expressed as a **Concern Level**. Sites, travelways, special places, and other areas are assigned a Concern Level value of 1, 2, or 3 to reflect the relative High, Medium, or Low importance of aesthetics.

Seen Areas and Distance Zones are mapped from these 1, 2, or 3 areas to determine the relative sensitivity of scenes based on their distance from an observer; these zones are identified as Foreground (up to 1/2 mile from the viewer), Middleground (up to 4 miles from the foreground), and Background (4 miles from the viewer to the horizon). Landscapes that are not visible in the Foreground, Middleground, or Background from any of the selected travelways or use areas, are considered **Seldom-Seen** areas since we know they may be seen, at a minimum, from aircraft and by the occasional viewer wandering through the forest.

Using the data gathered and mapped for Scenic Attractiveness and Landscape Visibility, a numerical **Scenic Class** rating is assigned to all lands. These ratings, 1-7, indicate the relative scenic importance, or value, of discrete landscape areas. Mapped Scenic Classes are used during forest planning to compare the value of scenery with other resources, such as timber, wildlife, old-growth, or minerals.

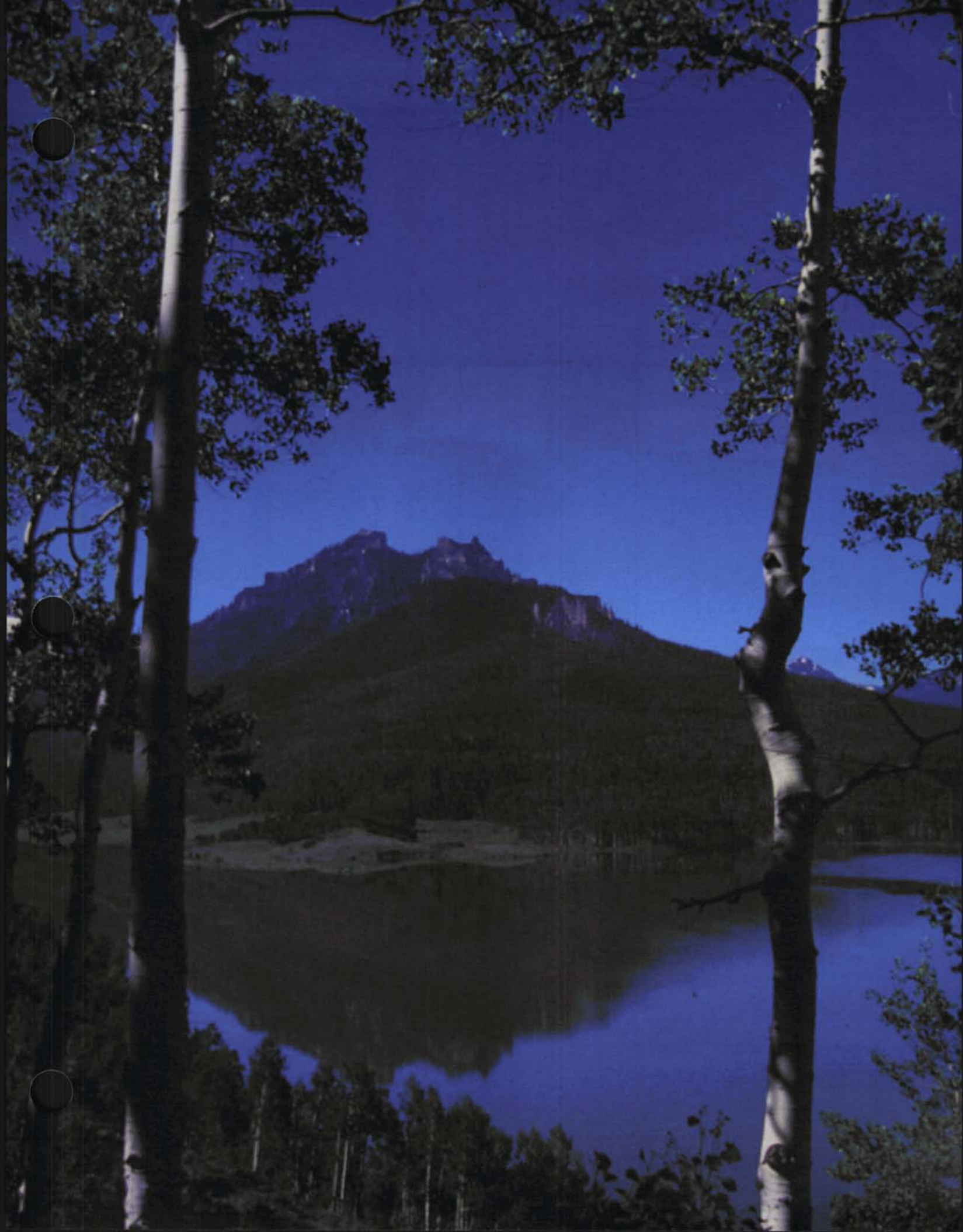
At this point in the planning process, a **Landscape Value** map is prepared using overlays of all the data gathered. The Landscape Value is expressed as an icon, a sample of which is shown below:

