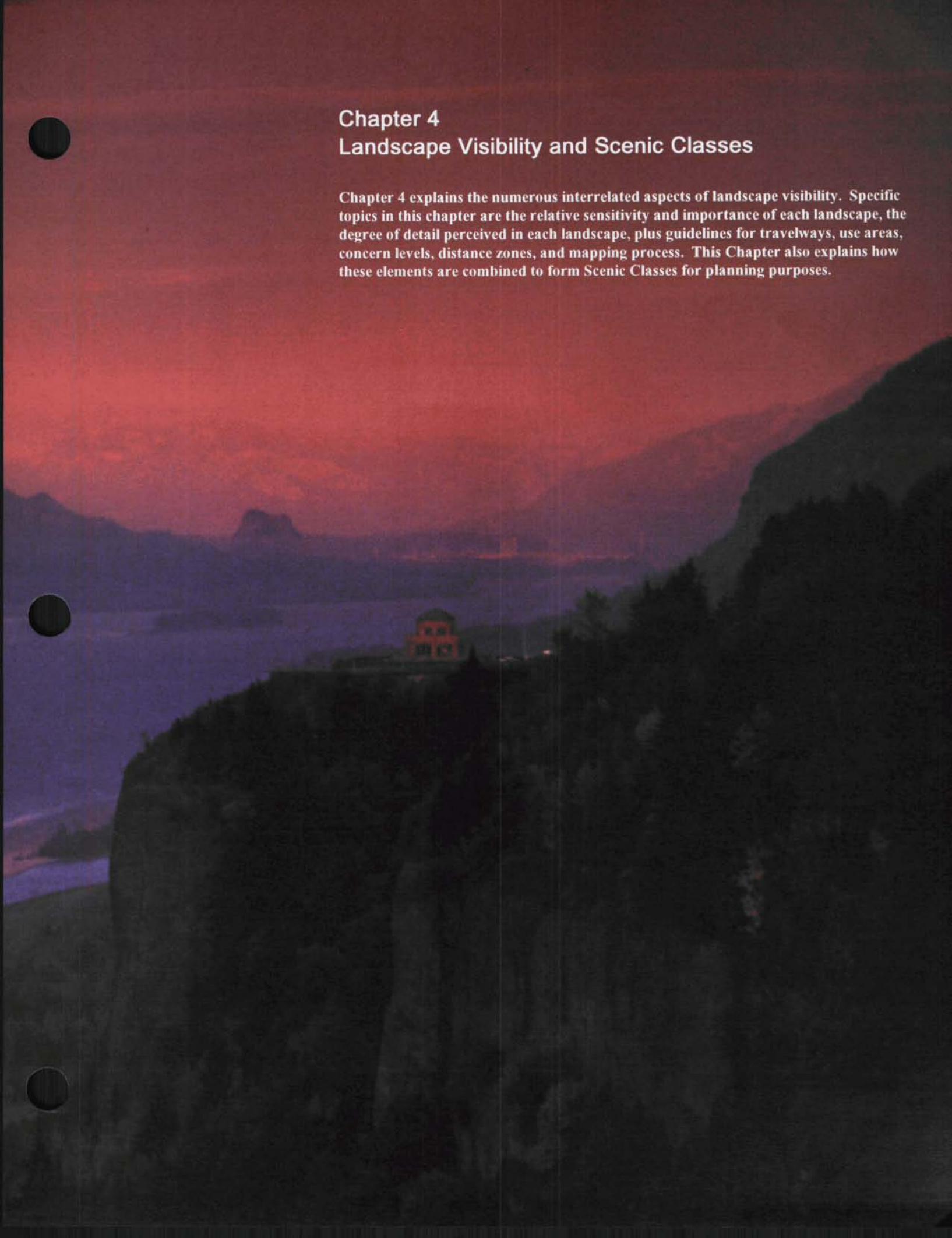
Chapter 4
Landscape Visibility and Scenic Classes

Chapter 4 explains the numerous interrelated aspects of landscape visibility. Specific topics in this chapter are the relative sensitivity and importance of each landscape, the degree of detail perceived in each landscape, plus guidelines for travelways, use areas, concern levels, distance zones, and mapping process. This Chapter also explains how these elements are combined to form Scenic Classes for planning purposes.



