

SUMMARY OF ROS SETTING CHARACTERISTICS

Primitive	DESCRIPTION	
	Setting	Characteristics
	Physical	<p>Theme: Remote (3 miles from motorized use), predominately unmodified, naturally evolving</p> <p>Size*: 5,000 + acres</p> <p>Infrastructure**:</p> <p><i>Access</i> - Non-motorized trails are present.</p> <p><i>Fishing sites</i> –rivers and lakes;</p> <p><i>Camp/Picnic sites</i> – not developed or defined, leave no trace;</p> <p><i>Sanitation</i> – no facilities, leave no trace;</p> <p><i>Water supply</i> – undeveloped natural;</p> <p><i>Signing</i> – minimal, constructed of rustic, natural materials;</p> <p><i>Interpretation</i> - through self discovery and at trailheads;</p> <p><i>Water crossing</i> – minimal, some bridges made of natural materials (wood) may exist but are rare.</p> <p>Vegetation: Natural, no treatments except for fire use.</p>
	Managerial	Few signs, few encounters with rangers, Travel on foot and horse, no motorized travel allowed.
Social***	Very high probability of solitude; closeness to nature; self-reliance, high challenge and risk; little evidence of people.	

Semi-Primitive Non-Motorized	DESCRIPTION	
	Setting	Setting
	Physical	<p>Theme: Predominately natural/natural appearing; rustic improvements to protect resources.</p> <p>Size*: 2,500 + acres (No size criteria apply within designated Wilderness boundaries).</p> <p>Infrastructure**:</p> <p><i>Access</i> - Non-motorized trails are present.</p> <p style="padding-left: 20px;">Closed and temporary Roads may be present but not dominant on the landscape.</p> <p><i>Fishing sites</i> – rivers, lakes and reservoirs;</p> <p><i>Camp/Picnic sites</i> – not developed, leave no trace</p> <p><i>Sanitation</i> – no facilities, leave no trace</p> <p><i>Water supply</i> – undeveloped natural</p> <p><i>Signing</i> – rustic constructed of natural materials.</p> <p><i>Interpretation</i> - through self discovery, at trailheads</p> <p><i>Water crossing</i> – rustic structures or bridges made of natural materials.</p> <p>Vegetation: Predominately natural, treatment areas exist to enhance forest health but are few and widely dispersed;</p>
	Managerial	Minimum or subtle signing and regulations, some encounters with rangers. Motorized travel prohibited.
Social***	High probability of solitude, closeness to nature, self-reliance high to moderate challenge and risk; some evidence of others.	

Semi-Primitive Motorized	DESCRIPTION	
	Setting	Setting
	Physical	<p>Theme: Predominately Natural, Natural Appearing Size: 2,500 + acres (no minimum size within designated Wilderness) Infrastructure**: <i>Access</i> - Motorized trails exist <i>Fishing sites</i> – rivers, lakes, and reservoirs w/ some trails & primitive roads (motorized trails); <i>Camp/Picnic sites</i> – not developed, leave no trace, some identified dispersed areas <i>Sanitation</i> – limited facilities, rustic, may have rustic outhouses available. <i>Water supply</i> - undeveloped natural, rustic developments; <i>Signing</i> – rustic, made of natural materials; <i>Interpretation</i> – self discovery, some located on site or at trailheads; <i>Water crossing</i> - rustic structures or bridges made of natural material, some designed for motorized use. Vegetation: treatment areas are very small in number, widely disbursed, and consistent with natural vegetation patterns.</p>
	Managerial	Minimum or subtle on-site controls with some restrictions; Motorized off-highway vehicles allowed.
Social***	Moderate probability of solitude, closeness to nature, high degree of challenge and risk using motorized equipment; motorized use visible and audible.	

Roaded Natural	DESCRIPTION	
	Setting	Setting
	Physical	<p>Theme: Natural Appearing with nodes and corridors of Development such as campgrounds, trailheads, boat launches, and rustic, small-scale resorts. Size: n/a Infrastructure**: <i>Access</i> – Classified Road System for highway vehicle use <i>Fishing sites</i> – rivers, lakes, reservoirs with some facilities; <i>Camp/picnic sites</i> – identified dispersed and developed sites; <i>Sanitation</i> – developed outhouses that blend with setting <i>Water supply</i> – often developed <i>Signing</i> – rustic with natural materials to more refined using a variety of materials such as fiberglass, metal, etc.; <i>Interpretation</i> – simple roadside signs, some interpretive displays <i>Water crossing</i> – bridges constructed of natural materials. Vegetation: Changes (treatments) to the natural vegetation patterns are evident but in harmony with natural setting.</p>
	Managerial	Opportunity to be with other users in developed sites; some obvious signs (information and regulation) and low to moderate likelihood of meeting Forest Service rangers.
Social***	Moderate evidence of human sights and sounds; moderate concentration of users at campsites; little challenge or risk.	

DESCRIPTION	
Setting	Setting
Rural	<p>Physical</p> <p>Theme: Altered Landscapes with natural appearing backdrop. Ranches, administrative sites, and moderately developed resorts are sometimes in this ROS class.</p> <p>Size: n/a</p> <p>Infrastructure**:</p> <p><i>Access</i> - Travel routes highly developed, classified roads Trails are constructed for ease of movement. Majority of routes are concrete, paved or graveled.</p> <p><i>Camp/Picnic sites</i> – developed and designed for user comfort, variety of construction materials used that blend with setting. May have hookup amenities such as hot water, electricity, and sewage disposal.</p> <p><i>Sanitation</i> – developed and designed for user comfort</p> <p><i>Water supply</i> – developed and designed for user comfort</p> <p><i>Signing</i> – natural and synthetic materials appropriate</p> <p><i>Interpretation</i> –roadside exhibits, interp. Programs, etc;</p> <p><i>Water crossing bridges</i> constructed of a variety of materials, In harmony with landscape</p> <p>Vegetation: dominate treatments that blend with landscape.</p>
	<p>Managerial</p> <p>Obvious signing (regulation and information), education and law enforcement staff available. Motorized and mechanized travel common and often separated.</p>
	<p>Social***</p> <p>High interaction among users is common. Little challenge or risk associated with being outdoors.</p>

