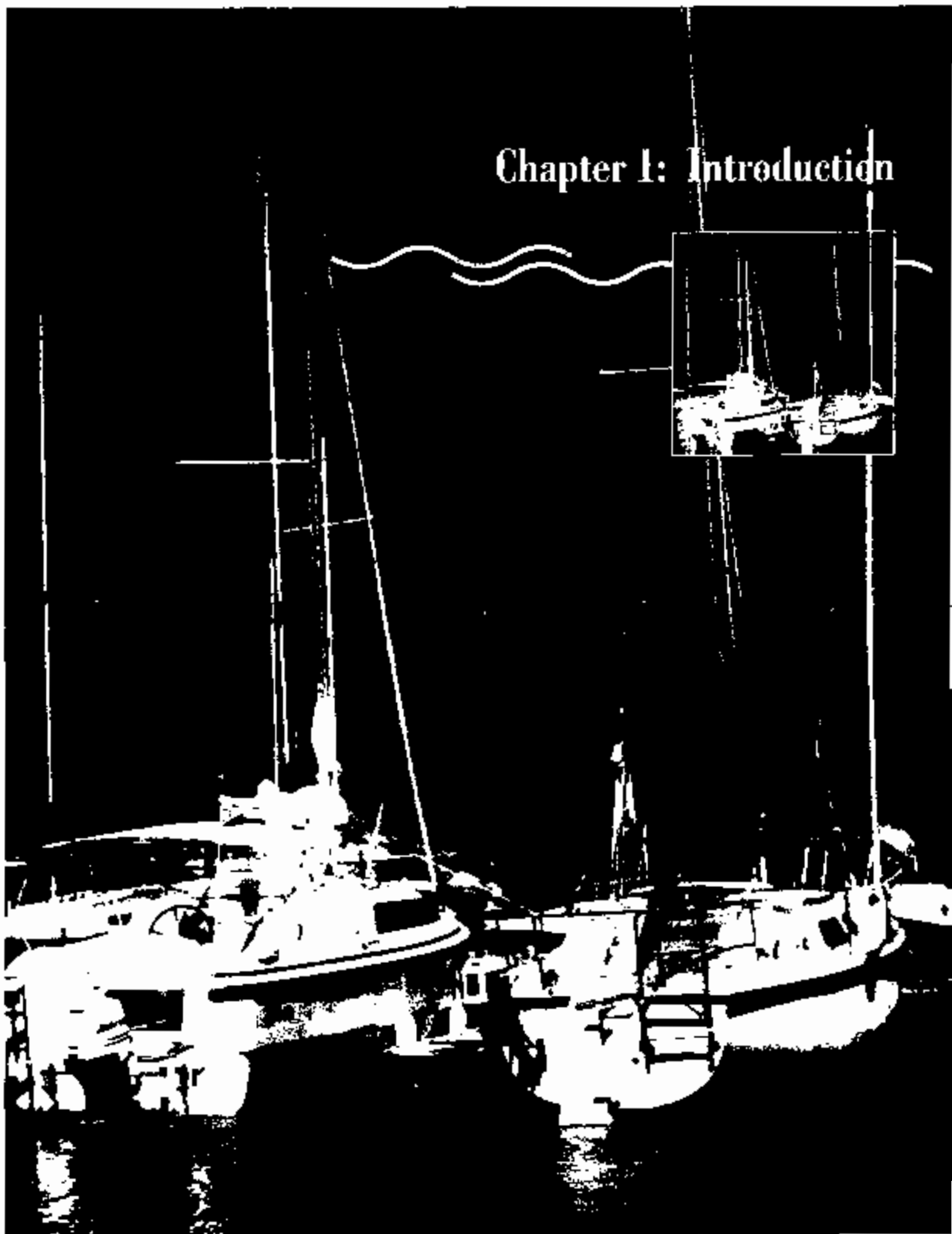
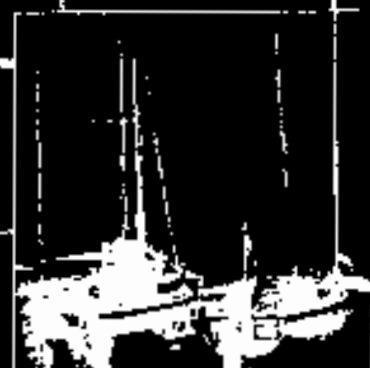


Chapter 1: Introduction



Introduction



Above, some visitors need special facilities.

Below, reasonable access is an important issue.

The outdoor recreation profession has become much more sophisticated in the 41 years since the government's first comprehensive assessment in 1962, entitled the *Outdoor Recreation Resources Review Commission*.

