APPENDIX D
Visual Resource Management

VISUAL RESOURCE MANAGEMENT

The visual resource management (VRM) process is divided into two stages: inventory and analysis. Inventory is associated with resource management planning, and analysis is used primarily to determine whether proposed actions are appropriate to a VRM class assigned through the Resource Management Plan (RMP).

VISUAL RESOURCE INVENTORY

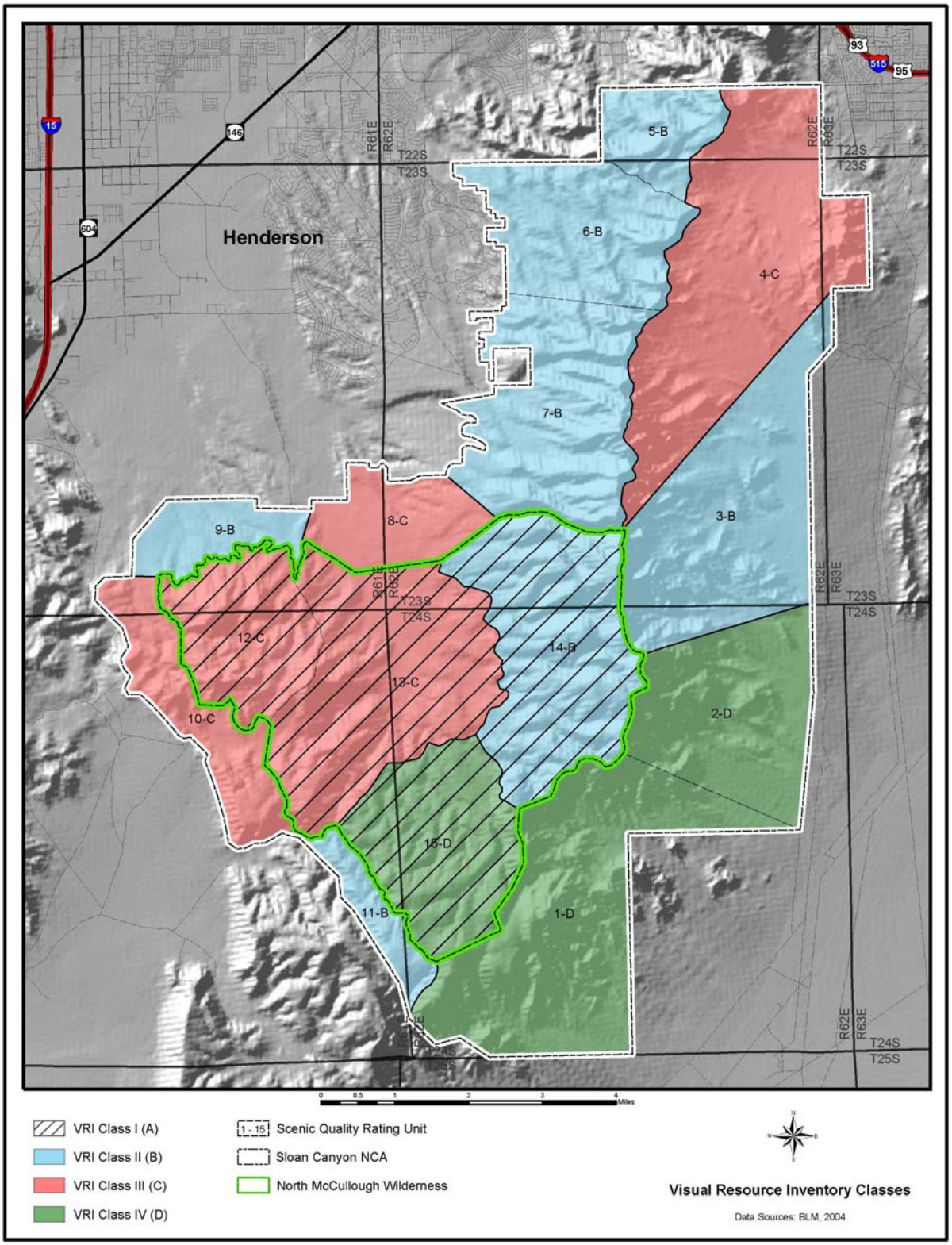
A visual resource inventory (VRI) of the Sloan Canyon National Conservation Area (NCA) was conducted during winter 2003, and the resulting inventory classes are shown in Figure D.1, Visual Resource Inventory Classes. The map also shows the Scenic Quality Rating Units (1 through 15) on which the VRI classes were based. A Scenic Quality Rating Unit is a portion of the landscape that displays primarily homogenous visual characteristics of the basic landscape features (e.g., land and water forms, vegetation, and structures). Inventory findings indicate that large portions of the NCA contain little change to the existing landscape and would be conducive to management designed to retain that character. Some portions of the NCA contain moderate or extensive landscape modifications that detract from scenic quality. Such conditions make it challenging to conserve scenic resources. In these areas, opportunities may exist for restoration and mitigation of disturbances. Other areas of the NCA are so seldom seen that their visual resources do not appear to require intensive management. Nevertheless, they may be easily managed to retain existing landscape character and conserve scenic resources despite VRI ratings of Class III or IV.