		DESCRIPTION
		Setting
Urban	Physical	<p>Theme: Heavy site modifications and facilities. Backdrop is often natural appearing. Highly developed Ski areas and resorts are examples of urban nodes within NF System lands.</p> <p>Size: n/a but typically small nodes</p> <p>Infrastructure**:</p> <p><i>Access</i> - Travel routes highly developed (typically maintenance levels 4 and 5) for motorized use often with mass transit available. Majority of routes are concrete, paved or graveled.</p> <p><i>Camp/Picnic sites</i> – developed and designed for user comfort, variety of construction materials used, campsites in close proximity to each other, nearby café’s and restaurants.</p> <p><i>Sanitation</i> – developed and designed for user comfort, most have running water.</p> <p><i>Water supply</i> – developed and designed for user comfort, many have hot water available.</p> <p><i>Signing</i> – natural and synthetic materials appropriate</p> <p><i>Interpretation</i> –exhibits in staffed visitor centers, highly developed and formalized exhibits, etc;</p> <p><i>Water crossing bridges</i> constructed of a variety of materials, designed for user convenience and safety.</p> <p>Vegetation: often planted, manicured and maintained</p>
	Managerial	Intensive on-site management, obvious signs, and staffing, education and law enforcement available. Motorized and mechanized travel restricted to designated routes. No motorized or mechanized travel allowed off designated travel routes.
	Social***	Opportunity to be with others - high degree of interaction with people. Challenge and risk are unimportant except for competitive sports.

* Size of Primitive areas may be smaller if contiguous to a SPNM area(s)

Size of SPNM areas may be smaller if contiguous to Primitive area(s)

** Levels of development for infrastructure should be consistent with definitions for development scales (Appendix A, Meaningful Measures User Guide 2000). New and/or reconstructed facilities should follow BEIG (Built Environment Image Guide) principles and concepts.

*** Use figures, where available, should be included as part of defining existing conditions of the Social setting. Sources of information include: INFRA, NVUM, Infra/CUAs, traffic counts, local surveys and use monitoring, etc.

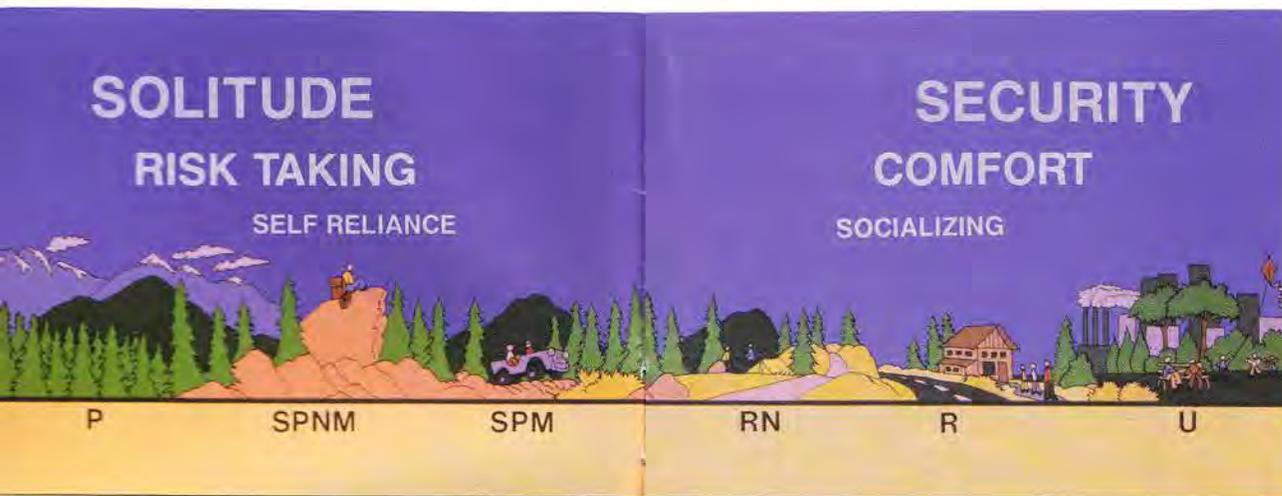
United States Department of Agriculture
Forest Service



ROS

Primer and Field Guide





The Recreation Opportunity Spectrum

Recreation on our National Forests is more than just camping, fishing, and hiking. Research has shown that people choose a specific setting for each of these activities in order to realize a desired set of experiences. For example, camping in a large undeveloped setting with difficult access and few facilities offers a sense of solitude, challenge, and self-reliance. In contrast, camping in a setting having easy access and highly developed facilities offers more comfort, security, and social opportunities.

The Recreation Opportunity Spectrum (ROS) offers a framework for understanding these relationships and interactions. The Spectrum has been divided into six major classes for Forest Service use: Urban (U), Rural (R), Roaded Natural (RN), Semi-Primitive Non-Motorized (SPNM), Semi-primitive Motorized (SPM), and Primitive (P). Maintaining a broad spectrum of these classes is very important to provide people with choices. ROS is also flexible; it can be further subdivided into subclasses as the need arises.

You will find that ROS is an indispensable tool for recreation planning on your Forest. ROS can be used to:

- Inventory existing opportunities.
- Analyze the effects of other resource activities.
- Estimate the consequences of management decisions on planned opportunities.
- Link user desires with recreation opportunities.
- Identify complementary roles of all recreation suppliers.
- Develop standards and guidelines for planned settings and monitoring activities.
- Help design integrated project sets for Forest Plan implementation.

The end product of recreation management is the experience people have. The key to providing most experience opportunities is the setting and how it is managed. As a land manager, you can facilitate (or hamper) many desired experiences by the way you manage such "setting indicators" as access, remoteness, naturalness, facilities, social encounters, visitor impacts, and the visitors themselves.



The matrices presented in this brochure will help you perform many of the ROS planning steps, including integrated project design. The matrices establish limits of acceptable change for each indicator in a given setting. The "norm" in the matrices describes normal conditions found in the setting. "Fully compatible" describes conditions that meet or exceed the

norm. "Inconsistent" (INCON) represents conditions that are not generally compatible with the norm, but may be necessary under some circumstances to meet management objectives. "Unacceptable" defines conditions that, under any circumstance, do not permit the creation or maintenance of a given setting. Where unacceptable conditions are unavoidable, a change in setting will often result, which must be handled appropriately in the Forest planning NEPA process.