Water is a focal point of outdoor recreation. . . . Urban or rural, water is a magnet. Wherever they live, people show a strong urge for water-oriented recreation. There are many other reasons (purposes) for water resource programs, and recreation use often is incidental and unplanned. To say this, however, is to note how great are the opportunities.

Today, the Bureau of Reclamation (Reclamation) recognizes that water recreation management is no longer a matter of simply building a boat ramp, dock, parking area, and restroom. Water recreation management involves a thorough understanding of the water resource and its capability, current and future visitors, the type of experiences sought, regional recreation demand and supply, resource management planning, economic and non-economic valuation, visitor capacity, and other dimensions.

The Water Recreation Opportunity Spectrum (WROS) is a tool that planners and managers can use to make better decisions. It is modeled after the Recreation Opportunity Spectrum (ROS) system, yet tailored to water resources such as reservoirs, lakes, rivers, bays, estuaries, wetlands, coastal zones, and marine protected areas.

This guidebook provides operational guidance on how to implement WROS in inventorying, planning, and managing recreation opportunities on and adjacent to water resources. It is intended to be adaptive, given changing public recreation use, new information from monitoring or science, and the practical field experience gained by its application.

This guidebook contains four chapters. *Chapter 1: Introduction* provides important background information on the system. *Chapter 2: WROS Inventory* describes the procedural steps to map the current water recreation opportunities that an area is providing and identifies inconsistencies where management action might be appropriate. *Chapter 3: WROS Planning* overviews how WROS inventory information can interface with a resource management planning process. And *Chapter 4: WROS Management* provides a set of management guidelines for recreation-related elements in each of the WROS classes. The appendix contains important supporting information and references to other sources of information.

The Foundation of WROS

Several popular concepts in the outdoor recreation profession serve as the foundation for WROS.

The average visitor does not exist. Recreation science has revealed the great diversity in what outdoor recreationists desire for a recreation experience, expect upon arriving at a recreation site, and perceive and enjoy while recreating. Not only is there diversity among different recreation activity participants such as boaters, anglers, and campers, but there is also diversity among participants in each of these activities. For example, the recreation experience of sailing on a 200-acre urban reservoir for a few hours is certainly different from that of sailing on a 50-mile long rural reservoir for several days.

In much the same way as consumers can be segmented into groups by retailers based on some shared buying preferences, outdoor recreationists can be segmented into groups based on the recreation experiences they desire.

Recreationists also differ in other characteristics such as their place of residence, travel distance, recreational equipment, socioeconomic situation, racial and ethnic background, education, and knowledge of available opportunities.

The implication is that to plan and manage for a mythical average user is not appropriate because such an approach will leave out or not accommodate the diversity of the public interested in water resources. The conservation of recreation diversity is a fundamental purpose of the WROS system.

Don't try to be all things to all people. A specific lake, reservoir, or other body of water is a single resource within a regional and national system of water recreation opportunities. Each water resource can have special capabilities and opportunities to make an important contribution to the integrity of the larger system. Any individual lake, river, or reservoir cannot be all things to all people. Therefore, managers must identify the recreational role or niche of the water resource within the context of local, regional, and in some cases, national interests.

The implication is that it is not practical to plan and manage each water resource so that it provides all opportunities for all visitors. Each water resource should serve a particular recreational role or fill a niche within a larger

Don't try to be all things to all people. A specific lake, reservoir, or other body of water is a single resource within a regional and national system of water recreation opportunities.



Different boats have different requirements.

Managers provide opportunities for visitors to participate in a type of recreation activity in a specific setting which is defined by its important physical, social, and management attributes, to realize a particular type of experience and subsequent benefits.

system of diverse water recreation opportunities. The conservation of recreation diversity across a larger system will benefit the public and increase management effectiveness and efficiency for each specific water resource.

Managers provide recreation opportunities. The concept of recreation continues to evolve. Four decades ago, recreation was viewed principally as an activity, such as boating or skiing. However, in the 1970s, recreation science determined that recreationists are motivated by seeking a particular type of recreation experience and that a recreation activity is a means to an experiential end. It also determined that the conditions of the resource and how the recreation setting is managed can influence the kind of experience a person is likely to have. In the 1990s, recreation science further determined that recreation experiences lead to benefits for individuals, families, and communities and provide benefits to the economy and the environment.

Today, it is professionally accepted that recreation managers provide *recreation opportunities*. That is, managers provide opportunities for visitors to participate in a type of recreation activity in a specific setting which is defined by its important physical, social, and management attributes, to realize a particular type of experience and subsequent benefits. Figure 1 depicts the key components of a recreation opportunity and how they are linked to one another.

