Scenery Management System Inventory Report

Prescott National Forest

Land and Resource Management Plan Revision

Written by

Nicole Hill and Jan Spencer

Landscape Architects, TEAMS Enterprise

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Abstract

Scenery as well as other natural resources must be cared for and managed in order to maintain quality scenery for generations to come. Scenic resources vary by location and by existing natural features including vegetation, water features, landform and geology, and human-made elements. All activities that forest visitors experience are performed in an environment where scenery is defined by the arrangement of the natural elements of the landscape along with components of the built environment. When we experience the landscape, scenery combines all the ecological features and the human elements. The composition of these attributes is what gives a landscape its character or image.

The report of the President's Commission on America's Outdoors (1987) states that America's most important attribute for a recreation area is natural beauty. Sightseeing, driving for pleasure and outdoor photography are among the nation's highest ranking recreational activities. Scenic forest settings contribute to all outdoor recreational experiences.

The Scenery Management System provides the framework to effectively inventory, assess and manage scenic resources in a sustainable and multiple use context.

"Our peace of mind, our emotions, our spirit - even our souls

are conditioned by what our eyes see."

Lady Bird Johnson

Introduction

The Scenery Management System (SMS) provides a systematic approach for determining the relative value and importance of scenery in National Forest lands. Ecosystems provide the environmental context for the scenery management system. Ecosystems as recreational settings greatly affect the quality and effectiveness of the recreation experience. A key attribute of recreation settings is the quality of aesthetics. The SMS is to be used in the context of ecosystem management to inventory and analyze scenery on National Forest lands, to assist in establishment of overall resource goals and objectives, to monitor scenic resources and to ensure high quality scenery for future generations. The process described within this document is consistent with the process outlined in Landscape Aesthetics: A Handbook for Scenery Management, Agricultural Handbook Number 701, with refinement for Prescott National Forest management needs.

This report has been prepared to document the SMS inventory and assessment process for the Land and Resource Management Plan revision for the Prescott National Forest and to report the information this process generated. The TEAMS Enterprise Team was contracted in September 2007 by the Prescott NF to undertake basic inventories and analyses required by the SMS for forest plan revisions. These inventories provide essential information to determine the existing condition of scenic resources, the inherent scenic beauty of the landscape, the value of scenic resources to the human environment, and potential scenery management scenarios.

This information is used in an interdisciplinary land use planning format to develop long-term scenic integrity objectives (SIO) for all parts of the Prescott NF. These SIOs become part of the new forest plan.

Managing for scenic quality benefits the local and regional economy of the Prescott area. The Prescott National Forest is a recreation destination for Arizona residents as well at visitors from neighboring states. It is important to manage the scenic resources to ensure a quality sightseeing experience for the public. Scenery is an integral component of all forest settings, and contributes to the quality of the users' experience. Providing a natural appearing landscape for these visitors is important.

Management of multiple resources has, to varying degrees, altered the natural landscape character. The most obvious effects on scenic resources are from vegetation and landform alterations. Resource management activities that have altered scenic resources include but are not limited to timber management, oil and gas extraction, mining, roads and trails, campgrounds and picnic grounds, fire management (suppression and prescribed burning), and livestock grazing. It is important to evaluate the management of multiple resources and the possible effects associated with scenic resources.

General Description of Scenic Resources on the Prescott National Forest

The landscapes of the Prescott National Forest (Prescott NF) have a wide variety of features providing for impressive scenery in Arizona. The Prescott NF is a recreation destination for Arizona residents as well as visitors from neighboring states. A diverse range of landscapes, water features and vegetation compose this forest which covers

about 1.25 million acres in northwestern Arizona. Elevations vary from about 3,000 feet to nearly 8,000 feet on Mount Union in the Bradshaw Mountains. People are drawn to the area for its open spaces, remoteness, tranquility, beautiful scenery, and the cool climate of the high elevation provides an escape from the desert heat. The scenery is diverse including mountains, pine forests, grasslands, lakes, streams, rugged canyons, and high desert plains. This spectrum of contrasts provides for sweeping, expansive views and uncrowded spaces. The variety of historic elements is rich in character and culture. For seclusion and tranquility the forest offers eight designated wilderness areas. The Verde River is a treasured resource in the central part of the state, providing lush riparian habitat, abundant wildlife, diverse recreational opportunities, and spectacular scenery (Recreational Activities: Fishing 2007). The majority of the upper and lower Verde River passes through National Forest lands with the lower river being designated a Wild and Scenic River. Fishing, boating, swimming, picnicking, camping, bird watching, and sightseeing are all popular activities in this area alone. Wildlife viewing and hunting opportunities are found throughout the landscape. Winding through various parts of the forest, travelers enjoy viewing scenery and reliving history on the Mingus Mountain Scenic Road.

Products of the Scenery Management System Process

- Map of scenic attractiveness utilizing water features, topography, landform and vegetation.
- Map of landscape visibility utilizing road and trail travel routes and use area concern levels.
- Map of Forest lands with a scenic class value (representing the level of public value for scenery) to be used as a management tool.
- Map of the existing scenic integrity level of the Forest.
- Map showing a composite of scenic values and conditions called the Composite Scenery Base Map.
- Landscape Character Descriptions for each geographic area.
- Summary report to document entire process.
- GIS layers for all maps, provided by TEAMS Enterprise to the PNF.

Overview of the Scenery Management System Process

The scenery management system process involves identifying scenic components as they relate to people, mapping these components and assigning a value for aesthetics. These maps provide information to planning teams to assist them in making a decision relative to scenery as a part of ecosystems and at project levels, and in determining the tradeoffs related to forest plan management scenarios.

The Landscape Character Description is an objective description of the biological and physical elements drawn from data available for ecological or planning units and combined with identified landscape character attributes in combination with the human elements of the landscape. 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.