Landscape Visibility

Landscape visibility is a function of many essential, interconnected considerations, including:
(1) context of viewers,
(2) duration of view,
(3) degree of discernible detail,
(4) seasonal variations, and
(5) number of viewers.

Purpose

Landscape visibility addresses the relative importance and sensitivity of what is seen and perceived in the landscape.

Discussion

- People see virtually all national forest lands from somewhere at some time; therefore, all national forest landscapes have value as scenery.
- People are likely to view national forest lands from travelways and use areas.
- A large number of viewers with high concern for scenery, who view a landscape in detail for a long period of time, may substantially increase scenic importance of that landscape.
- Conversely, a small number of viewers with low concern for scenery, who view a landscape fleetingly, may substantially decrease scenic importance of that landscape.
- **Landscape visibility** is a function of many essential, interconnected considerations, including the following: (1) context of viewers, (2) duration of view, (3) degree of discernible detail, (4) seasonal variations, and (5) number of viewers.
- The degree of discernible detail is determined relative to the position or location of the observer.

- Examples of **landscape visibility** considerations are:

(1) Context of viewers.

(2) Duration of view.

(3) Degree of discernible detail.

(4) Seasonal variations.

(5) Number of viewers.

A large number of viewers
with high concern for scenery.

A small number of viewers
with low concern for scenery.

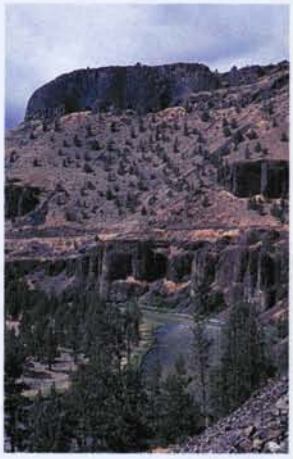
A small number of viewers
with high concern for scenery.

Seen from nearby in closer detail.

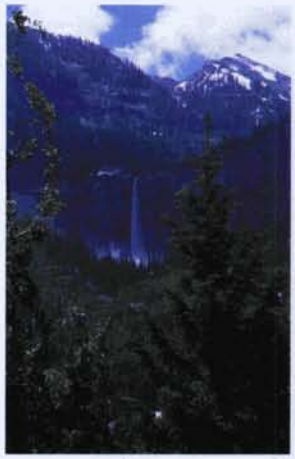
- Sometimes only a small number of people view certain landscapes, but these people have high concern for scenic quality and high expectations of outstanding scenic beauty. When associated with **other related experience-opportunities** such as spiritual quests, introspection, and so on, these landscapes have even higher scenic importance and value. The importance of these landscapes is even greater if these other related experience-opportunities are available only occasionally.

- **Other natural resource values**, such as wilderness, wildlife, or old-growth, may create needs for natural-appearing landscapes and ultimately may raise the importance of maintaining high levels of scenic quality and landscape settings. These other natural resource values relate to viewer context.

- Landscapes seen close-up are more visually sensitive than those seen in muted detail from greater distances.



- When people view landscape surfaces from angles of approximately 90 degrees, they generally subject those landscapes to more visual scrutiny than those viewed at relatively flat angles.



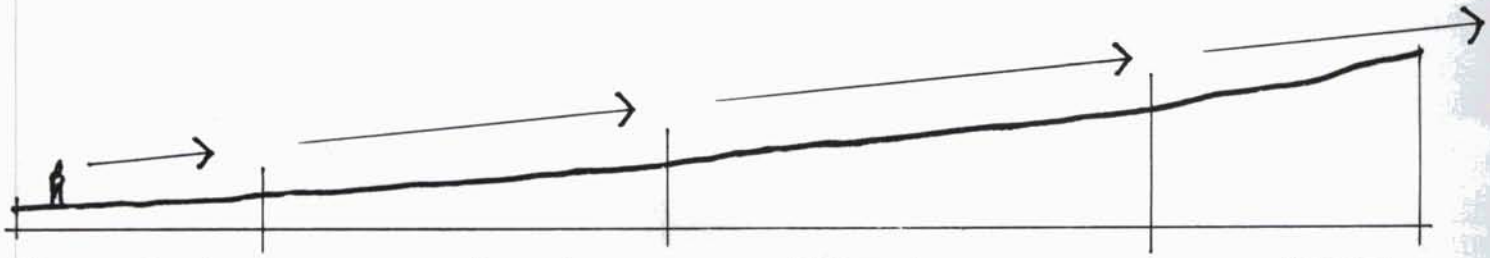
- When people see landscapes in the foreground of, or adjacent to, focal points, they subject that particular landscape to more visual scrutiny.