Figure 1. A Recreation Opportunity

<i>Recreation Activity</i>	+	<i>Setting</i>	=	<i>Experience</i>	>>>	<i>Benefits</i>
many activities		physical attributes managerial attributes social attributes		many dimensions multiple senses		individual community economic environmental
		<i>Managers Manage</i>		<i>Recreationists Consume</i>		<i>Society Gains</i>

As conveyed in figure 1, managers manage recreation activities and settings so that recreationists can consume a high quality, safe, and enjoyable recreation experience. Managers have the ability to change the activities and settings in an area to enhance the visitor's experience and maximize public benefits. The activities and setting attributes are the inputs and the outputs are the experiences and subsequent benefits.

A seamless system of water recreation opportunities. The American public is much more interested in enjoying high quality recreation opportunities than in understanding the names and missions of each local, State, and Federal agency that manages water resources. While public respect and understanding for an agency mission is desired and important, agencies should also strive to collaborate and contribute to the conservation of a larger system or network of water recreation opportunities.

The implication is that planning and managing for a seamless system of water recreation opportunities requires a set of recreation terms, concepts, and tools that is understood by all water recreation providers. This does not suggest that agencies need to change or replace existing approaches to planning or managing water recreation, but this does recognize the advantage of also employing a shared or common system (i.e., terms, concepts, and tools) to inventory, plan, and manage water recreation opportunities across agency jurisdictions. WROS is intended to be such an interagency tool for the conservation of recreation diversity and for ensuring a seamless delivery system of opportunities.

The implication is that planning and managing for a seamless system of water recreation opportunities requires a set of recreation terms, concepts, and tools that is understood by all water recreation providers.

An Overview of WROS

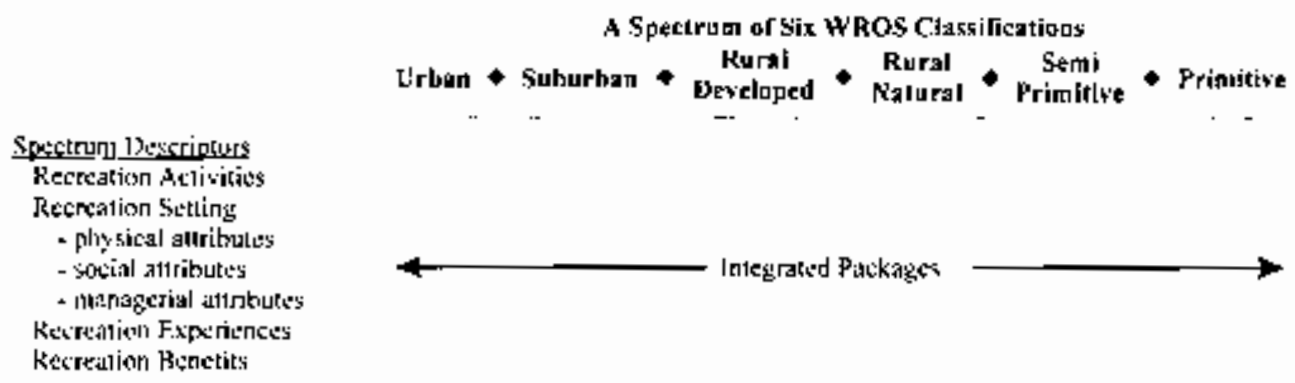
This section provides an overview of the important aspects of the WROS system.

The goal of WROS. As indicated in the preceding section, there is diversity among recreationists, water resource settings, and the agencies that manage these resources. This diversity is good and should be conserved. Likewise, recreation managers recognize that each specific water resource (e.g., lake, river, reservoir, bay) has a niche and contributes to a larger system of diverse recreation opportunities. Thus, *the overarching goal of WROS is to provide planners and managers with a framework and procedure for making better decisions for conserving a spectrum of high quality and diverse water recreation opportunities.*

WROS is a spectrum of six classifications of water recreation opportunities, that is, six integrated packages containing appropriate activities, settings, experiences, and benefits for each WROS class.

The WROS classifications. WROS is a spectrum of six classifications of water recreation opportunities, that is, six integrated packages containing appropriate activities, settings, experiences, and benefits for each WROS class. Figure 2 identifies the classifications and the components of a recreation opportunity.

Figure 2. The Water Recreation Opportunity Spectrum



Recreation activities are the leisure pursuits most commonly understood and referred to in the literature. There are hundreds of examples of recreation activities, and the list continues to grow because of new technology and changing public interests. Of course, not all activities can be provided in the same location, and a manager must decide which activities are appropriate for an area. WROS helps managers decide the appropriateness of various recreation activities by offering a general illustration of those that may be appropriate in each WROS class. (See figure 3.) It is important to note that figure 3 illustrates the general framework of WROS. There will be situations where a particular activity may or may not be appropriate. Sound professional judgment and due consideration of the local situation is needed to decide what are appropriate recreation activities.