The Landscape Character Description gives a geographic area its visual and cultural image, and consists of the combination of physical, biological and cultural attributes that make each landscape identifiable or unique. The description includes the valued attributes of the landscape, important elements of the social environment, environmental regimes, and disturbance regimes. **(See document, Landscape Character_txt.doc)**

The Landscape Character Description is used as a reference for the **Existing Scenic Integrity** of all lands. Existing Scenic Integrity (ESI) indicates the degree of intactness and wholeness of the landscape character. Conversely, ESI 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 ESI. Those landscapes having increasingly discordant relationships among scenic attributes are viewed as having diminished ESI. Existing Scenic Integrity is expressed and mapped in terms of very high, high, moderate, low, very low, and unacceptably low.

Scenic Attractiveness Classes are developed to determine the relative scenic value of lands within a particular landscape character. The three scenic attractiveness classes are: Class A- distinctive; Class B- typical; Class C- indistinctive. The landscape elements of landform, vegetation, rocks, cultural features and water features are considered when determining each of these classes.

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. Constituent analysis serves as a guide to perceptions of attractiveness, helps identify special places, and helps to define the meaning people give to the 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, travel ways, 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.

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 distance zones are identified as:

Foreground – up to 1/2 mile from observer
Middleground – 1/2 to 4 miles from the observer
Background – 4 miles from the observer to the horizon

Seldom Seen Areas are areas not seen from travel routes or identified use points. These areas are assigned a concern level 1, 2, or 3, based on concern for a specific area and may occur in any distance zone or scenic attractiveness class.

Scenic Classes: Using the data gathered and mapped for scenic attractiveness and landscape visibility (seen areas/distance zones), a numerical Scenic Class value is assigned to Forest lands. The ratings 1-7, indicate the scenic value of landscape areas, irrespective of existing scenic integrity. Mapped scenic class values are used during forest planning and project planning to compare the value of scenery with the value of other resources.

Components & Process

TEAMS Enterprise produced the concern level layers, visibility analysis, scenic attractiveness, scenic classes, existing scenic integrity analysis, composite scenery base map, and landscape character descriptions. Prescott National Forest personnel provided review and input for each of the inventories and products. Creation of preliminary and final Scenic Integrity Objectives will be completed within the context of the Forest Plan Interdisciplinary Team.

Landscape Character Descriptions

The Landscape Character Descriptions were written using forest planning geographic areas for the Prescott National Forest. The landscape character description gives a geographic area its visual and cultural image, and consists of the combination of physical, biological and cultural attributes that make each landscape identifiable or unique. Landscape character embodies distinct attributes that exist throughout an area, and descriptions concentrate on positive attributes. The descriptions represent the combination of the human habitat, heritage, and social ties to the landscape in combination with the physical and biological characteristics of the landscape. The landscape character descriptions are in a separate document from this report (Spencer 2009). The components of the descriptions and geographic areas are as follows:

Components of the Landscape Character Description

Human Habitat - Social Component categories

- Valued Landscape Attributes
- Special or Distinctive Features
- Recreation Opportunities
- Cultural Ecology

Ecological Component categories

- Dominant Environmental Regimes
  - Landform/Geomorphology
  - Climate
  - Surface Water Characteristics
  - Existing Vegetation
  - Potential Natural Vegetation
- Disturbance Regimes
- Sustainability of Valued Landscape Character Attributes

Concern Levels

The Forest landscape architect interviewed the district recreation staffs and identified concern levels for the Forest's travel routes and use areas. This data was provided to TEAMS Enterprise as ArcInfo Geographic Information System (GIS) layers. The SMS handbook outlines guidelines to derive the concern levels. The road and trail systems of the Forest were rated as a concern level 1, 2, or 3, primary, secondary, and secondary with low use and moderate to low interest in scenery respectively, as defined in the SMS handbook. Use areas were also assigned concern levels as defined in the SMS handbook. The recreation use areas on the Prescott NF were assigned concern level 1 or 2. Seldom seen areas were also assigned concern level 1, 2, or 3 as described in more detail in the Visibility Analysis section below. This system was also applied to travelways outside of the Forest that can see into the Forest. Refer to Landscape Aesthetics, A Handbook for Scenery Management, for detailed information on determining concern levels (USDA Forest Service 1995).

Concern level 1 generally includes all seen areas from primary travel routes, use areas, and water bodies where the forest visitors have a high interest in scenic qualities. Concern level 1 areas also include all seen areas from secondary travel routes use areas, and water bodies where the forest visitors have a high interest in scenic qualities.

The Scenery Management System gives a Concern Level 1 to secondary travelways and use areas where any level of use has a high interest in scenery. Level 1 also includes all seen areas from secondary travel routes, use areas, and water bodies where at least three fourths of the Forest visitors have a major concern for the scenic qualities (USDA FS 1974, 19).

Concern Level 2 generally includes all seen areas from primary travel routes, use areas, and water bodies where the forest visitors have a moderate interest in scenic qualities or low interest in scenic qualities if the area receives moderate to high use.

Concern level 2 also includes all seen areas from secondary travel routes, use areas, and water bodies where the forest visitors have a moderate interest in scenic qualities or low interest in scenic qualities if the area receives high use or "where at least one-fourth and not more than three-fourths of the Forest visitors have a Major concern for scenic qualities" (USDA FS 1974, 20).

Concern Level 3 areas apply to all other open travel routes and use areas not listed above.

Visibility Analysis

The visibility analysis was generated in the GIS, using the road and trail travel routes. Viewpoints were generated at roughly 1/4-mile intervals for concern level one roads and trails and roughly 1/2-mile intervals for concern level two and three road and trails. A key viewpoint coverage of concern level use points, which included points not generated from the travel route intervals, was also used to determine seen areas. Key viewpoints included overlooks, developed and dispersed recreation areas, and points identified by forest personnel and the landscape architect for key views. The key viewpoint coverage included concern level 1 and 2 viewpoints as identified by the Forest.

Each viewpoint was assigned an observation height of about five feet (1.5 meters).