- When people view landscapes at middleground distances, they often view them more coherently and in better context with their surroundings than they do foreground landscapes.

- Many middleground national forest landscapes are evenly textured, and human activities that dominate natural form, line, or texture will contrast strongly. This may make some middleground landscapes more sensitive to visual scrutiny than some foreground landscapes.

- Scenic values increase as the terrain allows people to have longer views and as clear air allows them to observe crisp detail.

- Landscape viewing can be subdivided into distance zones for classification, analysis, and simplification of inventory data.



- Distance zone categorization can be strengthened by relating it to perceivable landscape details that people relate to universally, such as leaf texture, tree limb patterns, landform configuration, and so on.

- Seasonal differences may affect the sensitivity of landscape visibility evaluations. "Leaf-on" and "leaf-off" conditions in deciduous forests will modify landscape visibility. Likewise, persistent summer fog in some coastal locations will decrease landscape visibility. As a general rule, determine **landscape visibility** for the most sensitive situation.

- Vegetative screening, being dynamic, is important for short-term, detailed planning. Normally, vegetative screening is inappropriate to consider in long-term, broad-scale planning, such as forest planning.

Elements of Landscape Visibility

Portions of landscapes visible from travelways and use areas are important to constituents for their scenic quality, aesthetic values, and landscape merits.

Landscape Visibility consists of three elements:

1.) Travelways and Use Areas
2.) Concern Levels
3.) Distance Zones

Travelways and Use Areas

Existing travelways and use areas are identified and classified in order to determine which existing observer positions to use in the landscape visibility analysis. Inventory procedures for landscape visibility, including concern levels, and distance zones, are discussed in detail later in this chapter.

- People utilize **travelways and use areas** throughout the national forests. In addition, they utilize travelways and use areas located outside of national forest boundaries that provide views into national forests.

- **Travelways** represent linear concentrations of public-viewing, including freeways, highways, roads, railroads, trails, commercial flight paths, rivers, canals, and other waterways.

- **Use areas** are spots that receive concentrated public-viewing use. They include national forest visitor centers, vista points, trailheads, campgrounds, picnic grounds, swim beaches, marinas, resorts, ski areas, and other recreation sites. Use areas also include urban and suburban areas, towns and villages, subdivisions, parks and golf courses on private lands, or other public lands within or adjacent to national forests.

- Portions of landscapes visible from travelways and use areas are important to constituents for their scenic quality, aesthetic values, and landscape merits.

- Portions of landscapes seldom seen from travelways and use areas are also important to constituents for their aesthetic and scenic values. They may be of even greater importance as special recreation settings and as opportunities for people seeking solitude.

On-the-ground view of Mt. Hood shows careful scenery management.

- Travelways that lead to important scenic features, residential areas, resorts, recreation areas, unique natural phenomena, wilderness trailheads, national parks, State and county parks, and other areas attract a higher percentage of users having high concern for scenic quality, thus increasing the importance of those travelways.

Aerial view of Mt. Hood reveals an overview with a different scenic effect.

- The public is becoming more concerned about aerial views of National Forest System lands from commercial and private aircraft. Foregrounds and middlegrounds of travelways and use areas have historically been protected. Outside of these viewsheds, the General Forest Zone has often been neglected from a scenery management standpoint.

Concern Levels

Landscape are viewed to varying degrees from different locations and subsequently differ in their importance. To assist scenic inventory and analysis, this importance can be ranked by concern levels.

Concern levels are a measure of the degree of public importance placed on landscapes viewed from travelways and use areas. Divide concern levels into three categories: levels 1, 2, and 3. At the inventory stage, the type of area and its level of use is an adequate indicator of the level of interest that people are likely to have in the surrounding landscape. Base concern levels on past experience and existing planning data. Supplement this data as new constituent information becomes available.

The following matrix is a guide for determining concern levels. It can be tailored to fit local conditions.