Left, wildlife contribute to a visitor's experience.
Right, dramatic and expansive views are attractive to people.

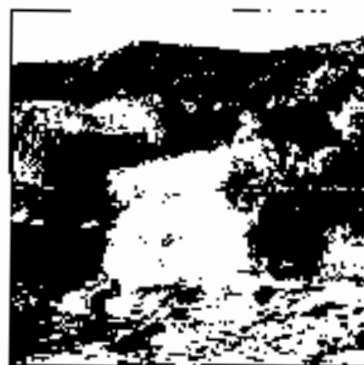
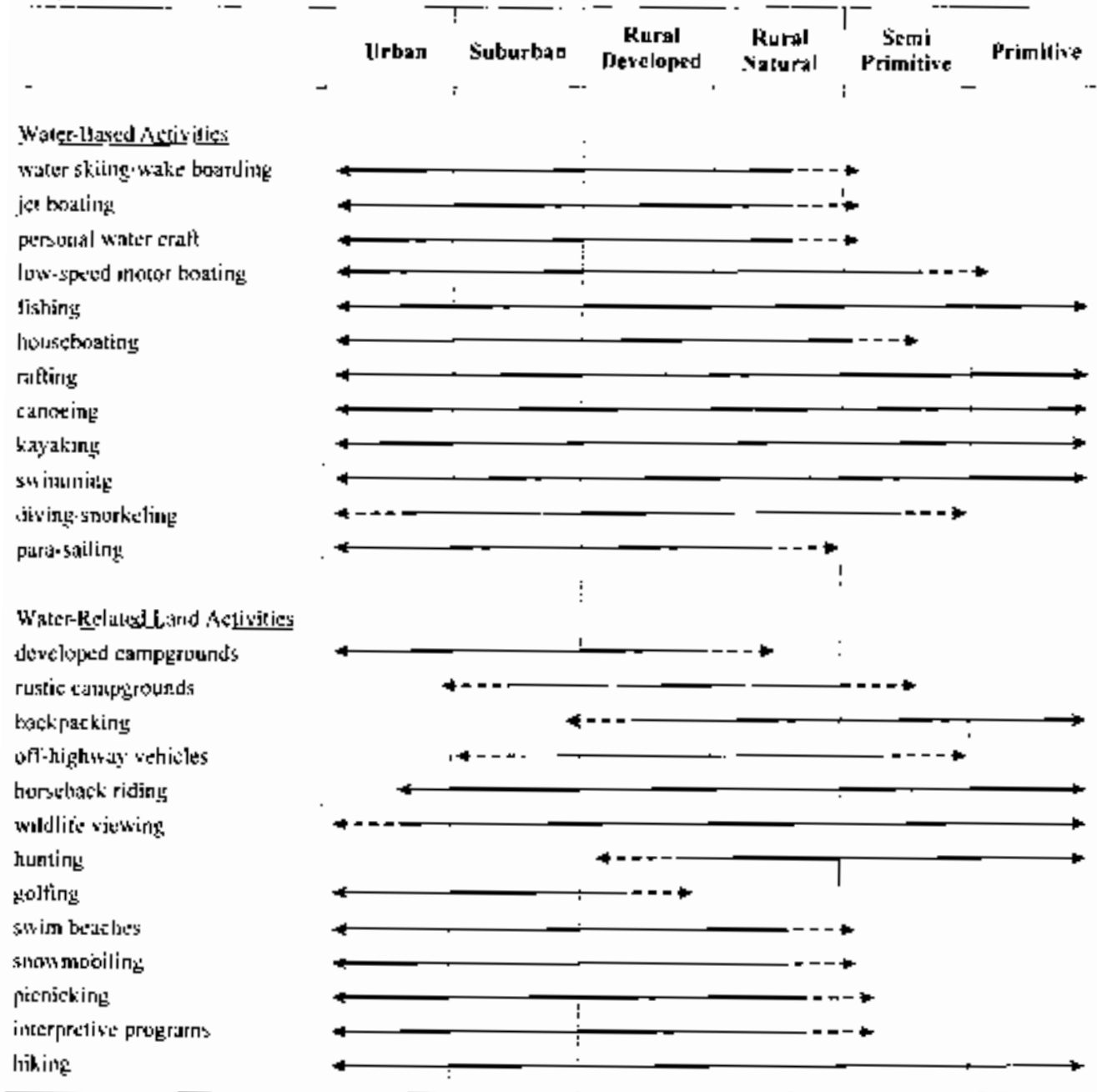


Figure 3. A Generalized Representation of Recreation Activities by WROS Class



A *recreation setting* is composed of physical, social, and managerial attributes. It is the combination of attributes that shapes or molds a specific activity into a particular experience. Managers spend most of their time and effort managing the recreation setting. The management guidelines in *Chapter 4: WROS Management* provide more detailed guidance for achieving optimum results.