For inventory guidelines and additional details on evaluating inconsistencies, consult Chapter 20 of the USDA ROS Users Guide. The complete process for using ROS in plan implementation can be found in Chapter 60. Other ROS references are listed in the red 1986 ROS book on pages III-59-76.



As branches brush the sides of a jeep, and the wheel tracks become faint, this "primitive" road on the Cherokee NF offers the opportunity to feel some challenge and self-reliance



The opportunity to feel more challenge and self-reliance on driving skills can be built into "primitive" roads on steeper terrain. This example was constructed to user specifications on the Wenatchee NF. The key is to provide challenging opportunities at differing levels of difficulty where conditions permit.



ACCESS

Access includes type and mode of travel. Highly developed access generally reduces the opportunities for solitude, risk, and challenge. However, it can enhance opportunities for socializing, and feelings of safety and comfort. Accessibility for persons with disabilities can be organized along the ROS framework. Access in Rural and Urban settings should be completely barrier-free. Increasing difficulty should be designed into travelways as one moves toward the Primitive end of the spectrum to elicit greater feelings of challenge and achievement.

ACCESS

	TRAIL COUNTRY TRAILS	NON-MOTORIZED TRAILS	MOTORIZED TRAILS AND PRIMITIVE ROADS (TRAFFIC SER D)	CONTROLLED (21 TSL INCRS)	FULL ACCESS
PRIMITIVE	NORM	NORM	UNACCEPTABLE		
SEMI-PRIMITIVE NON-MOTORIZED	NORM	INCON	UNACCEPTABLE		
SEMI-PRIMITIVE MOTORIZED	FULLY COMPATIBLE		NORM	INCON	UNACCEPTABLE
ROADED NATURAL	FULLY COMPATIBLE			NORM (1)	NORM
RURAL	FULLY COMPATIBLE				NORM
URBAN	FULLY COMPATIBLE				NORM

- (1) ROADED NATURAL MAY BE PRESCRIBED IN CERTAIN CIRCUMSTANCES WITH ROADS PARTIALLY OR FULLY CLOSED
- (2) TSL = TRAFFIC SERVICE LEVEL. IN TSL-D PRIMITIVE ROADS SHOULD PROVIDE CHALLENGE TO 4-WHEEL DRIVE AND HIGH CLEARANCE VEHICLES BUT DISCOURAGE USE BY HIGHWAY VEHICLES BY DEFINITION. THEY ARE SINGLE-USE CONTROLLED TRAFFIC ROADS. THE SURFACE IS ROUGH, STABLE DURING DRY WEATHER. ROTTING IS CONTROLLED FOR PROTECTION OF WATER ONLY.



REMOTENESS

Remoteness refers to the extent to which individuals perceive themselves removed from the sights and sounds of human activity. A lack of remoteness is important for some setting experiences.

REMOTENESS

	+ OUT OF SIGHT AND SOUND OF HUMAN ACTIVITY MORE THAN 1 AND 1/2 HR WALK	DISTANT SIGHT AND/OR SOUND OF HUMAN ACTIVITY MORE THAN 1/2 HR WALK FROM ANY MOTORIZED TRAVEL	DISTANT SIGHT AND/OR SOUND OF HUMAN ACTIVITY MORE THAN 1/2 HR WALK FROM ANY BETTER THAN PRIMITIVE ROADS	REMOTENESS OF LITTLE RELEVANCE
PRIMITIVE	NORM	INCON	UNACCEPTABLE	
SEMI-PRIMITIVE NON-MOTORIZED	FULLY COMPATIBLE		INCON	UNACCEPTABLE
SEMI-PRIMITIVE MOTORIZED	FULLY COMPATIBLE			INCON
ROADED NATURAL	FULLY COMPATIBLE			
RURAL	FULLY COMPATIBLE			
URBAN	FULLY COMPATIBLE			

* LEGISLATIVE DIRECTION, E.G. WILDERNESS ACT MAY REQUIRE PRIMITIVE MANAGEMENT ON LANDS LESS REMOTE THAN THIS.



Nonmotorized Trails are the norm in SPNM settings, but as here in North Carolina, "existing primitive" roads may sometimes be used as nonmotorized travelways.



This model exemplifies the way in which the opportunity for a sense of remoteness is maintained in a Wilderness or backcountry area. (Beyond the ridgeline). Cable yarding and loading of logs is performed on a road at the bottom of the slope, rather than at the ridgeline, to maintain distance and landform screens from motorized activity.



SOCIAL ENCOUNTERS

This factor refers to the number and type of other recreationists met along travelways, or camped within sight or sound of others. This setting indicator measures the extent to which an area provides experiences such as solitude, or the opportunity for social interaction. Increasing the number of visitors to an area changes the kind of recreation experience offered, attracting new users and causing others to leave.

SOCIAL ENCOUNTERS

	4 OR FEWER OR LESS MET PER DAY. LESS THAN 5 VISIBLE PARTIES CAMPING AT CAMPSITE	6-10 PARTIES MET PER DAY OR 10-15 PARTIES VISIBLE AT CAMPSITE	MODERATE TO HIGH CONTACT (IN ROADS OR ON TRAILS) AND OR SEVERED SITES	MODERATE TO HIGH CONTACT IN VISITED SITES, ON ROADS AND TRAILS	LARGE NUMBERS OF VISITS IN NEARBY AREAS. HIGH NUMBER OF SOCIAL ENCOUNTERS.
PRIMITIVE	NORM	INCON	UNACCEPTABLE	UNACCEPTABLE	UNACCEPTABLE
SEMI-PRIMITIVE NON-MOTORIZED	NORM	INCON	UNACCEPTABLE	UNACCEPTABLE	UNACCEPTABLE
SEMI-PRIMITIVE MOTORIZED	NORM	INCON	UNACCEPTABLE	UNACCEPTABLE	UNACCEPTABLE
ROADED NATURAL	FULLY COMPATIBLE	FULLY COMPATIBLE	NORM	INCON	UNACCEPTABLE
RURAL	FULLY COMPATIBLE	FULLY COMPATIBLE	FULLY COMPATIBLE	NORM	INCON
URBAN	FULLY COMPATIBLE	FULLY COMPATIBLE	FULLY COMPATIBLE	FULLY COMPATIBLE	NORM

* SEE REGIONAL SUPPLEMENTS FOR PARTY SIZE LIMITATIONS



VISITOR MANAGEMENT

This includes the degree to which visitors are regulated and controlled as well as the level of information and services provided for visitor enjoyment. In some opportunity settings, controls are expected and appropriate. For instance, people sometimes seek developed settings for security and safety. Elsewhere, on-site controls may detract from desired experiences, such as independence, self-reliance, and risk-taking.