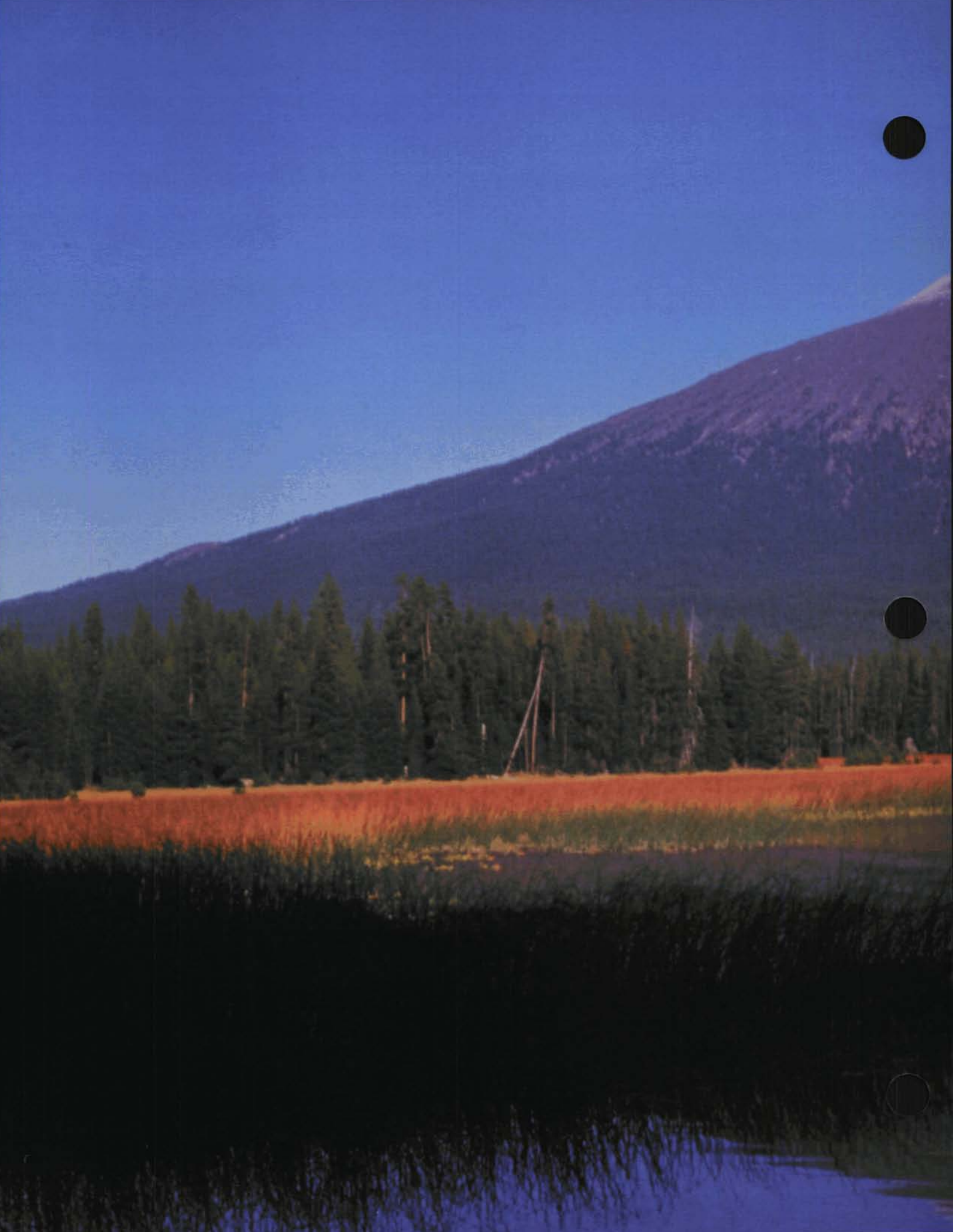


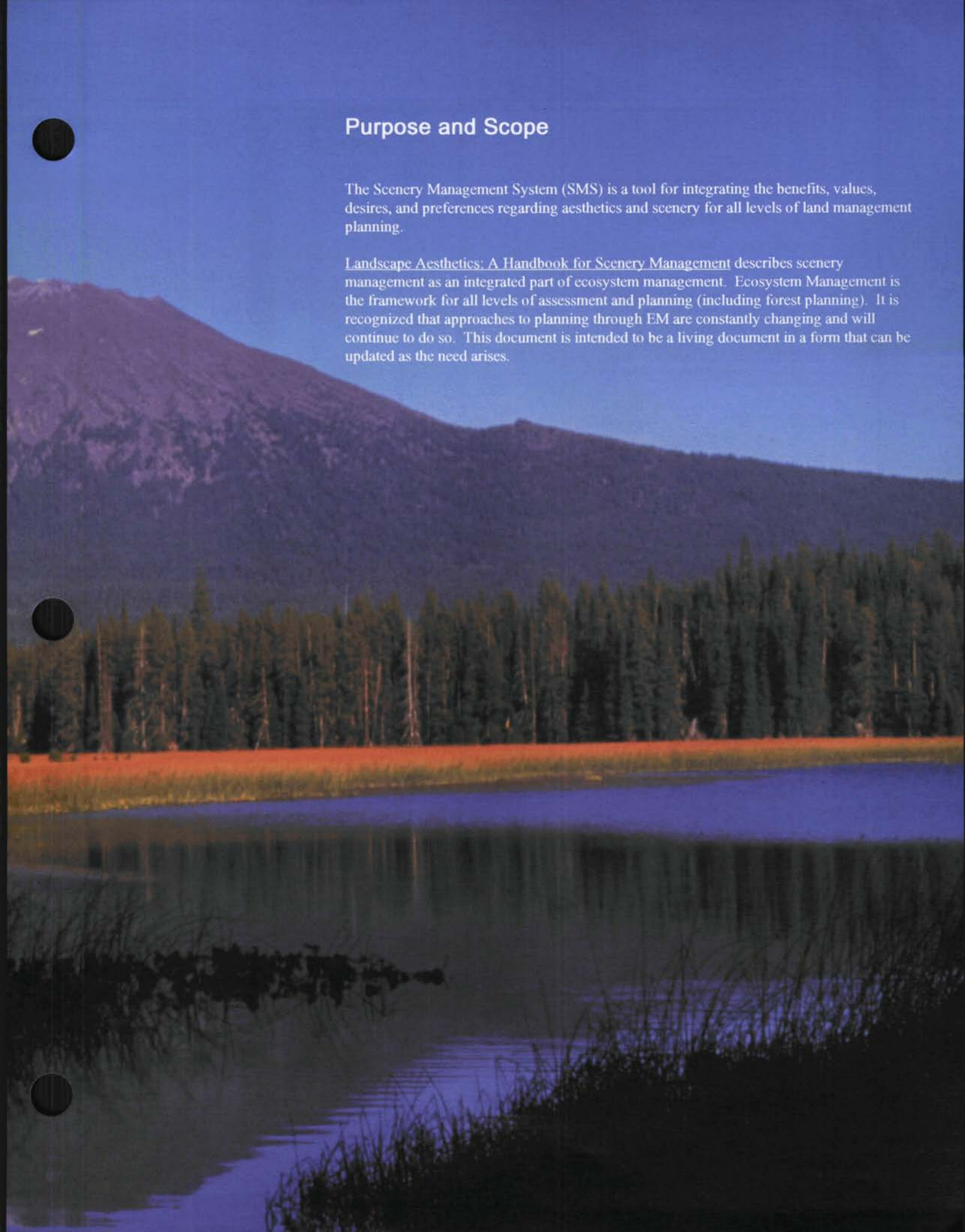
This icon represents the inventory of scenic attributes and their related social values. The map provides information to planning teams concerning the relative scenic values of a subject area and the extent to which those values are intact.

During the alternative development portion of the planning process, the potential and historical aspects of the Landscape Character Description are used to develop achievable **Landscape Character Options** in concert with other resource and social demands. Landscape Character Descriptions and associated Scenic Integrity levels, long- and short-term, are identified for each option and alternative. Upon adoption of a plan, the Landscape Character Description becomes a goal and the Scenic Integrity levels become **Scenic Integrity Objectives.** Subsequent plan implementation will include monitoring of both long- and short-term goals and objectives for scenery management.

Scenery Management is not static. It is a dynamic as the world in which we live. This handbook is provided in a loose-leaf format to facilitate the refinement of this system in time and the incorporation of future knowledge and research findings.







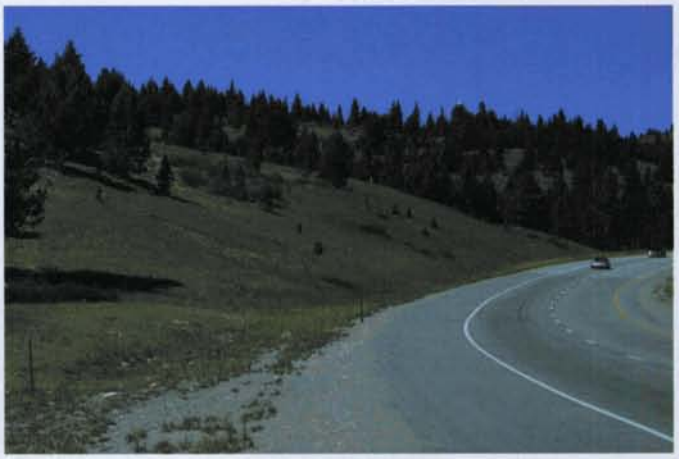
Purpose and Scope

The Scenery Management System (SMS) is a tool for integrating the benefits, values, desires, and preferences regarding aesthetics and scenery for all levels of land management planning.

Landscape Aesthetics: A Handbook for Scenery Management describes scenery management as an integrated part of ecosystem management. Ecosystem Management is the framework for all levels of assessment and planning (including forest planning). It is recognized that approaches to planning through EM are constantly changing and will continue to do so. This document is intended to be a living document in a form that can be updated as the need arises.