Figure 4 illustrates various physical, social, and managerial attributes that can affect the desired recreation experience for an area. Figure 4 is not intended to be an exhaustive list, nor is it intended to suggest that each of these attributes must be considered. Furthermore, some attributes could be listed in more than one column (e.g., historic resources).

Figure 4. Examples of Recreation Setting Attributes

Physical Attributes	Social Attributes	Managerial Attributes
aquatic vegetation water quality soils/rocks/cliffs topography/slope fish and wildlife natural sounds visual resources water flows water elevations lightscaapes terrestrial vegetation endangered species human development -- industrial/commercial -- municipal/residential -- man-made structures -- infrastructure water surface acreage river length, width, gradient natural hazards air quality natural beauty geologic formations climate and winds	recreationists (type, number) visitor expectations patterns of visitation visitor behaviors visitor safety issues visitor conflicts vandalism and litter automobiles and trains historic sites cultural resources adjacent private land uses special uses or permits special values density of use types, size, and speed of boats shoreline activity airplanes commercial shipping type and level of unnatural sounds (noise) nuisance behavior unlawful activities	recreation facilities water storage facilities water delivery systems rules/regulations interpretation fees and charges site design health and safety closures length of season recreation maintenance recreation programs law enforcement/security signage restoration activities administrative sites reservoir drawdown water safety lights/markers timed flow releases fishery management vegetative management access roads/launches accessible facilities personnel and volunteers level of patrol

In the context of WROS, it is the totality of these setting attributes that converts a recreation activity into a recreation experience and subsequent benefits. Figure 5 provides a short paragraph describing the general nature of the setting attributes for each class for the purpose of introducing WROS, while *Chapter 4: WROS Management* provides the guidelines for some 115 setting attributes.

Figure 5. A Generalized Description of the Recreation Setting by WROS Class

Urban Setting: An urban WROS area may be found in extensively developed and populated cities and metropolitan spaces where virtually the entire landscape contains human-built structures. Municipal, industrial, commercial, and residential land uses dominate, and the sights, sounds, and smells are typical of a city environment. Natural features may be found in small neighborhood parks, commercial courtyards, streetscapes, riverways, residential gardens, or landscaping. The water resources tend to be highly channelized, manipulated, or altered to contain large fluctuations in water flow and for the protection of public safety and property. There is a great deal of management presence (e.g., personnel, rules, facilities, signs, services, conveniences, and security). Recreation use is very extensive, there is a great deal of diversity, socialization, and concentration, and there is a sense of security and conveniences. The sights, sounds, and smells of recreation and non-recreation use (e.g., municipal, industrial, commercial) are dominant in an urban setting. Examples of an urban WROS class may include the San Antonio Riverwalk, Denver's South Platte River, the Potomac River in the District of Columbia, Tampa Bay, Baltimore Harbor, San Francisco Bay, the Chicago waterfront on Lake Michigan, and the Colorado River as it flows past Laughlin, Nevada.

Suburban Setting: A suburban WROS area is on the fringe of the urban area. The sights, sounds, and smells of development and built structures are widespread. The built environment tends to be commercial and residential. The sights, sounds, and smells of commerce and everyday living are very obvious and prevalent, while naturally appearing settings may be found in community parks, greenways, trails, open space, natural areas, wetlands, estuaries, and tidal marshes. The water resources tend to be highly channelized, manipulated, or altered to contain large fluctuations in water flow and for the protection of public safety and property. Recreation management is very prevalent (e.g., personnel, rules, facilities, signs, services, conveniences, security). Recreation use, diversity, socialization, concentration, sense of security, and conveniences are very prevalent and obvious. The sights, sounds, and smells of recreation and non-recreation use (e.g., municipal, industrial, residential) are obvious but not dominant in a suburban setting. Examples of suburban WROS areas can be found on the outer edges of most metropolitan areas in the United States.