Unseen Areas: Inevitably the visibility computer analysis resulted in some areas that were "unseen." These areas are referred to in the SMS Handbook as seldom seen since they may be seen, at a minimum, from aircraft and an occasional viewer wandering through the forest (USDA FS 1995, 4-11). A concern level use areas polygon layer, including special areas such as designated wilderness areas and inventoried roadless areas (IRAs), was used to determine and assign a concern level to these "unseen areas." Designated wilderness areas and wild and scenic river areas were assigned concern level one. Four special areas were also identified by the Forest landscape architect, were digitized and assigned concern level one, and are: Hell Canyon, eastern portion of Sycamore Creek east of Salt Flat Trailhead, drainage at the end of Kendall Camp Road in the Ash Creek IRA, and an area of Cienega Creek located southwest of Sheep Spring Trail 532 and east of Hackberry Road C168. Inventoried roadless areas were rated as concern level two. All other unseen areas were assigned concern level three.

The viewpoints were analyzed in combination with the digital elevation models (DEM) of the forest. The DEM cell size was 30 meters. The DEM was processed in GIS to run the visibility commands. Only the topographical/elevation information was used to determine seen areas, vegetation was not considered in the analysis.

Visibility analyses for the concern level use points and concern level travelways were completed separately then combined for the final visibility. Both map layers are available to provide more data for project level analysis.

Some edits were made to concern levels after the initial visibility analysis was completed. Edits included changing some concern level 3 routes to concern levels 1 and 2 and adding some concern level 3 routes. Visibility analysis for the additional concern level 1, 2, and 3 routes were run separately and combined with the initial analysis. The original concern level 3 data on fg3vis_e and fg3vis_w data layers is not accurate for project level analysis because these data layers were not updated for the changes described above. When the initial visibility data and additional routes data were combined for the final overall visibility, concern level 1 and 2 data overrode the inaccurate data on these two layers.

Scenic Attractiveness

Scenic Attractiveness is the primary indicator of the intrinsic scenic beauty of a landscape and of the positive responses it evokes in people. It helps determine landscapes that are valued for scenic beauty, based on commonly held perceptions of the beauty of landform,

vegetation pattern, composition, water characteristics, and land use patterns and cultural features. Scenic attractiveness indicates varying levels of long-term beauty of the landscape character, regardless of existing conditions. Scenic attractiveness classifications are Class A – distinctive, Class B – typical, and Class C – indistinctive (refer to pages 19 through 22 for more detail on these classes).

The scenic attractiveness inventory was derived at a fine scale, using data comprised of water features of lakes, streams, and wetlands, three slope classes, vegetative dominance type, and Terrestrial Ecosystem Survey units (TES). Each of these features were evaluated for scenic attractiveness and then combined to provide the overall scenic attractiveness for the Forest.

Water characteristics include the relative occurrence and distinguishing characteristics of rivers, streams, lakes, and reservoirs. Water is a special and distinctive feature across Arizona landscapes. Rivers and streams were classified based on Wild and Scenic River designation and perennial or intermittent classification. The Verde River, a designated Wild and Scenic River with a scenic classification, was rated as class A. Perennial streams were also rated as class A. See the scenic attractiveness GIS metadata for more information on data used to determine perennial and intermittent classification. To determine potential riparian areas of these streams, both class A and class B streams were buffered with 1/8 mile buffers and scenic attractiveness class assigned accordingly.

Water bodies, including lakes, reservoirs, rivers, and springs, were rated as class A, distinctive. Water body types of pit, tank, or well were not assigned a scenic attractiveness class. Wetlands identified in the national wetlands inventory were also rated as class A, distinctive.

The topography of the forests is represented in GIS with the digital elevation model (DEM). Using the DEM, the percent of slope was broken down into three categories: Class A- 40% slope and higher, Class B- 16-39% slopes, Class C- 0-15% slopes.

Geology and landform patterns were determined using the Prescott Soil Rating Guide GIS geodatabase. The data in the Prescott Soil Rating Guide was reviewed to determine areas with unique rock features or landforms with distinctive scenic attractiveness. Areas in the Rock Outcrop group were assigned class A.

Vegetative patterns include the distinguishing characteristics of existing and potential vegetative communities and the patterns formed by them. The draft mid-scale vegetation data and Terrestrial Ecological Units inventory was used to determine scenic attractiveness for vegetation. Also, the following TES map units were rated Class A for vegetation because of their aspen and willow vegetative component. The tables below summarize the classification used for vegetative patterns on the Forest.

The following table summarizes the value system used to determine scenic attractiveness of the landscape attributes.

Table 5. Scenic Attractiveness Inventory Value System

Landscape Attribute	Scenic Attractiveness Classes		
	Class A – Distinctive	**Class B – Typical**	**Class C – Indistinctive**
Streams	All perennial streams Designated Wild & Scenic Rivers (Verde River) Buffer for potential riparian areas (1/8 mile) and use national wetlands inventory	Intermittent Streams Buffer riparian areas (1/8 mile)	Not applicable
Lakes	Water is a special feature across the Arizona landscapes since it is so scarce. All lakes on the PNF fall into this category.		
Topography	Over 40 percent slopes with a lot of dissection, unevenness and sharply exposed ridges, or other outstanding features.	39-16 percent slopes which are moderately dissected with rolling landforms.	15-0 percent slopes, areas with little variety, insignificant dissection, and no dominant features.
Geology / Landform	Distinctive landscape features, unique or outstanding rock outcrops in size, shape and location. (Soil Guide)	Features are common to the natural landscape.	Small to non-existent features.
Vegetation	High degree of vegetative diversity in type, size, color and texture. Unique or outstanding vegetative species or combinations of species. (Used mid-scale vegetation and TES ecological units)	Moderate degree of species diversity in type, size, color and texture. Common vegetative species or combination of species.	Low degree of vegetative diversity, single coniferous species or brush types.

Scenic attractiveness classifications are Class A – distinctive, Class B – typical, and Class C – indistinctive.

Class A – Distinctive landscapes are areas where landform, vegetation patterns, water characteristics, and cultural features combine to provide unusual, unique, or outstanding scenic quality. These landscapes have strong positive attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance.

Class B – Typical landscapes are areas where landform, vegetation patterns, water characteristics and cultural features combine to provide ordinary or common scenic

quality. These landscapes have generally positive, yet common attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance.