HIERARCHY OF CONCERN LEVELS

	Interest in Scenery		
	High	Moderate	Low
Primary Travelway/Use Area High Use	1	2	2
Primary Travelway/Use Area Moderate Use	1	2	2
Primary Travelway/Use Area Low Use	1	2	3
Secondary Travelway/Use Area High Use	1	2	2
Secondary Travelway/Use Area Moderate Use	1	2	3
Secondary Travelway/Use Area Low Use	1	2	3

Primary Travelways and Use Areas

National and/or regionally important locations largely associated with recreation and tourism use. Examples include:

- Primary roads, trails, areas used by motorists, hikers, bicyclists, and equestrians within national forests, national parks, national recreation areas, wildernesses, wild and scenic rivers, scenic highways, Forest Service scenic byways, and other special designation areas.
- All public transportation systems of national importance, including interstate highways, waterways, and railways.
- Primary areas of fishing, swimming, boating, and other active or passive water recreation.
- Primary recreation areas (vista points, campgrounds, picnic grounds, beaches, visitor centers, trail camps, and others).

- Primary resorts and winter sports areas.
- Highly sensitive communities.
- Primary summer home tracts.
- Primary geological areas.
- Designated scenic areas.
- Primary botanical or forest demonstration areas.
- Primary historical sites and areas.
- Areas of primary importance for wildlife observation.
- Special places of local or regional importance.
- Areas of primitive, semi-primitive non-motorized and semi-primitive motorized recreation opportunities, identified as important by constituents.

Secondary Travelways and Use Areas

Locally important locations associated with all types of use including recreation and tourism.

- All Federal, State, and primary county or forest system roads and highways not listed under primary areas.
- Communities not listed under primary areas.
- Other primary uses not included under primary areas.
- Areas of semi-primitive non-motorized and semi-primitive motorized recreation opportunities identified as important by constituents and not listed under primary areas.
- Secondary county and forest system roads that fit the above definition.
- Secondary trail systems.
- All roads leading directly to secondary areas of interest and recreation composites.
- Secondary recreation areas (vista points, campgrounds, picnic grounds, etc.).
- Secondary uses of fishing, swimming, boating, and other active or passive recreation on or adjacent to water bodies, such as streams or lakes.
- Secondary geological areas.
- Secondary botanical or forest demonstration areas.
- Secondary summer home tracts.
- Secondary historic sites.

- Areas of secondary importance for wildlife observations.

Visibility analysis is a continuous process. The scenery analysis may need to be refined as new information is received from constituents, as new travelways and use areas are developed, or as public use patterns and travel patterns change.

Distance Zones Plus Seldom-Seen Areas

Generally three distance zones, plus seldom-seen areas, are identified for forest planning and four distance zones, plus seldom-seen areas, are identified for project level planning. The fourth zone is immediate foreground. Because of its limited depth, immediate foreground should never be used as a separate zone in broad-scale forest planning but rather combined with the balance of the foreground area. All four distance zones and seldom-seen areas are defined and described in the following section.

Immediate Foreground (ifg): 0 to 300 feet

At an immediate foreground distance, people can distinguish individual leaves, flowers, twigs, bark texture, small animals (chipmunks and songbirds), and can notice movement of leaves and grasses in light winds.

They can also receive other sensory messages at an immediate foreground distance, such as sounds of small animals, birdcalls, wind whispering through leaves and grasses, and pungent odors or sweet smells. Texture is made up of individual leaves, needle clusters, bark patterns, and twig patterns. Details are important.

Foreground (fg): 0 - 1/2 mile

At a foreground distance, people can distinguish small boughs of leaf clusters, tree trunks and large branches, individual shrubs, clumps of wildflowers, medium-sized animals (squirrels and rabbits), and medium-to-large birds (hawks, geese, and ducks). At this distance, people can also distinguish movement of tree boughs and treetops in moderate winds.

At a foreground distance, people receive other sensory messages, such as sounds of medium-sized animals, birdcalls, a moderate wind whistling through branches, and smells of the forest. Texture is largely made up of boughs, large branches, and visible portions of trunks. Individual forms are dominant.

Middleground (mg): 1/2 to 4 miles

Middleground is usually the predominant distance zone at which national forest landscapes are seen, except for regions of flat lands or tall, dense vegetation. At this distance, people can distinguish individual treeforms, large boulders, flower fields, small openings in the forest, and small rock outcrops. Treeforms typically stand out vividly in silhouetted situations. Form, texture, and color remain dominant, and pattern is important. Texture is often made up of repetitive treeforms.