Purpose and Scope

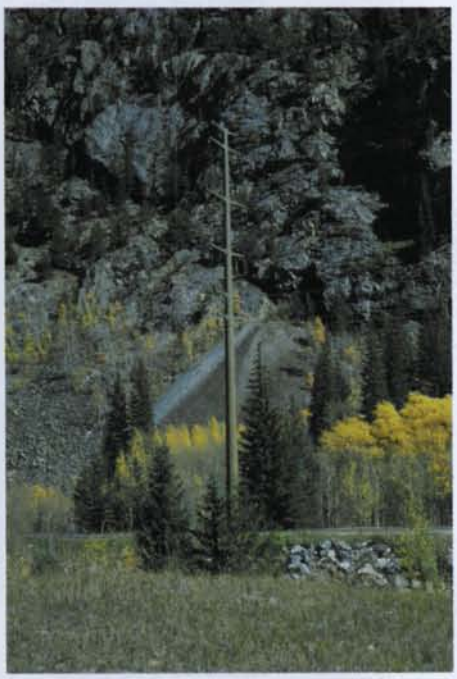
Timber harvesting



Road building

Stream improvements

Special use developments

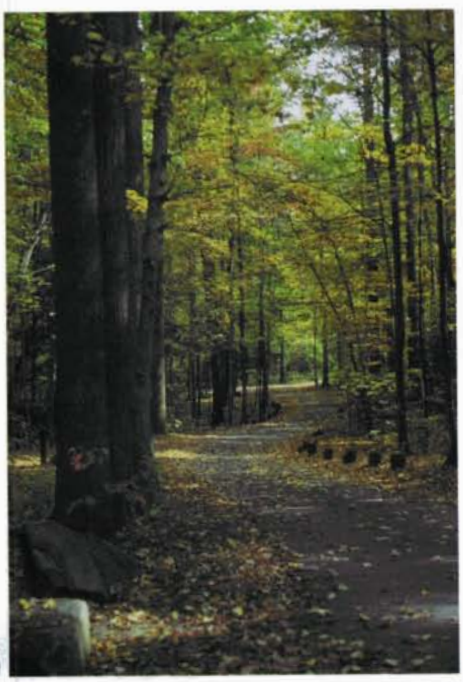


Utility line construction

The **Scenery Management System** provides an overall framework for the orderly inventory, analysis, and management of scenery. The system applies to every acre of national forest and national grassland administered by the Forest Service and to all Forest Service activities, including timber harvesting, road building, stream improvements, special use developments, utility line construction, recreation developments, and fuelbreaks. The Scenery Management System may also serve needs for scenery management outside national forests in the United States and in other parts of the world.

The Scenery Management System establishes the following:

- Common terminology.
- Consistent procedures for inventory, analysis, and synthesis.
- Standards and guidelines for scenery management.
- Techniques for monitoring.

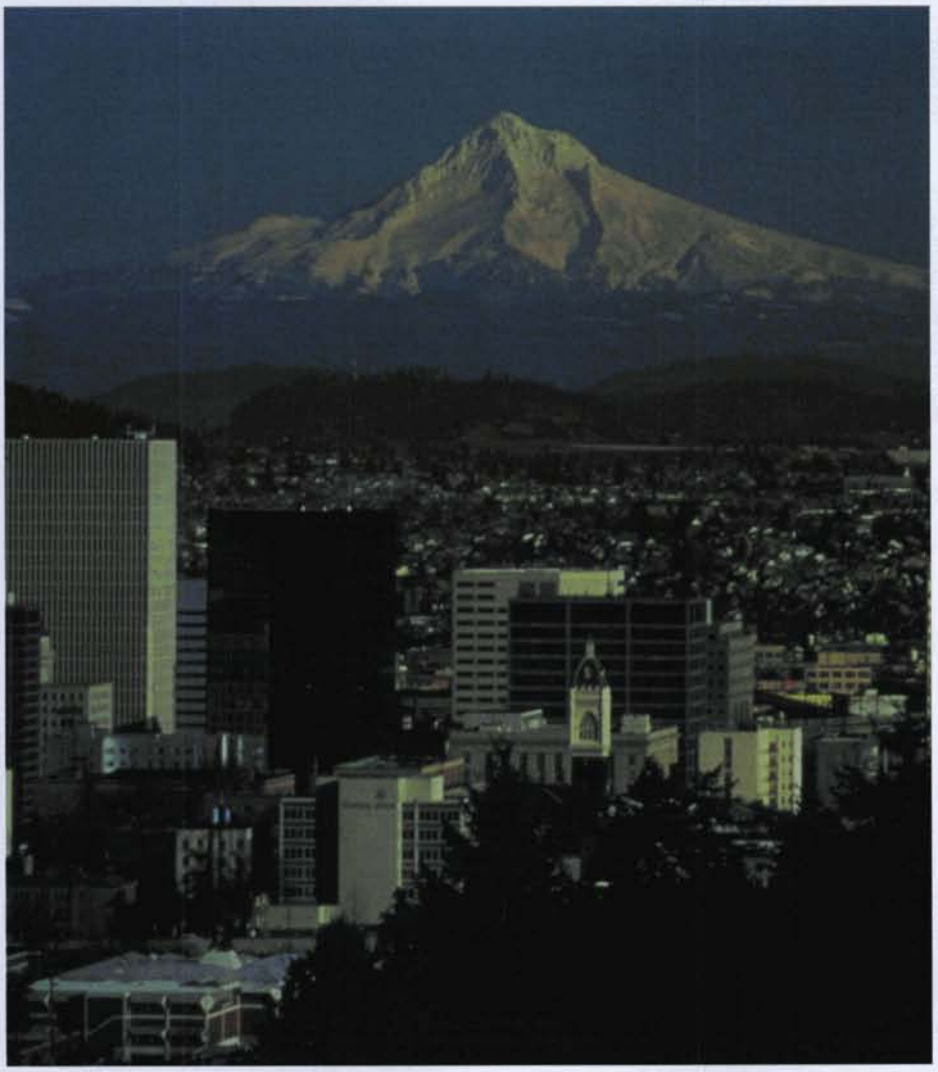


Recreation developments

Fuelbreaks

Why is scenery management necessary?

People are concerned about the quality of their environment, including aesthetic values of landscapes, particularly scenery and spiritual values.