Class C – Indistinctive landscapes are areas where landform, vegetation patterns, water characteristics and cultural features have low scenic quality. Often water and rock form of any consequence are missing in class C landscapes. These landscapes have weak or missing attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance.

Table 6. Scenic Attractiveness Classes acres

Class	Acres	Percent of Forest
A – Distinctive	309,147	30%
B – Typical	852,845	68%
C – Indistinctive	93,489	2%

Note: The acres calculations only include National Forest System lands.

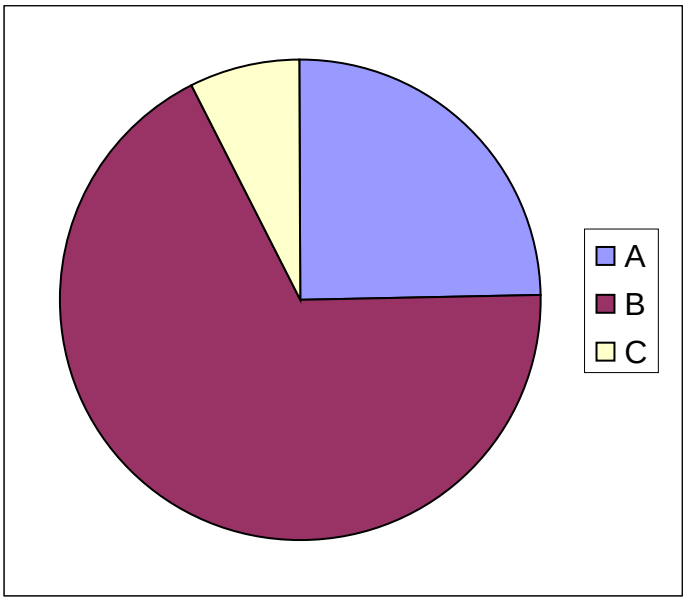

Figure 1. Scenic Attractiveness Class Chart

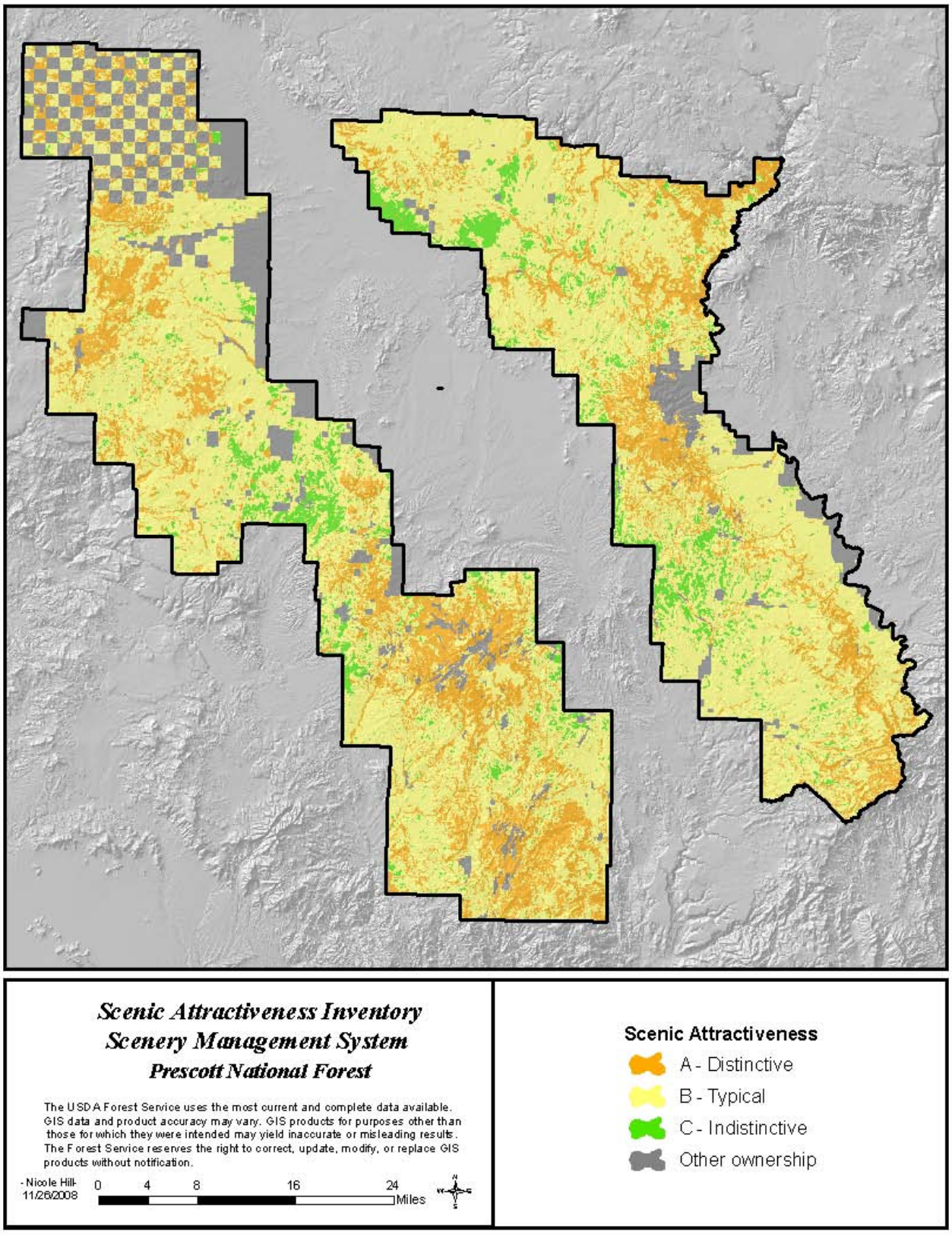

Figure 2. Scenic Attractiveness Class Map

Scenic Classes

Scenic classes represent the relative landscape value by combining distance zone, concern levels, and scenic attractiveness inventories as outlined in the Scenic Class Matrix on page 4-16 of the SMS handbook. They are a product of the inventory process that is used for analysis and forest planning purposes. Generally, scenic classes 1 and 2 have high public value, classes 3-5 have moderate value and classes 6 and 7 have low value (USDA FS 1995, 4-15).