In steeper topography, a middleground landscape perspective is similar to an aerial one. Because the viewer is able to see human activities from this perspective in context with the overall landscape, a middleground landscape having steep topography is often the most critical of all distance zones for scenery management.

Background (bg): 4 miles to horizon

At a background distance, people can distinguish groves or stands of trees, large openings in the forest, and large rock outcrops. Texture has disappeared and color has flattened, but large patterns of vegetation or rock are still distinguishable, and landform ridgelines and horizon lines are the dominant visual characteristics. As a result, the landscape has been simplified. The role of background in providing scenic quality lies mainly in its capacity as a contrasting and softened backdrop, a pleasantly distant vista, or a strikingly beautiful focal point.

Seldom-Seen Areas (ss)

Topography sometimes prevents portions of landscapes from being viewed at any distance from the selected travelways or use areas. These landscapes, not visible in the foreground, middleground, or background from any of the selected travelways or use areas, are considered seldom-seen (ss) since we know they may be seen, at a minimum, from aircraft and by the occasional viewer wandering through the forest.

Distance zones of travelways and use areas are delineated as part of the scenery visibility mapping and analysis process described below.

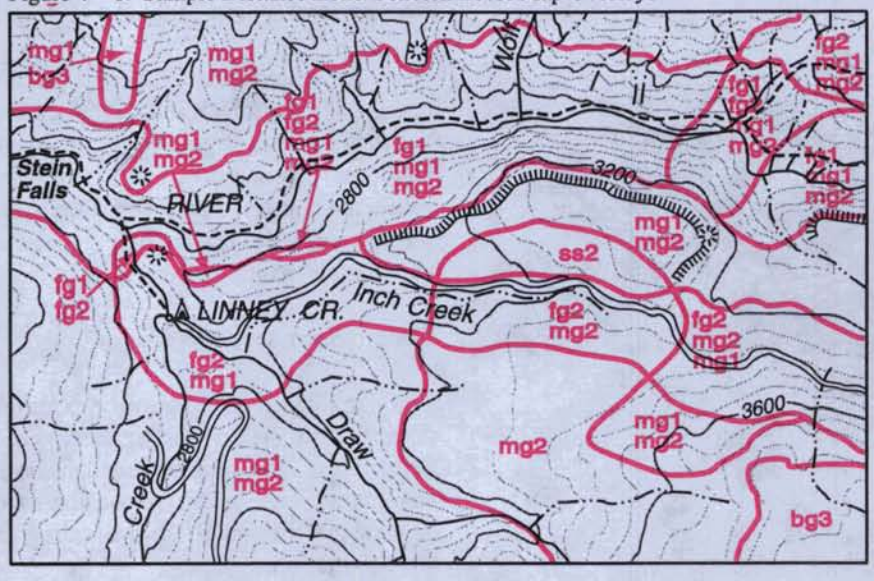
Visibility Mapping Process

The first step in broad-scale inventory mapping is to select and locate on a map the travelways and use areas, which will be used to identify landscape visibility. These travelways and use areas may be on, traversing, or have potential views of national forests and grasslands.

The second step is to determine the importance of scenery to viewers, and to assign one of the three concern levels to all these travelways and use areas. Different portions of a single travelway or use area may have different concern levels.

The third step is to map the visibility and distance zones of the selected travelways and use areas. For broad-scale planning such as forest planning, use topography, rather than vegetation, to determine and delineate potentially visible areas in the foreground (fg), middleground (mg), and background (bg) distance zones. All areas not identified as potentially visible from the selected travelways and use areas are mapped and identified as seldom-seen (ss) areas. See Figure 4-1. Two different methods for determining visibility and distance zones are described later in this chapter.

Figure 4 – 1. Sample Distance Zone/Concern Level Map Overlays.



Mapping distance zones in a **flat landscape** suggests a slightly differenct approach because of the lack of topographic relief. For foregrounds, map a corridor extending a minimum of 1,320 feet (1/4 mile) from each side of a travelway or from the boundaries of a use area. The area beyond this foreground zone is mapped as middleground for topographic features that protrude above the surrounding terrain. The rest of the middleground, which is essentially flat, is normally mapped as middleground at one concern level lower than the travelway or use area in question.