Rural Developed Setting: A rural developed WROS area is beyond a metropolitan area and the suburban ring of development. Rural developed areas may serve as "bedroom" communities for urban areas and may contain working farms and ranches, and towns and primary road networks are common. Development will be prevalent and common, yet the setting has a pastoral sense because of an interspersing of forests, water resources, hills, valleys, canyons, wetlands, open spaces, and agricultural land uses. Natural appearing shoreline edges are common, although various water controls or other structures are also common. Recreation management is prevalent and common but not as extensive as in an urban setting (e.g., personnel, rules, facilities, signs, services, conveniences, security). Recreation use, diversity, socialization, concentration, sense of security, and conveniences are common but less so than in a developed suburban or urban setting. The sights, sounds, and

Figure 5 Continued. A Generalized Description of the Recreation Setting by WROS Class

smells of recreation and non-recreation use are common, yet interspersed with locations and times when a sense of tranquility and escape from everyday challenges may be experienced by the urbanized visitor. Examples of rural developed areas may include areas with country estates, second homes and cabins, dams, power stations, primary and secondary roads, communication lines, resorts, marinas, small communities, full-service campgrounds, county and State parks, farms, ranches, and small commercial and industrial establishments.

Rural Natural Setting: A rural natural WROS area is a considerable distance from metropolitan areas and communities. Natural features are predominant on the landscape, and the presence of development is occasional or infrequent. Agriculture, tourism, and outdoor recreation are often primary industries. Rural natural areas are often large enclaves of public lands and waters. Natural resources dominate the landscape. The sights, sounds, and smells of development are infrequent. The water resources are bordered by natural appearing settings. Water controls or other structures are occasional along the shoreline. Management is occasionally noticeable in the form of patrols, facilities, signage, conveniences, and full services. Visitors desire a sense of tranquility and escape from their daily routine. Opportunity for visitors to see, hear, and smell nature is prevalent and common, as are occasions to enjoy periods of solitude. Recreation use, diversity, socialization, concentration, sense of security, and conveniences are periodic and occasional. Examples of a rural natural area might include unincorporated rural areas with occasional secondary and unpaved roads, small cabins, single residences, farms and ranches, rustic campgrounds, rural county and State parks, power lines, small stores and fuel services, and areas often bordering or surrounded by large expanses of public lands and waters.

Semi Primitive Setting: A semi primitive WROS area is a large expanse of natural resources that is far from any city or metropolitan area and a considerable distance from small communities, subdivisions, or developments. Natural resources dominate the landscape. Development is minor and the sights and sounds of human activity are few, but may include such evidence of human activity as distant farming operations, power lines, livestock, small buildings, old roadways, historic structures, and historic logging or mining. These water resources are often within large expanses of public lands and waters. Management, in the form of patrols, facilities, and signage, is seldom noticeable and the visitors are expected to have the equipment and skills to be able to navigate and enjoy this setting. Visitors desire a sense of tranquility and escape from their daily routine. Facilities are rustic and blend well into the setting. Resource protection is very important. Opportunity for visitors to see, hear, and smell nature is wide spread. Visitors sense solitude and remoteness. Examples of semi primitive settings are large expanses of State and Federal lands and waters that are commonly designated as a wild and scenic river, wilderness, backcountry lake, headwater, marine reserve, roadless area, or other type of State, Federal, or international protected area.

Primitive Setting: A primitive WROS area is a very large expanse of natural resources very far from development and settlement. Any sights, sounds, or smells of human activity are rare and very minor. The water resources and shorelines appear natural and show very little, if any, evidence of past human use such as historic homesteads and roadways. Management relies on visitor cooperation and stewardship, and activities often focus on resource protection, restoration, and monitoring. A sense of remoteness, wildness, solitude, and self-reliance is dominant among visitors. Visitor comforts, conveniences, and concentrations are not appropriate. Examples of primitive settings are large expanses of Federal lands and waters that are miles from development and settlement. The settings are commonly designated as a wild and scenic river, wilderness, backcountry lake, headwater, marine reserve, roadless area, or other type of Federal or international protected area.

A recreation experience is the psychological and physiological response to participating in a particular recreation activity and setting. The experience is the output of management's efforts and represents what is consumed by the recreationist. WROS helps planners and managers to focus on the recreation experience that is being provided and provides a general description of recreation experience for each WROS class.

Recreation science has contributed to identifying the important dimensions of a recreation experience, often referred to as motivations, psychological outcomes, or multiple satisfactions. Recreation science also recognizes that humans use all five senses to perceive or experience a situation; that is, a recreation experience can be affected by what one sees (e.g., wildlife and litter), hears (e.g., natural sounds and loud engine noises), smells (e.g., grasses and trees, barbecue, and pollution), touches (e.g., water temperature, beach sand, and broken glass), and tastes (e.g., water, food, and exhaust fumes). Figures 6 and 7 provide a general description of the important dimensions and senses that define the recreation experience in each WROS class. It is important to bear in mind that these generalizations are just generalizations and may need to be adapted to more accurately reflect a particular local situation. WROS encourages flexibility and adaptability based on sound professional judgment.