Table 7. Scenic Classes acres

Scenic Class	Acres	Percent of Forest
1 - High Public Value	487,310	38.8%
2 - High Public Value	623,857	49.7%
3 - Moderate Public Value	80,949	6.4%
4 - Moderate Public Value	3,906	0.3%
5 - Moderate Public Value	55,820	4.4%
6 - Low Public Value	686	0.1%
7 - Low Public Value	2,954	0.2%

Note: The acres calculations only include National Forest System lands.

Approximately 88% of the Prescott NF has high public value, 11% has moderate public value, and less than 1% has a low public value.

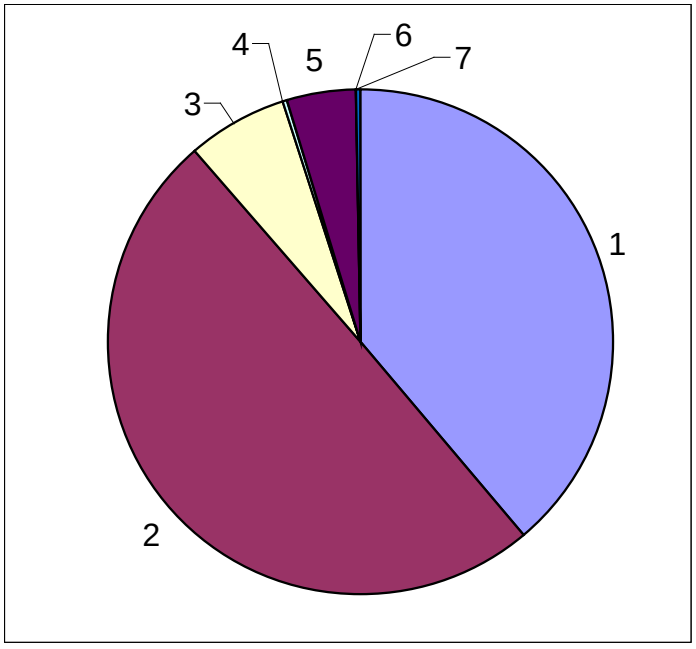

Figure 3. Scenic Classes Chart

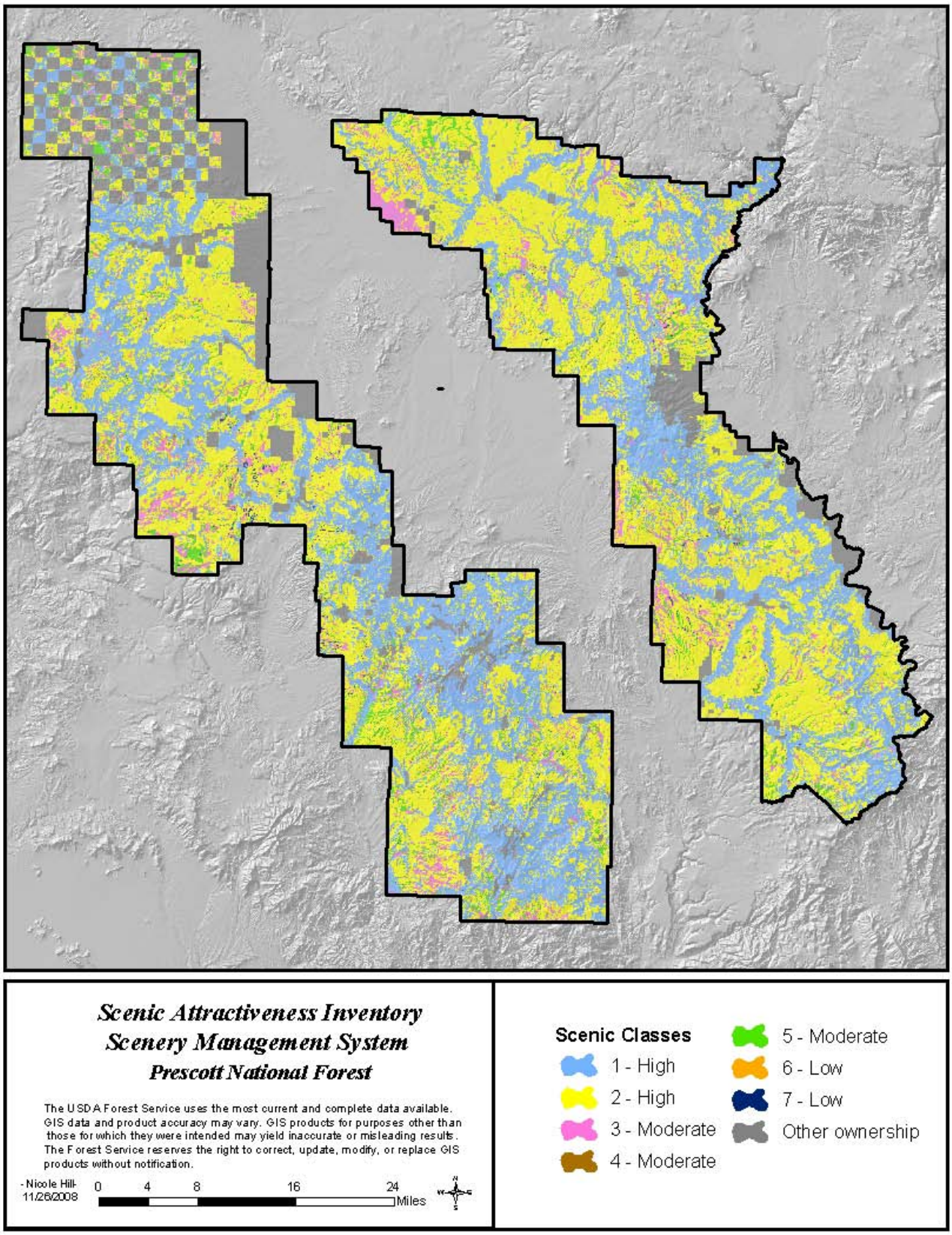

Figure 4. Scenic Classes Map

Existing Scenic Integrity

The existing scenic integrity (ESI) is a snapshot in time of the existing condition of the landscape. It is a result of the implementation of the current forest plan. The ESI indicates the degree of intactness and wholeness of the landscape character. Conversely, ESI is a measure of the degree of visible disruption of the natural landscape character. A landscape with very minimal visual disruption is considered to have high ESI. Those landscapes having increasingly incompatible relationships among scenic attributes are viewed as having diminished existing scenic integrity. Existing scenic integrity is expressed and mapped in terms of very high, high, moderate, low, very low, and unacceptably low.