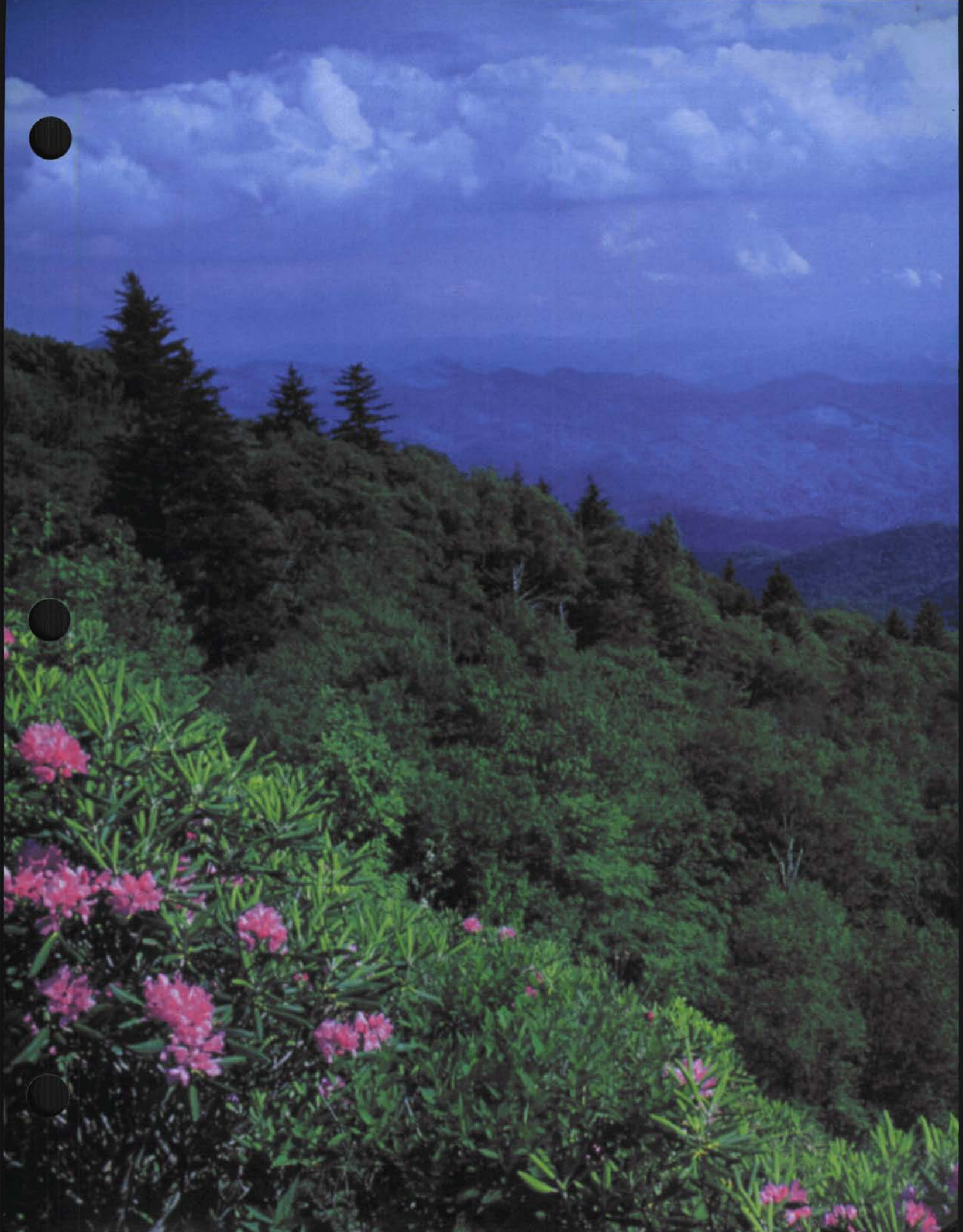


People need natural-appearing landscapes to serve as psychological and physiological "safety valves," for these reasons:

- The world's urban population pressures are increasing.
- Technology is rapidly advancing.
- Demands for goods and services are increasing.
- People's lives are becoming more complex.
- Urban pressures are demanding more land for development.
- Once plentiful natural-appearing landscapes are becoming more scarce.

The Forest Service uses the Scenery Management System as the framework for integrating all scenery management data into all levels of Forest Service planning, including the following:

- National overviews.
- Regional plans.
- Landscape province analysis
- Forest plans.
- Watershed, viewshed, or landscape unit analysis.
- Detailed project plans.
- Project implementation.
- Project monitoring.



Nature

Pedestrian Mall

Traffic

Research has shown that high-quality scenery, especially that related to natural-appearing forests, enhances people's lives and benefits society. Therefore, the **Scenery Management System** aids Forest Service managers in providing benefits to people and society. Research findings support the logic that scenic quality and naturalness of the landscape directly enhance human well-being, both physically and psychologically, and contribute to other importanat human benefits. Specifically, these benefits include people's improved physiological well-being as an important by-product of viewing **interesting and pleasant natural appearing landscapes with high scenic diversity.**

Findings from psychological and physiological studies of people under stress, people recovering in hospitals, people in recreation settings, and people in other various settings, prove that natural landscape scenes have restorative and other beneficial properties. This is particularly important when contrasted with built urban environments such as pedestrian malls and commuter traffic routes.

Results of research by Dimberg, Ulrich, and Simons are shown in Figures 1 and 2 below. Figure 1 displays heart rate in beats per minute, with a positive response to spatially open landscapes of high interest. Figure 2 compares positive responses (lower blood pressure) of people responding to nature as opposed to traffic routes and pedestrian malls.

In turn, when people feel better mentally and physically, they have increased on-the-job productivity, increased community involvement, and expanded family interaction; there is, therefore, an improved well-being of society in general.

The benefits of **high-quality scenery** are numerous despite the fact that a dollar value is seldom assigned to it except in regard to real estate appraisals and areas with major tourism influences.

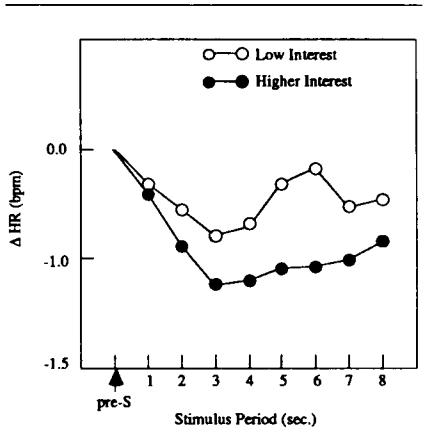


Figure 1. Mean phasic heart rate change expressed in beats per minute (bpm) form the pre-stimulus level for subjects exposed to slides of spatially open landscapes (higher interest) and spatially restricted environments (lower interest). (From Dimberg and Ulrich)

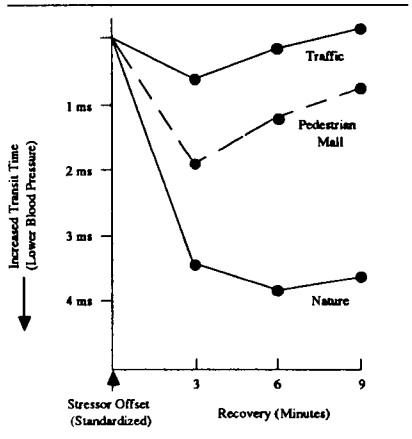


Figure 2. Pulse transit time (systolic blood pressure correlate) during recovery from stress. (From Ulrich and Simons 1986)

Figure 3 compares human physical and psychological responses (skin conductance during recovery from stress) to traffic, pedestrian malls, and nature. Figure 4 compares responses (muscle tension during recovery from stress) to the same stimuli.

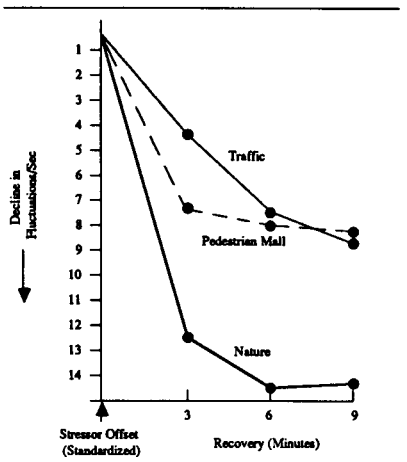


Figure 3. Skin conductance (SCR) during recovery from stress. (From Ulrich and Simons 1986)

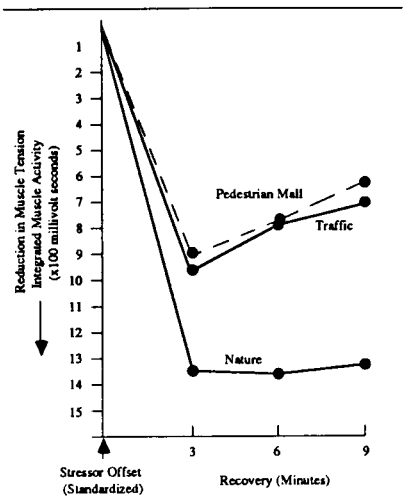


Figure 4. Muscle tension (EMG) during recovery from stress. (From Ulrich and Simons 1986)

It can be concluded that scenery management benefits people who are recreating, traveling for business, or are otherwise passing through wildland environments.

Economists recognize that tourism is becoming the leading industry in many regions in the United States and in many foreign countries. In numerous communities adjacent to national forests, tourism and recreation are replacing the former leading roles of timber harvesting, mining, ranching, and farming. Scenic landscapes and recreational settings help to determine the success of recreation and tourism.