A recreation experience is the psychological and physiological response to participating in a particular recreation activity and setting.



The speed, wake, and sound of boats can alter a recreation setting.



Management rules and regulations can alter a recreation setting.



Safety considerations are very important.

Figure 6. Examples of Recreation Experiences by WROS Class

	WROS Spectrum					
	Urban	Suburban	Rural Developed	Rural Natural	Semi Primitive	Primitive
<p>Often Common Across Spectrum</p> <ul style="list-style-type: none"> 11 Enjoy the outdoors 11 Get refreshed 11 Have fun and pleasure 11 Enjoy friends and family 11 Change of pace 11 Get away from usual demands of life 11 Reduce stress 11 Chance to think and ponder 11 Enjoy physical exercise 11 Bond with family and friends 11 Help others develop skills 	<i>Important in all Settings</i>					
<p>Often Varies Across Spectrum</p> <ul style="list-style-type: none"> 11 Experience the sights, sounds, and smells of nature 11 Learn about nature and culture 11 Chance to dream and reflect 11 Sense of adventure and challenge 11 Sense of awe, wonder, humility 11 View wildlife and natural wonders 11 Experience challenge and risks 11 Sense of self-reliance, freedom, choice 11 Experience tranquility and peacefulness 11 Experience solitude 11 Experience new and different things 11 Sense of physical exertion 11 Feel inspired 	<i>Less Important</i> ← → <i>More Important</i>					
<p>Often Varies Across Spectrum</p> <ul style="list-style-type: none"> 11 Chance to watch and be around other people 11 Opportunity to socialize 11 Opportunity to meet new people 11 Sense of competition with others 11 exhilaration of speed and thrills 11 Test one's skills and equipment 11 Feel safe and secure in the outdoors 11 Enjoy comforts and conveniences in the outdoors 11 Opportunity for a brief respite from everyday life 	<i>More Important</i> ← → <i>Less Important</i>					

Figure 7. A Generalized Description of the Recreation Experiences by WROS Class

Urban Recreation Experience: Area provides very limited opportunities to see, hear, or smell the natural resources (e.g., forests, wildlife, aesthetics) because of the extensive level of development, human activity, and natural resource modification; watching and meeting other visitors is expected and desired; large group activities such as guided fishing, tour boat sightseeing, and beach sports are popular; opportunity to briefly relieve stress and to alter everyday routines is important; socializing with family and friends is important; large groups and families are common; a high sense of safety, security, comfort, and convenience is central and dominant; the mix of recreation activities may be diverse, ranging from those of relaxation and contemplation (e.g., sunbathing, reading, nature walking) to those of physical exertion, thrills, excitement, and challenge (e.g., para sailing, jet boating, water skiing); area often attractive to short time visitors, large affinity groups, tours, school groups; area may serve as a transportation corridor for transient visitors or as a staging area for others traveling to nonurban settings; area is popular with local urban residents as well as nonresident first-time tourists.

Suburban Recreation Experience: Area provides little opportunity to see, hear, or smell the natural resources (e.g., forests, wildlife, aesthetics) because of the widespread and very prevalent level of development, human activity, and natural resource modification; watching and meeting other visitors is expected and desired; opportunity to briefly relieve stress and to alter everyday routines is important; socializing with family and friends is important; large groups and families are common; a high sense of safety, security, comfort, and convenience is central and dominant; the mix of recreation activities may be diverse, ranging from relaxation and contemplation (e.g., sunbathing, reading, and nature walking) to physical exertion, thrills, excitement, and challenge (e.g., para-sailing, jet boating, and water skiing); learning about natural or cultural history, ecology, and reservoir and river operations are important to some; area is popular with local suburban residents.

Rural Developed Recreation Experience: Area provides occasional or periodic opportunities to see, hear, or smell the natural resources (e.g., forests, wildlife, aesthetics) because development, human activity, and natural resource modification are common and frequently encountered; area is less developed and more tranquil than a suburban setting; opportunity to experience brief periods of solitude and change from everyday sights and sounds is important; socialization within and outside one's group is typical, and the presence of other visitors is expected; opportunity to relieve stress and to alter everyday routines is important; a moderate level of comfort and convenience is important; a sense of safety and security is important; the array of recreation activities may be diverse, ranging from relaxation and contemplation (e.g., sunbathing, sailboating, shoreline fishing) to physical exertion and challenge (e.g., competing in shoreline and water sports, tournament fishing, ice fishing, water skiing, and kayaking); area is typically attractive for day-use and weekend visitors from local metropolitan areas or nearby communities, short-term campers, recreation vehicle users, large groups, and adventure tourists within a day's drive.