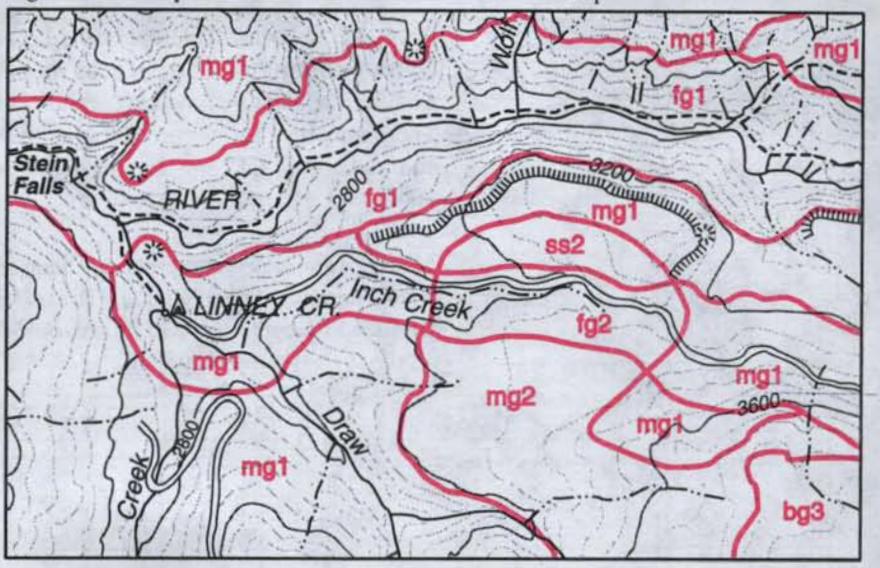
The fourth step in broad-scale planning is to combine the information gathered so far and, using the matrix in Table 4-1 below, produce a map that assigns a single concern level and distance zone to all "seen" areas. Areas that have not been identified as "seen" are labeled "seldom-seen" and are assigned a concern level based on constituency analysis. Even though an area is "seldom-seen" and is not easily accessible, there may be concern for its aesthetic and scenic values. See Figure 4-2 for sample map.

Table 4 - 1. Distance Zone/Concern Level Matrix.

	fg1	mg1	bg1	fg2	mg2	bg2	fg3	mg3	bg3
bg3	fg1	mg1	bg1	fg2	mg2	bg2	fg3	mg3	bg3
mg3	fg1	mg1	bg1	fg2	mg2	bg2	fg3	mg3	
fg3	fg1	mg1	bg1	fg2	mg2	fg3	fg3		
bg2	fg1	mg1	bg1	fg2	mg2	bg2			
mg2	fg1	mg1	bg1	fg2	mg2				
fg2	fg1	mg1	fg2	fg2					
bg1	fg1	mg1	bg1						
mg1	fg1	mg1							
fg1	fg1								

The most restrictive distance zone/concern level can be easily determined by use of this matrix. If an area has been identified as both middleground-concern level 2 (mg2) and foreground-concern level 2 (fg2), these can be compared—mg2 in the left column versus fg2 in the top row to determine that fg2 is usually the proper distance zone/concern level for that area. In some cases, a middleground landscape may be more sensitive to visual scrutiny than a foreground landscape—constituency analysis will help to make that determination.

Figure 4–2. Sample Distance Zone/Concern Level Final Map.



For project-level planning, identify seen areas in greater detail than in forest planning by mapping seen areas from numerous observer positions along existing travelways and in use areas. Observer positions and seen areas may also be mapped from proposed or planned travelways and use areas.

Also for project-level planning, use both topographic and vegetative screening to assess visibility; use the most sensitive situation, such as any "leaf-off" condition, clear air period, or season of high color contrast.

There are two methods of mapping visibility and the distance zones of seen areas and of mapping seldom-seen areas: manual and computerized.

You may wish to map the distance zones for each concern level on separate base maps. The base maps should be identical in scale to allow overlays to facilitate consolidation of the information, application of the matrix, and the next steps in the inventory process.

Manual Seen Area Mapping

Utilize **manual seen area mapping** where computerized systems or usable digital terrain data are not available. Manual methods can be cumbersome and time-consuming, and lack the accuracy of computerized methods.

A coarse map of seen areas and seldom-seen areas can be developed by driving, walking, or boating the selected travelways and use areas with a topographic base map or, preferably, an orthophoto quadrangle. Similarly, seen areas of separate viewpoints and occupancy sites can be mapped on-the-ground. Viewshed limits can be estimated and delineated on the base map.