The inventory confirmed that the NCA contains large areas of undisturbed desert landscape that can continue to be conserved for scenic quality. Many of the areas inventoried provide scenic backdrops for the urban interface, and other portions of the NCA contain remote wilderness landscapes. A small portion of the NCA has lower visual appeal but remains suitable for a wider variety of multiple uses and provides ample opportunity for restoration of disturbance. The NCA contains a wide variety of high-quality visual resources that can be managed to maintain and improve existing conditions.

At the time of the inventory, VRM classes for the NCA were defined in the *Proposed Las Vegas Resource Management Plan and Final Environmental Impact Statement* and modified by the Clark County Conservation of Public Land and Natural Resources Act of 2002, Title VI (Sloan Canyon NCA Act), which changed the VRM classification of the North McCullough Wilderness. Definitions of the VRM classes are as follows:

- Class I—Authorized actions may not modify existing landscape or attract the attention of casual viewers.
- Class II—Authorized actions may not modify existing landscape or attract the attention of casual viewers.
- Class III—Authorized actions may alter the existing landscape but not to the extent that they attract or focus attention of the casual viewer.
- Class IV—Authorized actions may involve major modification of the landscape's existing character. Authorized actions may create significant landscape alterations and would be obvious to casual viewers.

Figure D.1. Visual Resource Inventory Classes



Methods

BLM directives identify a standard set of procedures for VRI (*BLM Manual Handbook 8410-1*). This Handbook describes procedures for a typical BLM field office, but does not contain specific guidance for smaller areas such as the NCA, which is only 48,438 acres in size. Methods for the VRI of the NCA were developed based on standard inventory procedures, and modified to adapt to the smaller size of the area. The process involved several steps, including the selection of observation points, delineation of Scenic Quality Rating Units, delineation of Sensitivity Level Rating Units, and determination of distance zones. The NCA was evaluated for scenic quality, sensitivity, and distance zones during fieldwork conducted in January 2004.

The purpose of conducting the VRI was to place all portions of the NCA into one of the four inventory classes described above. These inventory classes represent the relative values of the visual resources and provide the basis for considering visual values in the resource management planning process. Results of the VRI describe actual conditions of the resource during the time of inventory and are presented as "inventoried" rather than as "recommended" VRM classes.

Inventory Preparation

The first step in conducting the VRI was the selection of observation points. Two site visits were conducted to determine points to be used in conducting the inventory. 1:24,000 scale U.S. Geological Survey topographic maps were also used to determine desirable points for the VRI. Factors considered in the selection of points included topographic features, visibility of the NCA, amount of use, proximity to travel corridors, proximity to the urban interface, known points of interest, and relative sensitivity.

Observation points selected through field visits and map work were compiled into a digital shapefile for use in a geographic information system (GIS). This shapefile was used in conjunction with a digital elevation model of the area to conduct multiple viewshed analyses. The viewshed analyses showed what portions of the NCA were visible from each observation point, as well as the total area visible from all points. These viewshed analyses facilitated the elimination of points with poor visibility of the NCA and the addition of observation points where needed.

The viewshed analyses also assisted in the creation of Scenic Quality Rating Units and Sensitivity Level Rating Units. Combinations of viewsheds were analyzed to determine which areas of the NCA shared common visibility characteristics and could be combined into units. Based on this analysis, Scenic Quality Rating Units were delineated and digitized. This analysis also determined that Sensitivity Level Rating Units would be the same shape and size as the Scenic Quality Rating Units.