The type and level of information, and where it is provided to the visitor, may facilitate or hinder a desired experience. On-site interpretive and directional signing may adversely affect the visitor where experiences such as self-discovery, challenge, and risk are important. In other situations, on-site information may be essential to achieve desired experiences. Generally, on-site information is more appropriate at the developed end of the spectrum, while off-site sources are preferable at the primitive end.



Learning by self-discovery is a key experience opportunity provided in Primitive and Semi-Primitive Non-MotORIZED settings. Visitors learn primarily from observation and information they bring to the site.

VISITOR MANAGEMENT

	LOW REGIMENTATION. NO ON-SITE CONTROLS OR INFORMATION FACILITIES	SUBTLE ON-SITE REGIMENTATION AND CONTROLS. VERY LIMITED INFORMATION FACILITIES	ON-SITE REGIMENTATION AND CONTROLS ARE NOTICEABLE BUT HARMONIZE WITH THE NATURAL ENVIRONMENT. SIMPLE INFORMATION FACILITIES	REGIMENTATION AND CONTROLS OBVIOUS AND NUMEROUS BUT HARMONIZE WITH THE NATURAL ENVIRONMENT. MORE COMPLEX INFORMATION FACILITIES	REGIMENTATION AND CONTROLS OBVIOUS AND NUMEROUS. SOPHISTICATED INFORMATION EXHIBITS
PRIMITIVE	NORM	INCON	UNACCEPTABLE	UNACCEPTABLE	UNACCEPTABLE
SEMI-PRIMITIVE NON-MOTORIZED	NORM	INCON	UNACCEPTABLE	UNACCEPTABLE	UNACCEPTABLE
SEMI-PRIMITIVE MOTORIZED	NORM	INCON	UNACCEPTABLE	UNACCEPTABLE	UNACCEPTABLE
ROADED NATURAL	FULLY COMPATIBLE	FULLY COMPATIBLE	NORM	INCON	UNACCEPTABLE
RURAL	FULLY COMPATIBLE	FULLY COMPATIBLE	FULLY COMPATIBLE	NORM	INCON
URBAN	FULLY COMPATIBLE	FULLY COMPATIBLE	FULLY COMPATIBLE	FULLY COMPATIBLE	NORM



Minimizing the number of parties visible from campsites is one of the most critical social encounter elements to users of Primitive and Semi-Primitive settings. This example represents the ultimate in solitude, no other parties are visible.



FACILITIES AND SITE MANAGEMENT

This indicator refers to the level of site development. A lack of facilities and site modifications can enhance feelings of self-reliance and independence, and can provide experiences with a high degree of naturalness. Highly developed facilities can add feelings of comfort and convenience, and increase opportunities for socializing.

ON-SITE DEVELOPMENT

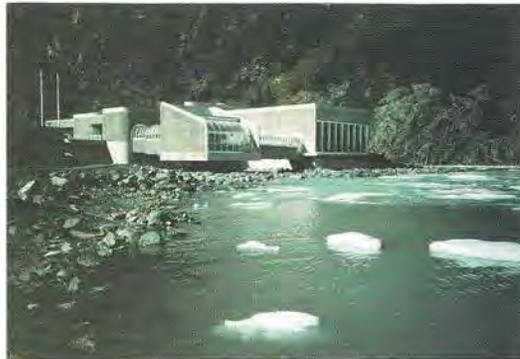
	NO FACILITIES FOR USER COMFORT, RUSTIC AND RURAL THEMES ONLY OR SITE PROTECTION ONLY. UNDIMENSIONED NATIVE MATERIALS ONLY.	RUSTIC AND RURAL THEMES PRIMARILY FOR SITE PROTECTION. NO EVIDENCE OF SYNTHETIC MATERIALS. USE UNDIMENSIONED NATIVE MATERIALS.	RUSTIC FACILITIES PROVIDING SOME COMFORT FOR THE USER AS WELL AS SITE PROTECTION. USE NATIVE MATERIALS BUT WITH MORE REFINEMENT IN DESIGN. SYNTHETIC MATERIALS SHOULD NOT BE EVIDENT.	SOME FACILITIES DESIGNED PRIMARILY FOR USER COMFORT AND CONVENIENCE. SOME SYNTHETIC BUT HARMONIOUS MATERIALS MAY BE INCORPORATED. DESIGN MAY BE SOMEWHAT COMPLEX AND REFINED.	FACILITIES MOSTLY DESIGNED FOR USER COMFORT AND CONVENIENCE. SYNTHETIC MATERIALS ARE COMMONLY USED. FACILITY DESIGN MAY BE HIGHLY COMPLEX AND REFINED BUT IN HARMONY OR COMPLIMENTARY TO THE SITE.
PRIMITIVE	NORM	PRIM	UNACC	UNACC	UNACC
SEMI-PRIMITIVE NON-MOTORIZED	NORM	NORM	UNACC	UNACC	UNACC
SEMI-PRIMITIVE MOTORIZED	NORM	NORM	UNACC	UNACC	UNACC
ROADED NATURAL	NORM	NORM	NORM	UNACC	UNACC
RURAL	NORM	NORM	NORM	NORM	UNACC
URBAN	NORM	NORM	NORM	NORM	NORM



This bridge is more complex in design and made of more refined materials appropriate for Rural settings.



This rustic bridge is constructed of only natural undimensioned materials appropriate for Semi-Primitive settings.



Urban facilities such as the Portage Glacier Visitor Center may be appropriate nodes in such settings as Roaded Natural or Rural as long as they do not adversely affect the desired experiences in those settings surrounding the facility.