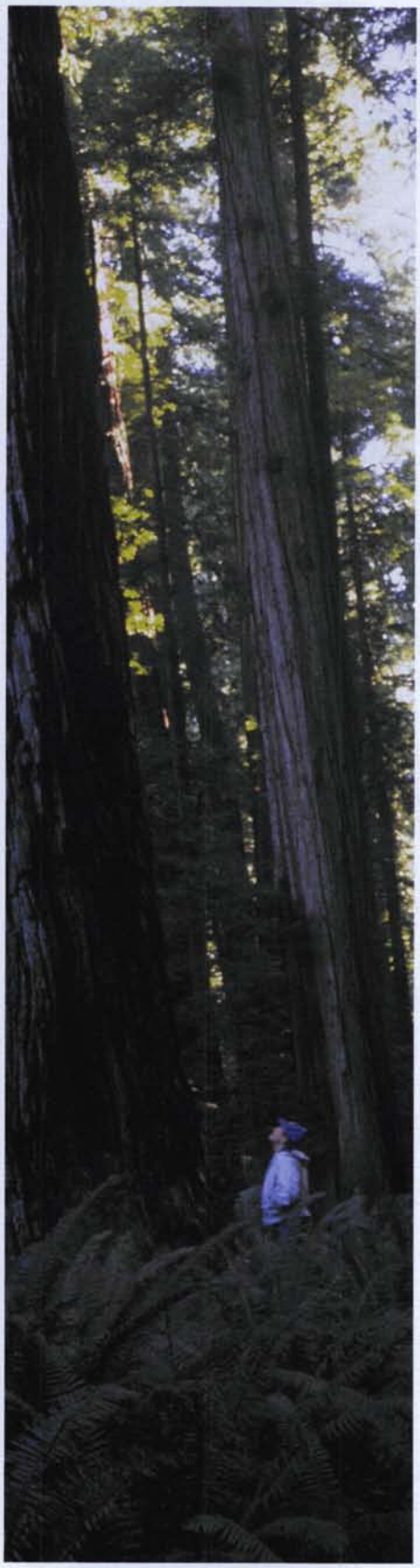
Scenery Management System Objectives

The goal of the Scenery Management System is to create and maintain landscapes having high scenic diversity, harmony, and unity for the benefit of society in general.

- A Scenery Management System should:
  - Be logical and orderly.
  - Serve scenic assessment needs in all levels of planning and implementation, from broad-scale land planning to detailed project planning.
  - Produce goals and objectives useful for scenery management.
  - Allow scenery managers to be capable of interacting with values and needs of other resource disciplines.
  - Have a systematic approach so that others are able to replicate its results.
  - Serve as a communicative tool.

- A Scenery Management System should identify the following:
  - **Landscape character**, including existing landscape character attributes, potential landscape character, and the relative scenic attractiveness of various landscapes within a geographic area.
  - **Visual sensitivity** of landscapes, based on the context of the landscape being viewed, perceptual factors of people viewing those landscapes and different visual characteristics of a landscape.
  - **Scenic integrity**, including the continuum of scenic integrity levels, current integrity of landscapes, role of structures in the landscape, guidelines for determining cumulative scenic effects and allowable duration of scenic effects, and examples of scenes with various human actions that affect scenic integrity.

Handbook Objectives



Landscape aesthetics encompasses all senses—sight, smell, hearing, taste, and touch. However, research indicates that people receive 87% of their information about the world through their eyesight alone. Because the preponderance of human senses are by sight, this handbook deals primarily with the scenic aspects of a landscape. Other aesthetic values—sound, smell, touch, and taste—are also important, but are not handled in detail in this handbook.

The development of *Landscape Aesthetics: A Handbook for Scenery Management* was guided by the following:

- Research findings.
- Literature review (from 1732 to 1992).
- Past experience in application of *The Visual Management System* -- the handbook was issued in and has been used since 1974.
- Past experience in application of subsystems of *The Visual Management System* developed after 1974.
- Advances in technology.
- Constituent demand for high-quality scenery.

The goal of this handbook is to explain scenery management as an integrated part of ecosystem management for all levels of planning, including forest planning. The **objectives** of this handbook are as follows:

- To develop and document a system of scenery management responsive to both current and future needs.

- To develop a state-of-the-art Scenery Management System for resource managers that may be understood by constituents; to provide an overall framework for all landscape information for input into forest planning and project planning; to allow for creative and responsive alternative solutions for planners.

- To establish uniform procedures to identify demand for scenic quality and to identify differences between current supply of and future demand for scenery.

- To establish uniform terminology and procedures to identify and classify physical and perceptual aspects of scenery.

- To establish direction for management of positive natural attributes and cultural elements in landscapes (including natural-appearing vegetation, landform, rockform, waterform, and positive human alterations) and of the overall desired scenic impression. These positive elements are defined as landscape character, and they are used to describe:
  - Existing landscape character.
  - Scenic attractiveness.
  - Long-established cultural landscape character.
  - Existing landscape integrity.
  - Landscape character goals.

- To establish direction for management of "cultural" scenic attributes in human-altered landscapes. In these landscapes, landscape character goals may include selected cultural elements accepted over time to become expected images, that contribute to high-quality scenery.

- To establish uniform procedures to identify and describe movement toward the desired landscape character in terms of scenic diversity and overall positive elements, described as form, line, color, and texture. Scenic integrity objectives establish limits of acceptable human alterations as the landscape moves toward a landscape character goal.

- Chapter 1 introduces **landscape character**—the overall visual impression of landscape attributes, the physical appearance of a landscape that gives it an identity and "sense of place." Landscape character ranges from a natural landscape to one that is urban - from a pristine wilderness to a built environment.

- Chapter 2 discusses **scenic integrity**—the amount of human-caused deviation in form, line, color, and texture in a landscape.

- Chapter 3 explores **constituent information**-expectations, desires, preferences, acceptable levels of quality, behaviors, and values. This information assists Forest Service managers in determining desired and preferred travelways, use areas, landscape character, and scenic integrity.

- Chapter 4 examines **landscape visibility**—one's ability to see and perceive landscapes. Landscape visibility is a function of many interconnected considerations such as context of viewers, duration of view, degree of discernible detail, seasonal variations, and number of viewers.

- Chapter 5 discusses **planning and integration**—it establishes a better understanding of the connectivity with other resource values such as soil, water, vegetation, geology...etc. The chapter also describes establishment of landscape character goals and scenic integrity objectives.

A Context for Scenery Management

Ecosystem management (EM) provides the foundation for planning and the necessary context and basis for managing scenery. **Landscape Aesthetics, A Handbook for Scenery Management** encourages integration throughout the entire systematic approach from inventory, analysis, planning, design, and implementation, to monitoring. Integration within the ecosystem planning framework relates the scenery management system (SMS) to other relevant planning models for the biological, physical and social dimensions of ecosystems.

- An **ecosystem** is a community of interacting organisms (including people) and their environment that functions together to sustain life.

- An **ecosystem management** approach broadens the context and understanding of ecological communities and the environment.

- Through the integration of **physical, biological,** and **cultural/social** information in an interdisciplinary atmosphere we strive to better understand ecological principles and their relationships (such as landscape pattern with components, structures, functions, and processes of our ecosystem), to prescribe management which promotes sustainability.

- The **essence of the ecosystem management** conceptual framework deals with five basic questions:
  - How did the system evolve?
  - What is sustainable?
  - What do we have?
  - What do we want?
  - How do we move conditions from what we have to what we want?

- An ecosystem may be described on the head of a pin or encompass our planet (or any level in between). An ecosystem is always sandwiched between larger and smaller ecosystems described in the National Hierarchical Framework of Ecological Units such as, the Ecoregion or Province, the Section or Subsection, the Landtype Association, or Landtype.