Existing scenic integrity levels were determined for the Prescott landscapes using the following elements in GIS. Prescott NF forest activities (FACTS) data from 1977 to present was used to determine areas that appear altered across the forest from vegetative management. Other activities altering the landscape that were used include: utility corridors, vegetation management for livestock grazing, communication sites, travel management, oil and gas well locations, mining activities, and livestock grazing activities. This data was used in GIS to display the current condition of the landscape. Other GIS data used includes: designated wilderness areas, wild and scenic rivers designation, roadless inventory, and Recreation Opportunity Spectrum (ROS). NAIP (National Agricultural Imagery Program) aerial imagery from 2005 and 2006 was used as a reference to identify changes in the landscape that may not be found in the above GIS layers, but may be noticeable from aerial views. Due to time constraints which limited field review, most Existing Scenic Integrity Levels were rated from an aerial view.

In general, designated wilderness areas in the Prescott NF appear unaltered, expressing the highest possible level of intactness with a primitive and natural sense of place and have an existing scenic integrity of very high. Lands with very high ESI make up about six percent of the Forest.

The general Forest matrix is very intact with little evidence from management activities. The majority of the landscape, about 83 percent of the Forest, is naturally appearing with landscapes where the valued landscape character “appears” intact. The deviations present repeat the form, line, color, texture, and pattern common to the landscape character so completely that they are not evident. Lands rated with high ESI include, Primitive ROS class outside of designated wilderness areas, inventoried roadless areas, wild and scenic river corridors, and any lands not rated as very high, moderate, low, or very low ESI.

About seven percent of the Forest appears slightly altered due to timber harvest, livestock grazing improvement activities, noticeable erosion in gullied drainages, utility corridors, and mining activities. These lands have an existing scenic integrity of moderate, resulting in landscapes where the valued landscape character appears slightly altered. In general the following timber harvest activities were rated as moderate: shelterwood and seed tree preparation cut, commercial and precommercial thinning, sanitation, salvage, shelterwood cut, shelterwood removal cut, and patch and stand clear cuts. Noticeable deviations from these activities remain visually subordinate to the landscape character being viewed. If minor amounts of slash are present and contrasts between harvested and non-harvest areas are not noticeable and naturally appearing, some of these areas may be determined to meet high ESI during field review for project level analysis.

Livestock grazing improvement activities including push treatments and pinyon juniper treatments were rated as moderate ESI. Push treatments were identified in the vegetation_treatments GIS feature class and other pinyon-juniper treatments were identified by the Forest soils scientist using Terrestrial Ecological Unit (TEU) inventory map units. The Forest soils scientist also identified TEU map units which are gullied due to a variety of past management activities, such as road building. Utility corridors were buffered with a 100 foot buffer to represent the largest right-of-way potentially on the Forest. Utility corridor activities were reviewed in GIS with NAIP imagery and vegetation life forms. Gas transmission lines through grass vegetation were rated as moderate as minor deviations in color and texture may be evident. Electric transmission lines in mixed vegetation were also rated as moderate since the variety in mixed vegetation offers more absorption capability. The form, line, color, and texture of the vegetative component are intact, but the landscape character appears slightly altered by the vertical power line structures. Some mining activities near Crown King and the city of Butte patented claim were rated as moderate ESI. Most of the visual impact from these mining activities occurs on private lands, with some minor activities occurring on NFS lands. Activities occurring on NFS lands were digitized using NAIP imagery and rated as moderate.

Low ESI refers to landscape where the valued landscape character appears moderately altered. Deviations may dominate the valued landscape character being viewed but borrow from valued attributes such as shape, edge effect, and pattern of natural openings resulting in a landscape which appears moderately altered. Permanent land clearing activities identified in the FACTS database were rated as low ESI as well as the Sinks Mechanical Treatment from the vegetation_treatments GIS feature class. Some utility corridors were also rated as low ESI. As stated earlier the utility corridors were buffered with a 100 foot buffer, and these activities were reviewed in GIS with NAIP imagery and vegetation life forms. Generally, electric transmission lines change the natural form, line, color, and texture in forests so that the activity dominates the landscape. Electric transmission lines do not dominate a shrub vegetated landscape as much as tree vegetated landscape. Electric transmission lines through shrub vegetation were rated as low ESI for the above reasons.

Most utility corridors, communications sites, gravel pits, and other surface mining activities were assigned very low existing scenic integrity. These areas may strongly dominate the valued landscape character and borrow little from valued attributes such as size, shape, edge effect and pattern of natural openings and vegetative type changes within or outside the landscape being viewed. Utility corridors typically do not borrow from natural shapes, patterns, or edge effect. The buffered utility corridors were again reviewed in GIS with NAIP imagery and vegetation life forms. Generally, electric transmission lines change the natural form, line, color, and texture in forests so that the activity dominates the landscape. Electric transmission lines through treed vegetation were rated very low. Electric transmission lines through grass vegetation were also rated very low. Although the activity generally does not change the form, line, color, or texture of the vegetation, the structures add strong, unnatural vertical forms to the landscape being viewed in this vegetation type. Gas transmission lines through shrub vegetation were rated very low, since the vegetation clearing needed generally changes the natural form, line, color, and texture in this vegetation life form so that the activity dominates the landscape.