VISITOR IMPACTS

This factor refers to the impacts of visitor use on the environment. The relevant question for managers is not "how can impacts be prevented", but rather, "how much change will be allowed and which actions are appropriate for control". The matrix on the following page suggest appropriate actions for controlling impacts on soil and vegetation. Impacts on wildlife habitat, and on air, water, and sound quality affect the visitor's experience as well. Visitor impacts can alter wildlife habitat or displace wildlife species, including indicator species, which provide an important means of monitoring recreation related impacts on fish and other wildlife. Maintaining air, water, and noise quality standards in the face of visitor impacts is important in all ROS classes.



This simple rustic bridge is made of natural, but dimensioned, materials appropriate for a Roaded Natural setting.

VISITOR IMPACTS

	UNNOTICABLE IMPACTS NO SITE HARDENING	SUBORDINATE IMPACTS NO SITE HARDENING	SUBORDINATE IMPACTS LIMITED SITE HARDENING	SUBTLE SITE HARDENING	SITE HARDENING MAY BE DOMINANT BUT IN HARMONY
PRIMITIVE	NORM	INCON			UNACCEPTABLE
SEMI-PRIMITIVE NON-MOTORIZED		NORM	INCON		
SEMI-PRIMITIVE MOTORIZED			NORM	INCON	
ROADED NATURAL				NORM	INCON
RURAL	FULLY COMPATIBLE				NORM
URBAN	FULLY COMPATIBLE				



This southern California campground illustrates site hardening appropriate to an Urban facility. Curb cuts and a ramp to each unit should be provided for disabled campers.



In this eastern middleground landscape the evident timber harvest maintains vegetative texture to accomplish partial retention.

NATURALNESS

	PRESERVATION	RETENTION	PARTIAL RETENTION	MODIFICATION	MAXIMUM MODIFICATION
PRIMITIVE	NORM	INCON			UNACCEPTABLE
SEMI-PRIMITIVE NON-MOTORIZED		NORM	INCON		
SEMI-PRIMITIVE MOTORIZED			NORM (1)	INCON	
ROADED NATURAL		NORM	NORM	NORM (2)	INCON (3)
RURAL	FULLY COMPATIBLE		NORM	NORM (2)	INCON (3)
URBAN	FULLY COMPATIBLE				NA

(1) NORM FROM SENSITIVE ROADS AND TRAILS (SEE USDA HANDBOOK 462)
 (2) NORM ONLY IN MG2 WHERE ROADED MODIFIED SUBCLASS IS USED (SEE USDA HANDBOOK 462)
 (3) UNACCEPTABLE WHERE ROADED MODIFIED SUBCLASS IS USED



Providing basic human habitat needs is important in each setting, particularly in dispersed parts of Roaded settings. Like the other animals, people desire protection from the elements, hiding cover to screen out other individuals and activities, close proximity to water, natural-appearing edges, and an unencumbered, flat site for camping, picnicking, etc.



NATURALNESS

Refers to the degree of naturalness of the setting; it affects psychological outcomes associated with enjoying nature. This indicator is portrayed by using a compatible visual quality objective (VQO) for each setting, as shown in the matrix on the next page. The USDA Landscape Management Handbook series can provide further guidance.



Along Semi-Primitive Non-MotORIZED trails, very small openings such as this may be appropriate to add sunlight and fall color. Except for a few stumps, negative elements are not evident achieving the retention VQO.

ROS offers a unique way of thinking about recreation opportunities—they are more than just activities or areas. Clearly, ROS can play an integral role in all aspects of recreation planning on your Forest. You can use it to inventory recreational resources, to estimate the consequences of management decisions, and to match experiences desired by recreationists with available opportunities.

Recreation Facility Development Scales

Scale #	Definition
0	<p>No site modification</p> <ul style="list-style-type: none"> ○ No constructed improvements evident at the site ○ Little to no controls or regimentation ○ Primary access usually over primitive roads ○ Spacing informal and often established by user
1	<p>Almost no site modification.</p> <ul style="list-style-type: none"> ○ Rustic or rudimentary improvements designed for protection of the site rather than comfort of the users. ○ Use of synthetic materials excluded. ○ Minimum controls are subtle. ○ No obvious regimentation. ○ Primary access usually over primitive roads ○ Spacing informal and extended to minimize contacts between users.
2	<p>Minimal site modification.</p> <ul style="list-style-type: none"> ○ Rustic or rudimentary improvements designed primarily for protection of the site rather than the comfort of the users. ○ Use of synthetic materials avoided. ○ Minimum controls are subtle. ○ Little obvious regimentation. ○ Spacing informal and extended to minimize contacts between users. ○ Primary access usually over primitive roads. ○ Interpretive services informal, almost subliminal.
3	<p>Moderate site modification.</p> <ul style="list-style-type: none"> ○ Facilities about equal for protection of natural site and comfort of users. ○ Contemporary/rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. ○ Roads may be hard surfaced and trails formalized. ○ Development density about 3 family units per acre. ○ Primary access may be over high standard roads. ○ Interpretive services informal if offered, but generally direct.
4	<p>Heavy site modification.</p> <ul style="list-style-type: none"> ○ Some facilities designed strictly for comfort and convenience of users. ○ Luxury facilities not provided. ○ Facility design may incorporate synthetic materials. ○ Extensive use of artificial surfacing of roads and trails. ○ Vehicular traffic control usually obvious. ○ Primary access usually over paved roads. ○ Development density 3-5 family units per acre. ○ Plant materials usually native. ○ Interpretive services, if offered, often formal or structured.
5	<p>Extensive site modification.</p> <ul style="list-style-type: none"> ○ Facilities mostly designed for comfort and convenience of users and usually include flush toilets; may include showers, bathhouses, laundry facilities, and electrical hookups. ○ Synthetic materials commonly used. ○ Formal walks or surfaced trails. ○ Regimentation of users is obvious. ○ Access usually by high-speed highways. ○ Development density 5 or more family units per acre. ○ Plant materials may be non-native. ○ Formal interpretive services usually available. Designs formalized and architecture may be contemporary. ○ Mowed lawns and clipped shrubs not unusual.