- Within a range of sustainable ecosystem management parameters there may be several landscape character options or variations that provide more diverse scenic character or that best reflect the integrity of special places. These solutions should be encouraged as the desired condition where scenic values are high.

Scenery Management Application

The Scenery Management System applies primarily within the cultural/social dimension of ecosystems management but, also has critical links to the biological and physical dimensions at various scales.

Within the ecosystem management context the cultural/social dimension deals with three basic questions:

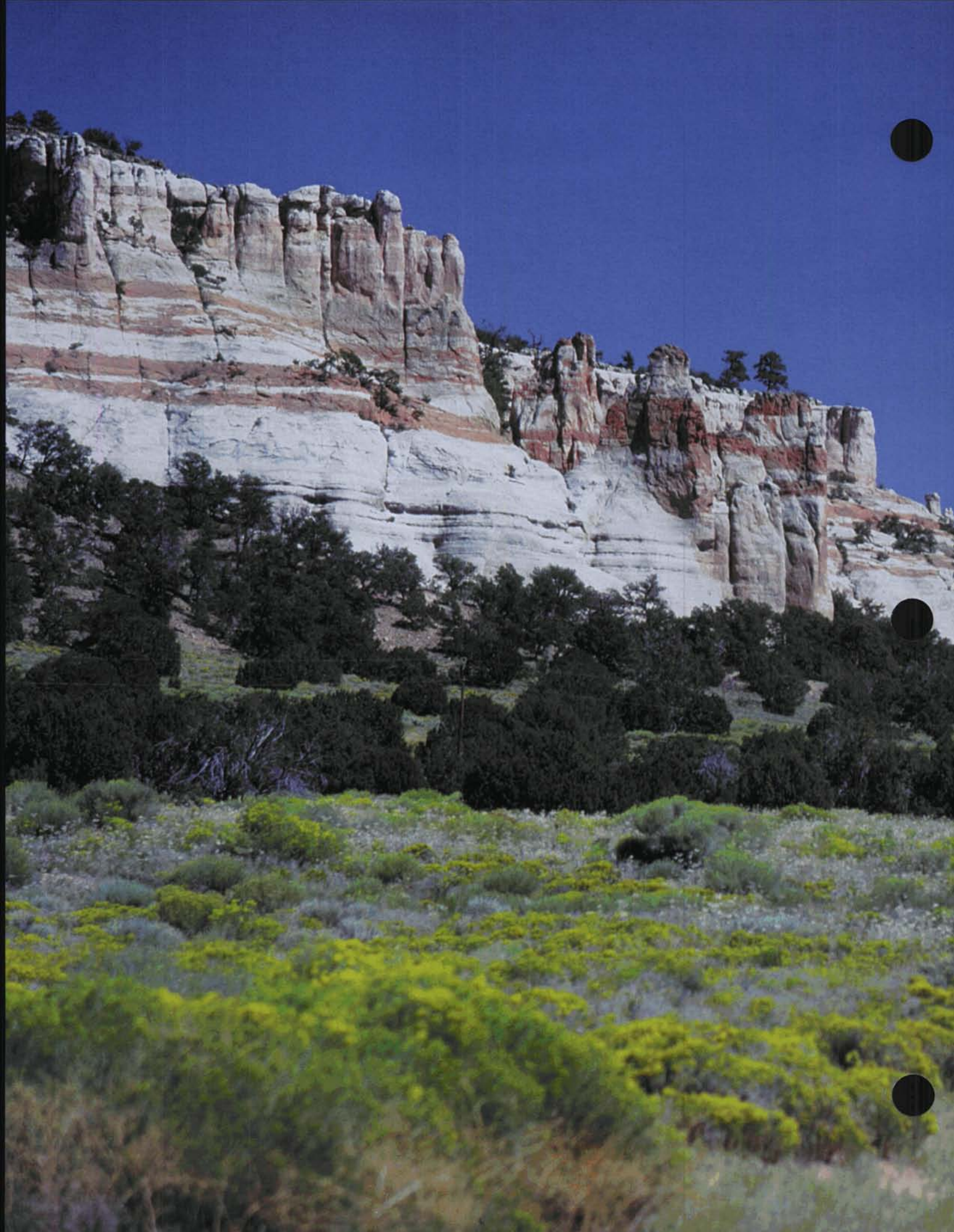
- How do people influence the landscape?
- How does the landscape influence people?
- In time and space what are the apparent trends and risks?

The frame of reference in the social dimension of EM varies from an individual human to large communities and their relationships to one and another and to the landscape in terms of time and space.

Biological and physical dimensions look at how people influence the landscape and how the landscape influences people through time (past and present) and space. Combined with the social component, this defines the reference of acceptable ecological sustainability in which scenery management should operate.

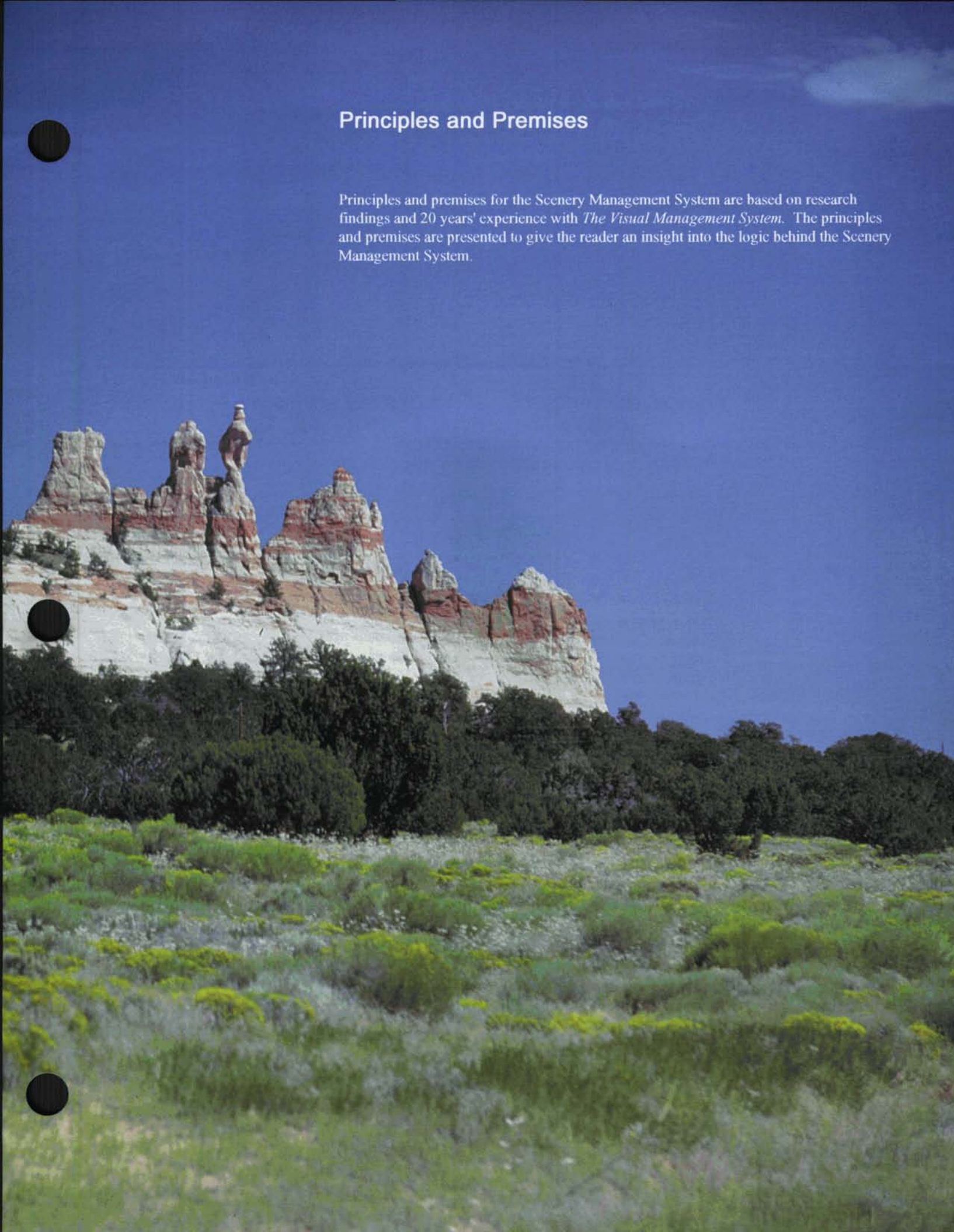
But the modern city-dwelling race of men, if it is to exist at all for any length of time, must obtain in unspoiled landscape some relief from insistent man-made conditions.