Very low ESI describes landscapes that appear heavily altered. Deviations may strongly dominate the valued landscape character and may not borrow from valued attributes such as size, shape, edge effect and pattern of natural openings, vegetative type changes or architectural styles within or outside the landscape being viewed. Communications sites and lookouts were buffered with a ¼ mile and assigned very low ESI since these activities often introduce strong vertical structures and dominate the landscape being viewed. Gravel pits and most surface mining activities have very low ESI due to the deviations introduced to the color of the landscape and changes to natural landforms. Lists of mines and gravel pits with potential visual impacts were provided by the Forest. More information on how mining activities were rated can be found in azmills_visuals_nhill.xls and potential_visual_concerns_minerals_nhill.xls. No activities on Prescott National Forest system lands were rated as unacceptably low.

Table 8. Existing Scenic Integrity Levels acres

Existing Scenic Integrity Level	Acres	Percent of Forest
Very High	104,487	8.3%
High	1,045,737	83.3%
Moderate	93,929	7.5%
Low	2,795	0.2%
Very Low	8,535	0.7%

Note: No lands were rated Unacceptably Low. The acres calculations only include National Forest System lands.

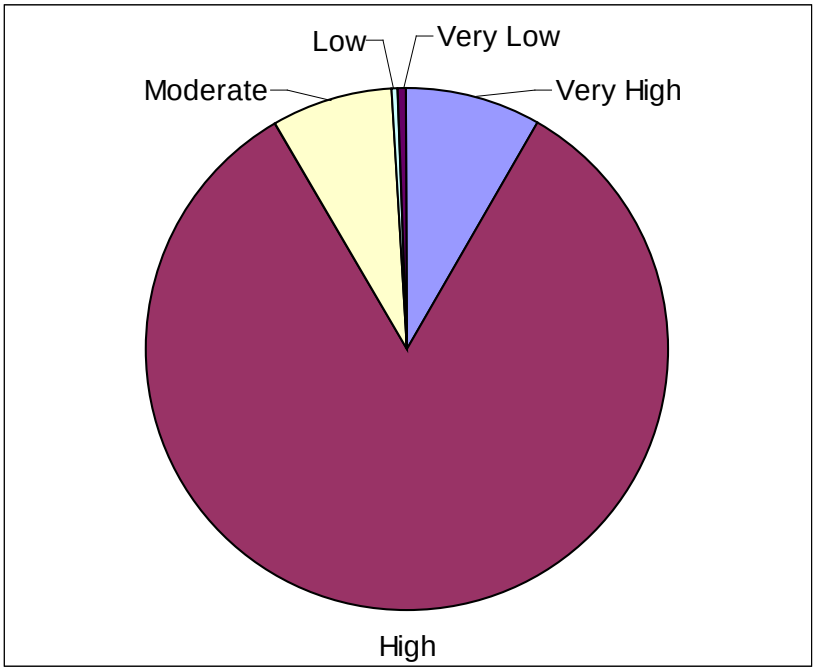

Figure 5. Existing Scenic Integrity Levels Chart

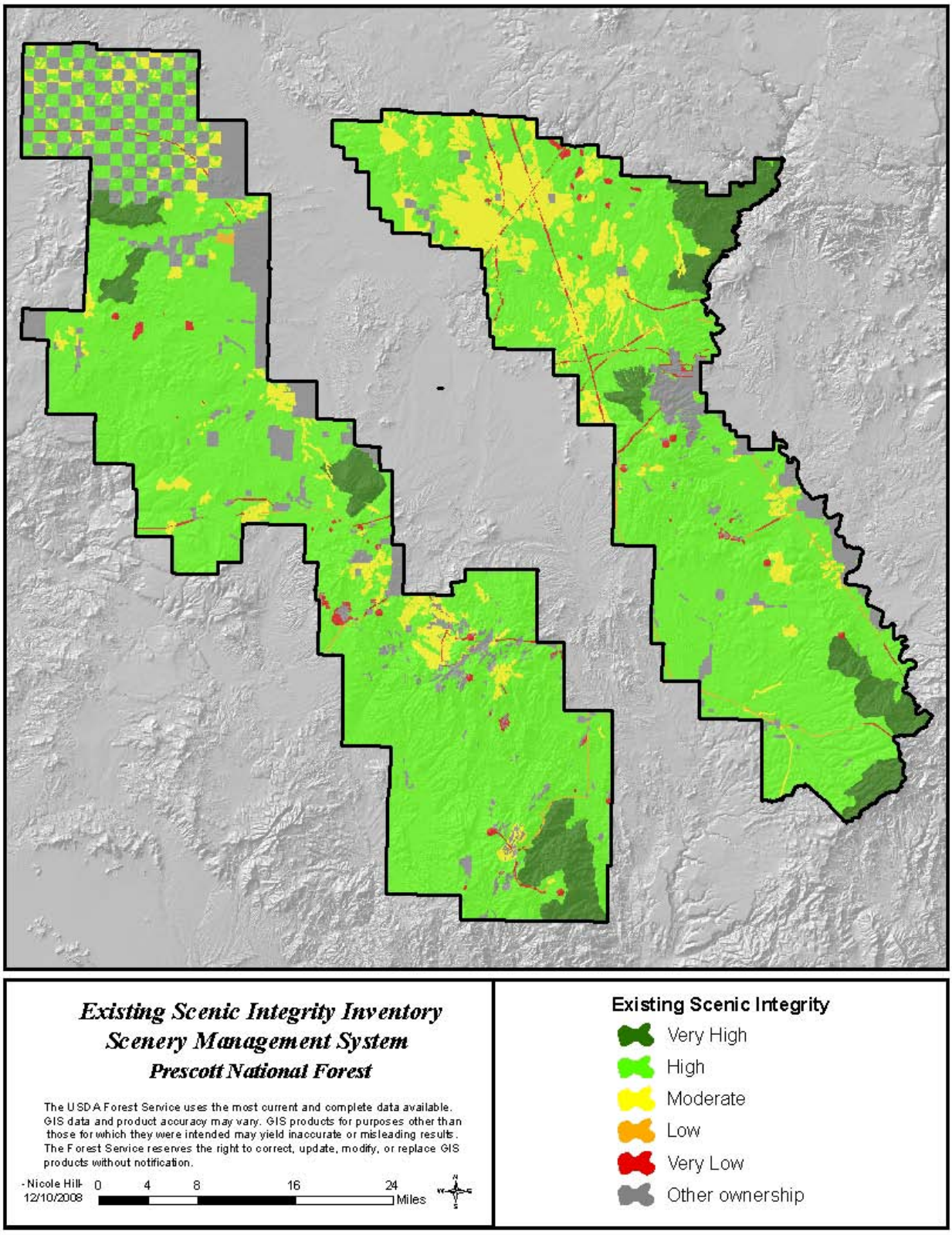

Figure 6. Existing Scenic Integrity Levels Map

Composite Scenery Base Map

SMS Handbook guidance for determining Scenic Integrity Objectives is as follows: "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 to be used to manage the scenery resource." (USDA FS 1995, 4-16). The scenery inventory icon has the following information: distance zone, concern level, scenic attractiveness, scenic classes, and existing scenic integrity.