Scenery Management System (SMS)

Overview, Management Implications, & Integration with Plan Revision

Lis Novak & Pat Thomas, February 2007

Introduction

The Scenery Management System (SMS) is a systematic approach to inventory, analyze, and monitor the scenic resources. The system is used in the context of ecosystem management to determine the relative value and importance of scenery, assist in establishing overall resource objectives, and ensure high-quality scenery for future generations.

Concepts

SMS recognizes natural disturbance processes such as fire, insects, and disease, to be part of the natural landscape and play an important role in maintaining healthy, sustainable, and scenic landscapes. These disturbance regimes are evaluated as part of an evolving landscape and can create positive changes to the scenery integrity of a landscape. A more diverse mosaic of vegetation, increased species diversity, and diversity of age classes are all potential results of natural disturbance processes that will be compared with positive attributes defined in desired landscape character descriptions. SMS planning also recognizes that without these disturbance processes, the likelihood of catastrophic events is increased and the resulting landscape will likely not meet established desired conditions for vegetation, scenery, or other natural resources.

SMS recognizes ecological processes and the resulting landscapes as a dynamic ecosystem. Instead of basing objectives for scenery on one landscape condition at one point in time, the objectives are linked to a range of conditions that link to the historic range of variability. Long term results as opposed to immediate results are considered when analyzing the effects to scenic resources. For instance, immediately after a fire, there are short term effects such as: red needles, burned trunks, snags, and possibly little or no understory vegetation. Depending on the intensity of the fires, these effects are often short term (one or two years). As the landscape recovers, the short term effects diminish and long term changes such as: mosaic of vegetation patterns, snags punctuating the new growth canopies, and variety in colors and textures begin to appear. These changes add interest and diversity to the landscape and the effects to the scenic resources are considered positive by most people.



2003 fires showing the effects on typical Moderate SIO landscape

SMS recognizes that some man-made components of a landscape contribute to the landscape's valued character and are considered as positive attributes to the overall scenic quality. This premise is different from the Visual Management System (VMS) where most man-made features were considered a negative impact to the natural environment. SMS recognizes that some man-made features add to the aesthetics of certain landscapes and are identified as positive attributes of those landscapes. Examples of man-made features that may be identified as valued, positive cultural attributes include: reservoirs, old barns, historic log cabins, split rail fencing, agricultural or rural settings, ghost towns, etc.

Management Implications and Examples:

By recognizing that landscapes change over time and natural disturbances are a vehicle for that change, objectives for scenery extend beyond what is considered “pretty” and is more closely aligned with “healthy” and sustainable resource conditions. This allows managers the flexibility to select tools such as prescribed fire and/or mechanical treatments such as timber harvest and design those treatments to meet or maintain desired conditions (DCs) for vegetation and wildlife, while also meeting the DC for scenic resources.

For example: Burned trees/vegetation were typically not desired (especially in foreground areas) under VMS. Under SMS, burned trees are considered part of the naturally evolving and healthy landscape. The SMS considers bridging beyond one vegetation condition at one point in time and recognizes that changes occur in the landscape that may, when viewed immediately upon project completion, not be visually pleasing to some people but when viewed in a larger context (landscape character description) and understood as temporary conditions (until new growth starts to come in) the longer term effects will be positive to both the ecological condition and scenic character of the area. In project analysis, the proposed action is compared to the No Action alternative. Sometimes a no action scenario results in conditions that deviate even further from desired conditions (further outside the historic range of variation) due to the likelihood of a high intensity stand replacing fire that could burn an entire view shed as opposed to the mosaic anticipated from implementing the prescribed burn in the proposed action.

A range of treatment options are available under each Scenery Integrity Objective (SIO). An SIO assignment does not prescribe what tools and treatments are or are not appropriate. The SIO is simply the desired outcome for the scenic resources upon completion of an action. Project planning, design, and implementation, are crucial in meeting the assigned SIO. How the tool is used, as opposed to which tool is used, becomes the focus.

For example: Timber harvest is proposed to reduce fuel loading in a Wildland Urban Interface (WUI). The assigned SIO is “high” due its visibility from adjacent residents and unique combination of landscape attributes (Scenic attractiveness rating of A). This type of scenario will require extra sensitivity in how the fuel reduction is designed and implemented but does NOT eliminate the option of performing vegetation treatments (mechanical or fire use). It simply means that the resulting landscape (post-treatment) meets the project objective (reducing fuel loading) while also meeting the assigned SIO. As described earlier, the analysis will consider natural disturbance regimes and long term effects when determining whether an SIO is achieved. If the treatment is designed to mimic natural disturbance regimes and the longer term effects to scenery (increased species and age class diversity) are considered, achievement of a high SIO may be feasible. It also bears repeating that the proposed action will always be assessed along side a no action alternative, often which could result in catastrophic events with negative short term and possibly effects to the many resources.

For example: The purpose and need for a proposed mechanical treatment is to manage the existing vegetation toward desired vegetation conditions. With appropriate design, the action would increase the diversity in species and size classes and create a mosaic that better reflects historic fire regimes. These desired vegetation conditions are also referenced in the desired landscape character description. In doing so, the objectives for scenery and the objectives for vegetation are not in conflict with one another and are striving for the same end product.

References: Examples and specific techniques for designing mechanical treatments can be referenced in *USDA FS HB No. 559, Volume 2, Chapter 5, Landscape Management, Timber*. Examples and specific techniques for designing prescribed burns can be referenced in *USDA FS HB No. 608, Volume 2, Chapter 6, Landscape Management, Fire*. Although the VQO language in these handbooks is obsolete, the mitigation techniques (feathering edges, creating openings that follow natural breaks in vegetation, topography and geology remain valid

Scenic Inconsistencies

SIO's are developed for broad landscapes. Within these landscapes, there may be some pre-existing features or landscape modifications (power lines, mines, roads, vegetation treatments, and others) that are inconsistent with the assigned SIO. Typically, power lines and pipelines are maintained as long term effects on the landscape. These inconsistencies should be addressed at the project level. View points, visibility and other site-specific factors will influence whether the SIO is or isn't achievable at a project scale. The trade-offs for the inconsistency, mitigating the inconsistency, or changing the DC will require further analysis and disclosure. The line officer will decide what course of action will be taken and the effects of that action are disclosed at project level.