Henry Vincent Hubbard and
Theodora Kimball, 1917.



Principles and Premises

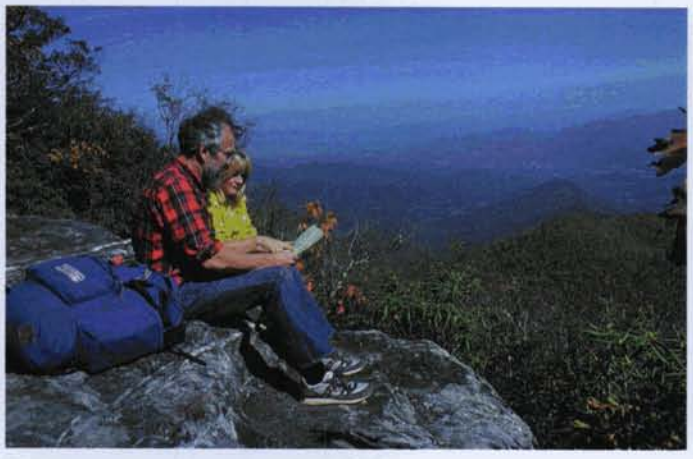
Principles and premises for the Scenery Management System are based on research findings and 20 years' experience with *The Visual Management System.* The principles and premises are presented to give the reader an insight into the logic behind the Scenery Management System.



Fundamental Principles

1● Biological, physical and social factors create and influence scenery and interact to determine landscape character.

2● Landscape character varies greatly with the interaction of environmental factors.

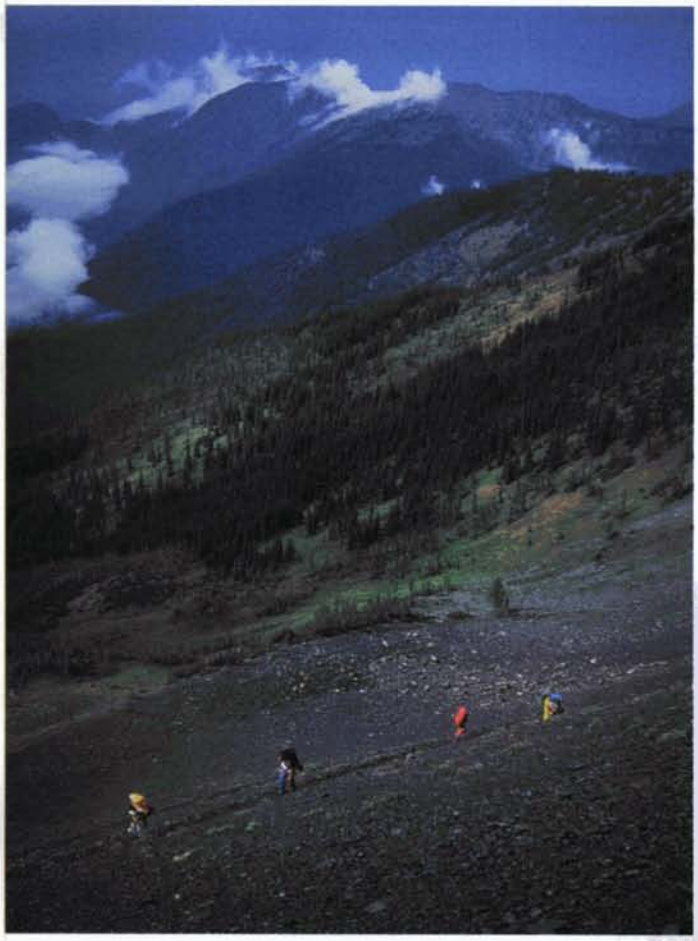


3● People have the ability to perceive landscape character and develop **expected images**.

4● Through various activities, people have the ability to modify landscape character and scenic conditions and have often done so.

5● Such changes in landscape character and scenic condition often modify, suppress, or replace the original landscape character.

6● People value most highly the more scenic landscapes.



7● Generally, **natural-appearing landscapes** are the most valued.

8● Resource managers can design their activities to reduce adverse impacts on landscape character and scenic integrity.

9● People have the ability to establish goals to maintain or create **desired landscape character**.

10● People have the ability to apply ecological, technical, and design knowledge to meet scenery management goals and objectives.

11● In some situations, resource managers perptuate or create desired scenic environments to provide an improved quality of life.

Basic Premises

1. People value highly scenic landscapes.

- Research shows that there is a high degree of public agreement regarding scenic preferences. This research indicates that people value most highly the more visually attractive and natural-appearing landscapes. However, the fact that preferences may vary somewhat in different regions or cultures must be recognized.

- Constituents have a voice, through forest planning, in establishing landscape character goals and scenic integrity objectives.

2. Scenery contributes to a "sense of place", a mutually shared image.

- *"The majority of the recreation-oriented people who visit the National Forests have an image of what they expect to see. Such an image or mental picture is generated by available information concerning a particular area and the person's experience with that or similar areas. The image produced represents the knowledgeability, expectedness, romanticism, and emotionalism associated with features within the area. Obviously, several images may exist simultaneously, even within a single individual, and yet a particular geographic region tends to have an identifiable image."* Floyd Newby, 1968.

3. Landscape character can be defined and managed.

- All landscapes have definable landscape character attributes. In most national forest settings, landscape character attributes are positive natural elements, such as landform, vegetative patterns, and water characteristics. In pastoral or rural/agricultural settings, positive cultural elements may include historic elements such as split rail fences, stone walls, barns, orchards, hedgerows, and cabins. In urban settings, landscape character attributes may include a fabric of architectural styles. Combinations of these attributes define landscape character. The concept of landscape character is embodied in the "image of an area."

- Landscapes that contain both diversity and harmony have the greatest potential for high scenic value.

- Existing landscape character can be described at any scale associated with the aesthetic image of a place or landscape.

4. Scenic attractiveness is important to constituents and is defined and mapped.

- Scenic attractiveness measures the scenic importance of a landscape based on human perceptions of the intrinsic beauty of landform, water characteristics, and vegetation pattern. In combination, these attributes determine the natural scenic beauty of a landscape.

- Environmental factors and natural forces create scenic attractiveness.

- Scenic attractiveness can be described as combinations of attributes in natural or natural-appearing landscapes. Landscape architects have developed criteria to

inventory and map scenic attractiveness into three classes: A—Distinctive, B—Typical or Common, and C—Indistinctive.

- In addition to mapping natural attributes of landform, water characteristics, and vegetation patterns, it may also be appropriate to map scenic attractiveness based on positive cultural elements, such as split-rail fences, stone walls, barns, orchards, hedgerows, and cabins.

5. Natural events may affect scenic attractiveness; generally, human activities do not.

- Scenic attractiveness of landscapes may be altered, either temporarily or permanently, by natural events such as hurricanes, tornadoes, floods, volcanic eruptions, earthquakes, and wildfires.