To help the Forest determine scenic integrity levels (SILs), a composite scenery base map was produced by combining scenic classes and existing scenic integrity levels. These two inventories contain all the information in the scenery inventory icon. This map is intended to be a starting point for determining scenic integrity levels during the interdisciplinary Forest planning process. The mapping process is as follows:

To review, scenic classes represent the relative landscape value by combining distance zones, seen area, concern levels, and scenic attractiveness classes. The classes are a product of the inventory process that is used for analysis and forest planning purposes. Generally scenic classes 1 and 2 have high public value, classes 3-5 have moderate public value and classes 6 and 7 have low public value (USDA FS 1995, 4-15).

Table 9. Scenic Classes acres

Scenic Class	Acres	Percent of Forest
1 - High Public Value	487,310	38.8%
2 - High Public Value	623,857	49.7%
3 - Moderate Public Value	80,949	6.4%
4 - Moderate Public Value	3,906	0.3%
5 - Moderate Public Value	55,820	4.4%
6 - Low Public Value	686	0.1%
7 - Low Public Value	2,954	0.2%

Note: The acres calculations only include National Forest System lands.

The existing scenic integrity (ESI) is a snapshot in time of the existing condition of the landscape. It is a result of the implementation of the current forest plan. The ESI indicates the degree of intactness and wholeness of the landscape character. Conversely, ESI is a measure of the degree of visible disruption of the natural landscape character. A landscape with very minimal visual disruption is considered to have high ESI. Those landscapes having increasingly incompatible relationships among scenic attributes are viewed as having diminished existing scenic integrity. National Forest lands are not managed for unacceptably low scenic integrity. The unacceptably low level is used in the inventory process to identify lands that need rehabilitation. No lands were identified as unacceptably low during the ESI inventory for the Prescott National Forest.

Table 10. Existing Scenic Integrity Levels acres

Existing Scenic Integrity Level	Acres	Percent of Forest
Very High	104,487	8.3%
High	1,045,737	83.3%
Moderate	93,929	7.5%
Low	2,795	0.2%
Very Low	8,535	0.7%

Note: No lands were rated Unacceptably Low. The acres calculations only include National Forest System lands.

The scenic classes and the existing scenic integrity levels were combined using the matrix shown below in Table 11. This combination of inventories is the existing condition of the Forest in terms of the Scenery Management System and will be referred to as the composite scenery base map. The value for each scenic class and the value next to each ESI level were summed, producing a range of values from 2 to 12.

Table 11. Matrix for determining SMS Values for the Composite Scenery Base Map

	Existing Scenic Integrity Levels				
Scenic Class	Very High (1)	High (2)	Moderate (3)	Low (4)	Very Low (5)
1	2	3	4	5	6
2	3	4	5	6	7
3	4	5	6	7	8
4	5	6	7	8	9
5	6	7	8	9	10
6	7	8	9	10	11
7	8	9	10	11	12

The SMS values derived from the composite scenery base map can be correlated with potential Scenic Integrity Levels. The range of values was correlated to a potential Scenic Integrity Level by condensing the range of values in the matrix above into Table 12 below.

Table 22. Condensing SMS Values to Potential Scenic Integrity Levels

Scenic Integrity Level	Very High	High	Moderate	Low	Very Low
SMS Value	2	3	4-8	9-10	11-12

The most likely desired management conditions, scenic class, and current intactness of the landscape were all considered when assigned a potential Scenic Integrity Level. National Forest lands are not managed beyond the Very Low scenic integrity level. The lower the numeric value the more important the public value for scenery is, as well as the higher the intactness of the natural landscape.

The potential Scenic Integrity Levels (SILs) are guidelines and need review by forest personnel and public to see if the potential SILs fit the management needs of the Prescott National Forest. See Table 12 to review how the SMS values from the composite scenery base map were condensed into the potential SILs. See attached map of potential SIL's.

Proposed Scenic Integrity Objectives

Further refinement of the SILs from the composite scenery basemap will be needed during the Forest planning process. The adopted scenic integrity levels become scenic integrity objectives when a preferred alternative is selected. Refinements to SILs can be made using the proposed management areas, proposed Recreation Opportunity Spectrum, or scenic class. Depending on the theme or focus of the management area and the suggested SIL on the composite basemap, a recommended SIO can be assigned to the management area. In some cases, a management area may be split into more than one SIO to ensure that the scenic integrity levels would be compatible with the desired condition of each management area. The scenic class map may be consulted to determine if any changes or "fine tuning" is needed, resulting in a raising or lowering of the recommended SIO. The proposed ROS class map may also be checked to ensure that proposed scenic integrity objectives complement recreation settings and vice/versa.

Once the scenic integrity objectives are identified, they will serve as a guide for design and implementation of management activities.

The very high, high, and moderate scenic integrity objectives result in a relatively natural-appearing landscape. It is important for National Forests to manage scenery at this level. "Research has shown that high-quality scenery, especially that related to natural-appearing forests, enhances people's lives and benefits society" (USDA FS 1995, 17). It should also be noted that according to "Floyd Newby's findings that "people expect to see natural or natural-appearing scenery,"" (quoted in USDA FS 1995, 2-3). Furthermore, "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." (USDA FS 1995, 30)