New projects, such as power lines or pipelines, should be designed with proper mitigations to meet the assigned SIO. In addition, some existing features which have been in place and may not meet the assigned SIO should also be evaluated for potential mitigation techniques to better meet the assigned SIO. Examples of mitigation for a new/replacement transmission power lines are: coloring towers to blend with surrounding landscape, reducing the number of towers, utilizing non-reflective conductors, Kootenai River Corridor

locating towers away from line of site at key observation points, and others.

As with all resources, SIO's are considered desired conditions. The SIO map will serve as the forest wide desired conditions for scenery. Project level planning may indicate an opportunity to reduce existing impacts or mitigate conditions associated with the long term effects of power line/utility corridors and better meet the DC.

Another example of an inconsistency may be evidence of previous timber harvest where the created patterns do not meet the assigned SIO's. In these situations, rehabilitation techniques such as feathering to softening straight line edges, unit linkage, etc may be proposed.

References: Examples and specific techniques for designing mechanical treatments can be referenced in *USDA FS HB No. 559, Volume 2, Chapter 5, Landscape Management, Timber*. Examples and specific techniques for designing and mitigating scenic impacts of utility corridor can be referenced in *USDA FS HB No. 608, Volume 2, Chapter 2, Landscape Management, Utilities*.

For additional detailed information refer to the Landscape Aesthetics -SMS Handbook- USDA Forest Service

Scenic Integrity

The highest scenic integrity ratings are given to those landscapes where the valued landscape attributes appear complete and little or no visible deviations are evident. Scenic Integrity is used to describe both existing (Existing Scenic Integrity) and desired (Scenic Integrity Objective) conditions. (*Landscape Aesthetics, A Handbook for Scenery Management, USDA, FS HB 701, page 2-1*)

Scenic Integrity Objective (SIO)	Definitions
Very High	Landscape is intact with only minor changes from the valued landscape character associated with significant scenic landscapes. This SIO is typically (but not exclusively) associated with specially designated areas such as wilderness or other designations that imply the landscape is natural appearing
High	Management activities are unnoticed and the landscape character <i>appears</i> unaltered.
Moderate	Management activities are noticeable but are subordinate to the landscape character. The landscape appears slightly altered
Low	Management activities are evident and sometimes dominate the landscape character but are designed to blend with surroundings by repeating line. Form, color, texture of landscape character attributes. The landscape appears altered.
Very Low	Management activities create a “heavily altered landscape”. Changes may strongly dominate the landscape. Note: This SIO is typically not a goal or objective

Integrating with Forest Plan Direction – Kootenai National Forest Example

SIOs were developed utilizing the direction contained in the Landscape Aesthetics Handbook. The SIO map was then compared with the MA map on the Kootenai National Forest to ensure SIOs complimented the desired settings and outcomes prescribed by the various MAs. Some adjustments were made, primarily in designated areas where a Very High SIO was essential in meeting MA direction. The following table displays the correlation between MAs and compatible SIOs.

MA	SIO
MA 1a Wilderness	VH
MA 1b Proposed Wilderness	VH
MA 1c Wilderness Study Areas	VH
MA 1d Wildlands	VH – w/in proposed W H – outside of proposed W
MA 2b W & S Rivers: Wild	VH
MA 2b W & S Rivers: Scenic	H
MA 2b W & S Rivers: Recreational	H M - where development exists
MA 3 Special Interest Areas: Scenic	VH
MA 3 Special Interest Areas: Libby Gold Panning Area	M
MA 3 Special Interest Areas: All others	H
MA 4a Research Natural Areas	VH
MA 5a – Backcountry non-motorized	H M – in WUIs
MA 5b – Backcountry motorized	H M – surrounding developments & in WUIs
MA 5c-Backcountry with winter motorized	H M – in WUIs
MA 6 – General Forest	H in Scenic Class 1 areas M in Scenic Classes 2-3 areas L in Scenic Classes 4-7 areas
MA 7 – Primary Recreation Areas & Ski areas	H – surrounding the reservoir M - surrounding ski areas

Note: Since MAs 5, 6 and 7 have a mix of settings and experiences that are multi-themed across the MA, the SIOs will also vary. SIOs were determined using both the management emphasis of the specific locations within the MA, as well as the Scenic Class mapping developing using the SMS process (outlined in the Landscape Aesthetic Handbook).

An SIO of high is designated where landscapes exhibit outstanding, often unique attributes (Scenic Attractiveness rating of A) and where the use and visibility of the area is high (Concern Level 1 rating). Examples of a high SIO rating occurs with these MAs include: along Scenic Byways, surrounding key recreation destinations (rivers, reservoirs, etc.).

Landscapes that exhibit little scenic variety and are not commonly seen or used are assigned a low SIO. Remaining landscapes within these MAs are assigned a moderate SIO.



Trail Class Matrix

Trail Classes are general categories reflecting trail development scale, arranged along a continuum. The Trail Class identified for a National Forest System (NFS) trail prescribes its development scale, representing its intended design and management standards.¹ Local deviations from any Trail Class descriptor may be established based on trail-specific conditions, topography, or other factors, provided that the deviations do not undermine the general intent of the applicable Trail Class.

Identify the appropriate Trail Class for each National Forest System trail or trail segment based on the management intent in the applicable land management plan, travel management direction, trail-specific decisions, and other related direction. Apply the Trail Class that most closely matches the management intent for the trail or trail segment, which may or may not reflect the current condition of the trail.