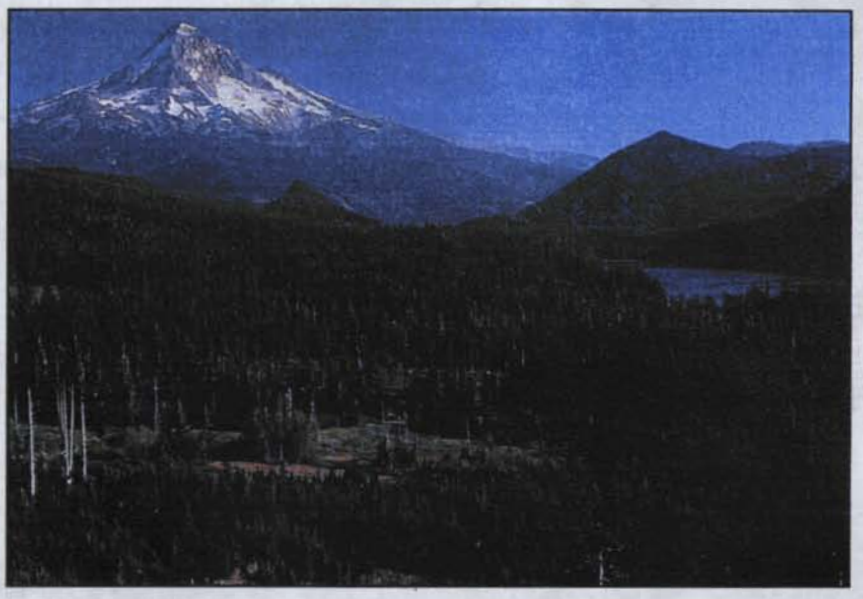
Computerized Seen Area Mapping

Computer software developers and landscape architects have worked together to develop **computerized seen area mapping** techniques. Software programs now exist that accurately develop seen area maps based on topographic screening. There may be a further proliferation of these programs in future years. Most comprehensive GIS software packages include similar visibility analysis programs.

In order to utilize a computerized seen area mapping process, suitable digital terrain data must be available. The relative degree of accuracy for seen area maps produced by computer will be determined by the degree of detail in, and accuracy of, the digital terrain data. Some on-site visits to spot-check for accuracy are advisable.

Scenic Classes

Scenic classes measure the relative importance, or value, of discrete landscape areas having similar characteristics of scenic attractiveness and landscape visibility.



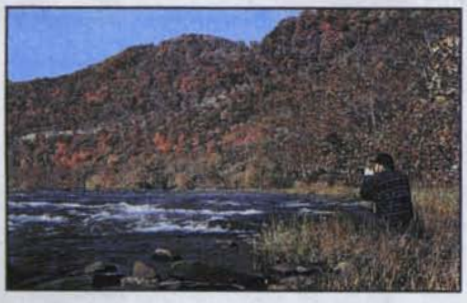
Purpose

All national forest landscapes have **value** as scenery—some more than others. **Scenic classes** are used as a measure of the value of scenery in a national forest.

Scenic classes measure the **relative** importance, or value, of discrete landscape areas having similar characteristics of scenic attractiveness and landscape visibility. Scenic classes are used during forest planning to compare the **value of scenery** with the **value of other resources**, such as timber, wildlife, old growth, or minerals. The higher the scenic class, the more important it is to maintain the highest scenic value.

Discussion

The components of Scenic Classes are **Scenic Attractiveness** and **Landscape Visibility.** As discussed in Chapter 1, Scenic Attractiveness measures the scenic importance of a landscape based on human perceptions of the intrinsic beauty of landform, water characteristics, vegetation pattern, and cultural land use. It is the primary indicator of the scenic beauty of a forest or wildland landscape and of the positive responses scenic beauty evokes in humans. Scenic Attractiveness is divided into three classes: A—distinctive, B—typical or common, and C—indistinctive. As discussed earlier in this chapter, Landscape Visibility uses the four visibility/distance zones of foreground (fg), middleground (mg), background (bg), and seldom-seen (ss), along with three concern levels for scenery (1 - high, 2 - moderate, and 3 - low).



- **Scenic classes** are determined and mapped by combining the three classes of scenic attractiveness with the distance zones and concern levels of landscape visibility. (See Table 4 - 2 and Figure 4 - 3.) Scenic classes are a product of the inventory process that is used for analysis and planning purposes.