- In most cases, human activities cannot modify scenic attractiveness. It remains constant, even if a direct human activity, such as timber harvesting, alters scenic integrity. An indirect human activity, such as fire suppression leading unintentionally to plant species succession, may affect scenic integrity and diversity of vegetative character.

6. People cannot always distinguish between natural landscapes and those resulting from historic cultural alterations.

- Over time, some areas have been changed in a manner that creates a new landscape character with positive scenic attributes. These are called desired pastoral landscapes. For instance, pithouse-village sites can add texture to a landscape. The house pits and modified vegetation can increase scenic diversity due to the rich soils and water retention capability of these sites.

- Cultural landscapes are those with elements (either structural, e.g. fences, buildings, or roads, or modified natural areas, e.g. fields, hedgerows, windbreaks, canals, or earth mounds) that produce an integrated whole reflecting a primary cultural activity. Examples include farmsteads, military posts, and plantations.

- Examples of these desired pastoral landscapes include natural-appearing former cotton plantations now revegetated with forests, the mixed forests and fields of the Shenandoah Valley lands that have been cleared to create large open valleys, and mountaintop clearings or "balds" that offer unique scenic viewing opportunities.

7. The public values cultural enclaves in landscapes that are natural or natural-appearing.

- Small areas within natural or natural-appearing landscapes, historically modified but having a new character with positive scenic attributes, are called desired cultural enclaves. These cultural enclaves are normally small points or nodes within larger natural-appearing landscapes.

- Cultural enclaves normally remain subordinate to the overall landscape. They include such elements as historic structures, split rail fences, stone walls, orchards, and other cultural attributes.

8. Scenic integrity is important.

- Scenic integrity is defined as the degree of direct human-caused deviation in the landscape, such as road construction, timber harvesting, or activity debris. Indirect deviations, such as a landscape created by human suppression of the natural role of fire, are not included.
- Scenic integrity is evaluated by measuring degree of alteration in line, form, color, and texture from the natural or natural-appearing landscape character or from the established landscape character accepted over time by the general public. This is done by measuring changes in scale, intensity, and pattern against the attributes of that landscape character.

9. Visual absorption capability is an important tool.

- Different landscapes have differing intrinsic abilities to absorb human alterations without loss of landscape character and without reduction in scenic condition.
- Visual absorption capability depends on the landscape character attributes, landform complexity, and environmental factors, such as climate.

10. Desires of constituents must be considered.

- Constituents demand protection and management of scenery in national forests. They have expectations, desires, preferences, behaviors, acceptable levels of quality, and values of landscape character and scenic integrity.
- Not all landscapes currently exhibit landscape character or scenic integrity desired by the public.

11. Desires of constituents are synthesized into preferred landscape character and preferred scenic integrity for use in forest planning.

- Landscape architects and forest planners, with the help of ecologists, silviculturists, and others, determine landscape character themes. These themes must recognize both biological capability and economic reality.

12. Landscape visibility is significant.

- People view all lands from *somewhere* at *some time*. Landscape visibility is subject to many essential, interconnected considerations. These include context and experiences of viewers, expected images, position of observer in the landscape, number of people, and viewer scrutiny of the landscape caused by duration of view, viewing distance, air clarity, and visual magnitude.
- Observer position depends on location of travel routes, residences, recreational areas, and bodies of water.
- A landscape readily accessible to viewing by large numbers of people is often subject to greater scrutiny of its landscape character and scenic integrity. The context of view, experiences of viewers, and expected image of viewers also affect landscape visibility.

- People have greater scrutiny of landscape character and scenic integrity when they view landscapes close-up and for longer periods of time, or when they look at landscape surfaces from aerial views or at nearly perpendicular angles in steep terrain. People also have greater scrutiny of landscape character and scenic integrity when they view landscapes in a clear atmosphere or when landscape compositions focus their attention.

- Landscape visibility can be maintained or improved by developing vista sites, or reduced by vegetation regrowth or various management activities.

13. Types of viewers are important.

- Different types of people, engaged in specific activities, have varied concerns about scenic beauty of landscapes.

- Types of viewers will vary by geographic region, as well as by travel route or use area, such as a developed recreation site, urban area, or backcountry area. Viewer expectations will vary according to the landscape setting and available recreation opportunities, primary motives of the viewer, and location, standards, and uses of travelways.

- Constituents' varied concerns and expectations need to be identified and recognized to determine the relative importance and value of aesthetics in a national forest.

14. Management activities vary in their intensity.

- Some national forest resource management activities, such as range improvements, at least have potential for adverse effects on scenery. Others, like some timber harvest methods, have major scenic effects.

- How visual elements of line, form, color, texture, and pattern of such activities relate to, or contrast with, natural landscape character attributes is important because we have the ability to alter, conserve or damage landscape character.

- Scenery management goals must consider other national forest resource management activities.

15. Landscape settings required for certain management activities are important.

- In certain cases, natural landscapes need to be maintained in order to meet goals for landscape settings for other resources. Such goals may include **landscape character** and **scenic condition** to meet some wildlife habitat needs, spiritual, recreational, watershed, or other resource management goals and objectives.

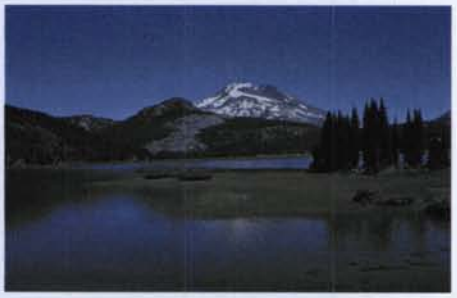
- In many instances, other resource management goals will be complementary to natural or natural-appearing landscape character goals and the associated scenic integrity objectives. In these cases, all resource goals will reinforce each other.

- On the other hand, certain combinations of resource goals may compete with each other. Mineral extraction and some timber harvest methods, for example, may require alteration of natural or natural-appearing landscape character and the associated scenic integrity objectives.

16. Diversity is desirable.

- Harmonious diversity in any landscape generally enhances scenic beauty. Increasing scenic diversity may lead to an increased level of public acceptance. Increased scenic diversity may also allow for greater ecological diversity.
- However, scenic diversity needs to be selective and is not always aligned with ecological diversity. Activities undertaken to improve scenic diversity should be weighed against their possible negative effects on sustaining ecological systems.
- Conversely, activities proposed to create diversity toward a sustainable ecosystem could lead to undesirable scenic effects if care is not taken to consciously manage scenery.

17. Harmony is desirable.



- Harmony in the landscape generally increases scenic beauty. The public will normally not be aware of action taken to maintain visual harmony; it generally sees only discordant elements. Landscape harmony will lead to an increased level of public acceptance.
- However, management activities are not always aligned with landscape harmony; activities to manage other resources may destroy the harmony of a landscape. Land managers must weigh such activities against their possible negative effects upon landscape harmony.

18. Special places are important.

- Special places are locations in the landscape with unique importance and meaning. At times, special places are isolated, small areas or spots; at other times, they are large areas of land.
- Special places often have "place names" indicating local or regional significance. Special places may be merited strictly because of scenic attributes.
- Large special places of scenic value include areas such as Mt. Rogers in Virginia, Shining Rock in North Carolina, Redfish Lake in Idaho, and the Columbia River Gorge in Oregon and Washington.
- They may also be small areas, such as a rocky grotto, a grove of unique trees, a special camp spot, a small pond or bog, or an isolated rock outcrop. Special places may be remnant vegetative communities or vegetative communities that exist far removed from their normal range.

19. Variations in cultures

- Though the ability to appreciate beauty is strongly linked to culture and varies from individual to individual and group to group, there are cross-human commonalities in the perception of beauty. In other words, beauty is not totally in the "eye of the beholder"; there are some cross-cultural physiological bases of aesthetics.