Trail Attributes	Trail Class 1 Minimally Developed	Trail Class 2 Moderately Developed	Trail Class 3 Developed	Trail Class 4 Highly Developed	Trail Class 5 Fully Developed
Tread & Traffic Flow	<ul style="list-style-type: none"> Ⓢ Tread intermittent and often indistinct Ⓢ May require route finding Ⓢ Single lane with no allowances constructed for passing Ⓢ Predominantly native materials 	<ul style="list-style-type: none"> Ⓢ Tread continuous and discernible, but narrow and rough Ⓢ Single lane with minor allowances constructed for passing Ⓢ Typically native materials 	<ul style="list-style-type: none"> Ⓢ Tread continuous and obvious Ⓢ Single lane, with allowances constructed for passing where required by traffic volumes in areas with no reasonable passing opportunities available Ⓢ Native or imported materials 	<ul style="list-style-type: none"> Ⓢ Tread wide and relatively smooth with few irregularities Ⓢ Single lane, with allowances constructed for passing where required by traffic volumes in areas with no reasonable passing opportunities available Ⓢ Double lane where traffic volumes are high and passing is frequent Ⓢ Native or imported materials Ⓢ May be hardened 	<ul style="list-style-type: none"> Ⓢ Tread wide, firm, stable, and generally uniform Ⓢ Single lane, with frequent turnouts where traffic volumes are low to moderate Ⓢ Double lane where traffic volumes are moderate to high Ⓢ Commonly hardened with asphalt or other imported material
Obstacles	<ul style="list-style-type: none"> Ⓢ Obstacles common, naturally occurring, often substantial and intended to provide increased challenge Ⓢ Narrow passages; brush, steep grades, rocks and logs present 	<ul style="list-style-type: none"> Ⓢ Obstacles may be common, substantial, and intended to provide increased challenge Ⓢ Blockages cleared to define route and protect resources Ⓢ Vegetation may encroach into trailway 	<ul style="list-style-type: none"> Ⓢ Obstacles may be common, but not substantial or intended to provide challenge Ⓢ Vegetation cleared outside of trailway 	<ul style="list-style-type: none"> Ⓢ Obstacles infrequent and insubstantial Ⓢ Vegetation cleared outside of trailway 	<ul style="list-style-type: none"> Ⓢ Obstacles not present Ⓢ Grades typically < 8%

Trail Attributes	Trail Class 1 Minimally Developed	Trail Class 2 Moderately Developed	Trail Class 3 Developed	Trail Class 4 Highly Developed	Trail Class 5 Fully Developed
Constructed Features & Trail Elements	<ul style="list-style-type: none"> ⑩ Structures minimal to non-existent ⑩ Drainage typically accomplished without structures ⑩ Natural fords ⑩ Typically no bridges 	<ul style="list-style-type: none"> ⑩ Structures of limited size, scale, and quantity; typically constructed of native materials ⑩ Structures adequate to protect trail infrastructure and resources ⑩ Natural fords ⑩ Bridges as needed for resource protection and appropriate access 	<ul style="list-style-type: none"> ⑩ Structures may be common and substantial; constructed of imported or native materials ⑩ Natural or constructed fords ⑩ Bridges as needed for resource protection and appropriate access 	<ul style="list-style-type: none"> ⑩ Structures frequent and substantial; typically constructed of imported materials ⑩ Constructed or natural fords ⑩ Bridges as needed for resource protection and user convenience ⑩ Trailside amenities may be present 	<ul style="list-style-type: none"> ⑩ Structures frequent or continuous; typically constructed of imported materials ⑩ May include bridges, boardwalks, curbs, handrails, trailside amenities, and similar features
Signs²	<ul style="list-style-type: none"> ⑩ Route identification signing limited to junctions ⑩ Route markers present when trail location is not evident ⑩ Regulatory and resource protection signing infrequent ⑩ Destination signing, unless required, generally not present ⑩ Information and interpretive signing generally not present 	<ul style="list-style-type: none"> ⑩ Route identification signing limited to junctions ⑩ Route markers present when trail location is not evident ⑩ Regulatory and resource protection signing infrequent ⑩ Destination signing typically infrequent outside of wilderness; generally not present in wilderness ⑩ Information and interpretive signing not common 	<ul style="list-style-type: none"> ⑩ Route identification signing at junctions and as needed for user reassurance ⑩ Route markers as needed for user reassurance ⑩ Regulatory and resource protection signing may be common ⑩ Destination signing likely outside of wilderness; generally not present in wilderness ⑩ Information and interpretive signs may be present outside of wilderness 	<ul style="list-style-type: none"> ⑩ Route identification signing at junctions and as needed for user reassurance ⑩ Route markers as needed for user reassurance ⑩ Regulatory and resource protection signing common ⑩ Destination signing common outside of wilderness; generally not present in wilderness ⑩ Information and interpretive signs may be common outside of wilderness ⑩ Accessibility information likely displayed at trailhead 	<ul style="list-style-type: none"> ⑩ Route identification signing at junctions and for user reassurance ⑩ Route markers as needed for user reassurance ⑩ Regulatory and resource protection signing common ⑩ Destination signing common ⑩ Information and interpretive signs common ⑩ Accessibility information likely displayed at trailhead
Typical Recreation Environments & Experience³	<ul style="list-style-type: none"> ⑩ Natural, unmodified ⑩ ROS: Typically Primitive to Roaded Natural ⑩ WROS: Typically Primitive to Semi-Primitive 	<ul style="list-style-type: none"> ⑩ Natural, essentially unmodified ⑩ ROS: Typically Primitive to Roaded Natural Typically ⑩ WROS: Typically Primitive to Semi-Primitive 	<ul style="list-style-type: none"> ⑩ Natural, primarily unmodified ⑩ ROS: Typically Primitive to Roaded Natural ⑩ WROS: Typically Semi-Primitive to Transition 	<ul style="list-style-type: none"> ⑩ May be modified ⑩ ROS: Typically Semi-Primitive to Roaded Natural to Rural setting ⑩ WROS: Typically Portal or Transition 	<ul style="list-style-type: none"> ⑩ May be highly modified ⑩ Commonly associated with visitor centers or high-use recreation sites ⑩ ROS: Typically Roaded Natural to Urban ⑩ Generally not present in Wilderness

¹ For National Quality Standards for Trails, Potential Appropriateness of Trail Classes for Managed Uses, Design Parameters, and other related guidance, refer to FSM 2353, FSH 2309.18, and other applicable agency references.

² For standards and guidelines for the use of signs and posters along trails, refer to the Sign and Poster Guidelines for the Forest Service (EM-7100-15).

³ The Trail Class Matrix shows the combinations of Trail Class and Recreation Opportunity Spectrum (ROS) or Wilderness Recreation Opportunity Spectrum (WROS) settings that commonly occur, although trails in all Trail Classes may and do occur in all settings. For guidance on the application of the ROS and WROS, refer to FSM 2310 and 2353 and FSH 2309.18.