- As discussed earlier, scenic classes are used during the forest planning process to compare the value of scenery to other resource values. Generally, Scenic Classes 1 and 2 have high public value, Classes 3 through 5 have moderate value, and Classes 6 and 7 have low value.

Table 4—2. Scenic Class Matrix

		Distance Zones/Seldom-Seen & Concern Levels											
		fg1	mg1	bg1	fg2	mg2	bg2	fg3	mg3	bg3	ss1	ss2	ss3
Scenic Attractiveness	A	1	1	1	2	2	2	2	3	3	1	2	3
	B	1	2	2	2	3	4	3	5	5	2	3	5
	C	1	2	3	2	4	5	5	6	7	3	5	7

Figure 4 – 3. Typical Landscape Value Icon for the Scenery Inventory Map.

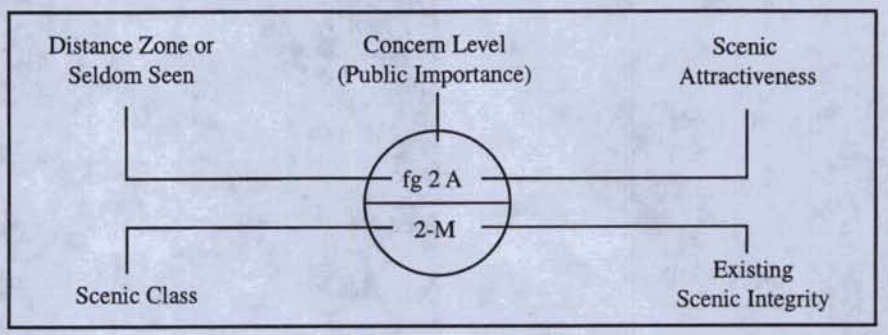
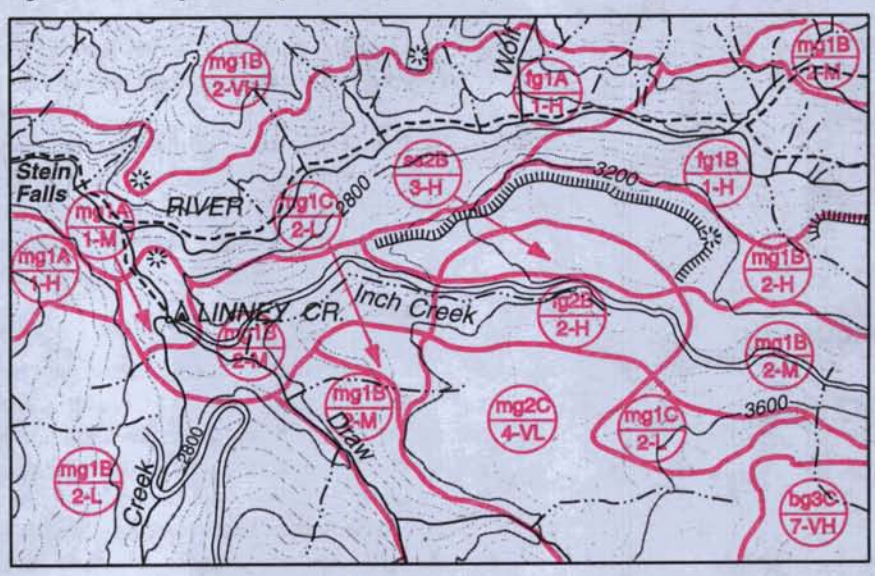


Figure 4 - 4. Sample Scenery Inventory Final Map



Existing scenic integrity is **not** used to determine scenic classes. Although existing scenic integrity does affect the **current value of scenery**, heavily altered landscapes can be reclaimed through future management activities and natural regeneration of vegetation. Because of this, it is suggested that existing scenic integrity be included in the icon when mapping scenic classes during the inventory process.

Using the information in the scenery inventory icon as guidance, Scenic Integrity Levels are discussed and proposed for all National Forest System acres during the forest planning process. The assignment of integrity levels is dependent on the theme (desired future condition) of each alternative. Once a final plan alternative is adopted, the Scenic Integrity Levels become Scenic Integrity Objectives that are used to manage the scenery resource. This is discussed in more detail in Chapter 5.