Following this preliminary analysis, a work plan for conducting the VRI fieldwork was prepared using the observation points, Scenic Quality Rating Units, and knowledge of the area. Groups of observation points were associated with each Scenic Quality Rating Unit, and a travel plan was arranged to visit each point. The work plan identified steps for collecting observations, taking digital and 35mm photographs, and evaluating the visual resource characteristics. Throughout the preparation process, the BLM Visual Resource Specialist was consulted to solicit preferences in methodology and present plans and interim products. The work plan, including the observation points, Scenic Quality Rating Units, and viewshed analyses were presented to the BLM Visual Resource Specialist prior to the fieldwork. All products and plans received approval on January 8, 2004.

Field Inventory

Fieldwork for the VRI was completed January 13–16, 2004. The inventory was conducted using the established observation points, rating units, and work plan. Observation points were visited through a combination of vehicle and foot travel. At each observation point, a standard set of observations was taken, including—

- One global positioning point.
- Observations of each Scenic Quality Rating Unit noted on the BLM Scenic Quality form.
- Observations of each Scenic Quality Rating Unit noted on the BLM Sensitivity form.
- Determination of distance zones noted on a Distance Zone form.
- 35 mm photographs of visible areas of the NCA.
- Digital photographs of the same visible areas of the NCA.

In instances where a Scenic Quality Rating Unit/Sensitivity Level Rating Unit was visible from more than one observation point, observations were recorded at the initial point and expanded at subsequent observation points. Similarly, observations of distance zones were recorded for each rating unit at the initial point then expanded as necessary at subsequent points. Digital and 35 mm photographs were taken at each observation point to capture representative scenery visible from each point. In several instances a series of photographs was taken to capture a panoramic view of the NCA.

Post-Inventory

Following the field inventory of visual resources in the NCA, results of the evaluation were organized and compiled to combine the scenic quality, sensitivity, and distance zone ratings into VRI classifications. The following tasks were conducted:

- Forms used in evaluation of the three visual resource components were completed, and final classifications for each were tabulated.
- Global positioning system points captured for each point were converted into shapefiles.
- Digital and 35 mm photographs were sorted and organized against the photo log.
- Ratings produced for scenic quality, sensitivity, and distance zone were combined and produced as digital GIS layers using the “scores” reported on the rating forms.

Results

Once the inventory ratings were completed, the three components were combined using methodology based on the approach described in *Visual Resource Management Manual Handbook 8410-1,* Illustration 11. This approach was modified using *BLM Technical Note 407—Integrating GIS Technologies with the Visual Resource Management Process* (*November 2001*). The GIS methodology in *Technical Note 407* describes the procedure for combining rating components into inventory classes. The procedure of Method 2, described on pages 9 and 10 of *Technical Note 407,* was used to create VRI classes in a GIS. The Boolean Rules in Method 2 were applied to the three rating layers for Scenic Quality, Sensitivity, and Distance Zones to produce the VRI layer.

VISUAL RESOURCE ANALYSIS

The analysis stage involves determining whether the potential visual impacts from proposed surface disturbing activities or developments would meet the management objectives established for the area or whether design adjustments would be required. Visual Contrast Ratings are determined at the start of planning, prior to the beginning of construction or disturbance. During the visual contrast rating process, BLM compares the features of the proposed project with the major features in the existing landscape using the basic design elements of form, line, color, and texture. The complete process is described in *BLM Handbook H-8431-1, Visual Resource Contrast Rating*. The results of the analysis are then used as a guide for reducing visual impacts. Once every attempt is made to reduce visual impacts, BLM managers can decide whether to accept or deny project proposals. Managers also have the option of attaching additional mitigation stipulations to bring the proposal into compliance.

Approved Plan

As discussed in section 2.3.6 of the Proposed RMP and shown in Figure D.2, the NCA's visual resources are assigned to the following management classes, as defined in *BLM Handbook H-8410-1, Visual Resource Inventory*:

- Class I—Preserve the existing character of the landscape. Authorized actions may not modify the existing landscape or attract the attention of casual viewers.
- Class II—Retain the existing character of the landscape. The level of change to the characteristic landscape should be low and may not attract the attention of casual viewers.
- Class III—Partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate and may minimally attract the attention of the casual viewer.

Figure D.2. Visual Resource Management Classes—Approved Plan