Rural Natural Recreation Experience: Area provides frequent opportunities to see, hear, or smell the natural resources (e.g., forests, wildlife, and aesthetics) because development, human activity, and natural resource modifications may be occasional and infrequent; noticeably more natural, less developed, and more tranquil than an urban setting; socialization with others outside one's group is not very important, although the presence of others is expected and tolerated; opportunity to relieve stress and to get away from built environment is important; a high sense of safety, security, comfort, and convenience is not important or expected; a sense of independence and freedom with a moderate level of management presence is important; moments of solitude, tranquility, and

Figure 7 Continued. A Generalized Description of the Recreation Experiences by WROS Class

nature appreciation are important; experiences tend to be more resource dependent, although they may be diverse, including relaxation and contemplation (e.g., camping, sunbathing, canoeing, sailing, and boat fishing), socialization, physical exertion, and challenge (e.g., competitive tournament fishing, kayaking, waterskiing, hunting, and belly boat fishing); area is typically attractive to extended weekend and longer-term visitors desiring to experience the outdoors and to be away from large numbers of other people; popular with overnight visitors using recreation vehicles, tents, and rustic cabins.

Semi Primitive Recreation Experience: Area provides widespread and very prevalent opportunities to see, hear, or smell the natural resources (e.g., forests, wildlife, and aesthetics) because development, human activity, and natural resource modifications are seldom encountered; opportunity to experience a natural ecosystem with little human imprint is important; a sense of challenge, adventure, risk, and self-reliance is important; solitude and lack of contact with other visitors, managers, and management is important on the water and at destination sites; the recreation experiences tend to be more resource-based; a sense of independence, freedom, tranquility, relaxation, nature appreciation and wonderment, testing skills, and stewardship is typical; opportunity often requires more trip planning and preparation, travel distance of one or more days, physical effort, and duration; area provides opportunities for the more adventure-based enthusiasts (e.g., fly and float fishing, hunting, backcountry camping, canoeing, rafting, and nature viewing). Overnight visits are typically with tents in settings with few conveniences and facilities. Extended stays may be accommodated. Adventure recreationists and ecotourists are attracted to this setting. Inexperienced recreationists or visitors new to the area may be uncomfortable with the remoteness and the need to be self-reliant.

Primitive Recreation Experience: Area provides a great deal of opportunities to see, hear, or smell the natural resources (e.g., forests, wildlife, and aesthetics) because development, human activity, and natural resource modifications are rare; opportunity to experience natural ecosystems with very little and no apparent human imprint is paramount; natural views, sounds, and smells dominate; a sense of solitude, peacefulness, tranquility, challenge, adventure, risk, and self-reliance is important; solitude and the lack of the sight, sound, and smells of others is very important; a sense of freedom, tranquility, humility, relaxation, nature appreciation and wonderment, and stewardship is central and dominant; area provides opportunities for human powered activities such as canoeing, kayaking, fly fishing, hunting, floating, and backpacking; the high speed and noise of motorized conveyances is typically inappropriate for this area; visitation often requires considerable trip planning and preparation, travel distance, physical exertion, and duration; overnight visitors use tents in settings with no conveniences and facilities; adventure travelers and ecotourists from distant locations are often attracted to the undisturbed wildland setting.

Recreation benefits are improvements resulting from participating in quality outdoor recreation and tourism. These improvements or benefits may accrue to the individual recreationist and family or to the workplace, community, economy, or environment. WRCS does not explicitly include a step to measure or inventory recreation benefits, but does encourage managers to (1) engage local communities in identifying important recreation benefits in the planning process, (2) include a description of the important benefits in the management plan, and (3) reference benefits in various public education and community communications. It is expected that the recreation benefits section will be strengthened in the future as WRCS is used, field tested, and further refined. Figure 8 lists some of the benefits that accrue from recreation and tourism.

Recreation benefits are improvements resulting from participating in quality outdoor recreation and tourism. These improvements or benefits may accrue to the individual recreationist and family or to the workplace, community, economy, or environment.

Figure 8. Examples of Recreation Benefits

Individual or Personal Benefits

physical exercise
family togetherness
self confidence
skill development
reflection/contemplation
increased wellness/happiness
increased quality of life

Community Benefits

sense of place
improved work performance
community pride and spirit
community attraction/appeal
youth development
increased quality of life

Economic Benefits

support of local merchants
economic stimulation
more money from outside the area
increased property values
increased tax revenue
increased investor appeal

Environmental Benefits

increased knowledge of resources
increased respect for environment
increased stewardship/involvement
increased collaboration
increased political/social support
increased conservation of nature

To further envision the six WRCS classes, the following photo collages provide examples of recreation activities and setting attributes by WRCS class

Urban WROS Class

Photo Examples

Activity



Physical



Social






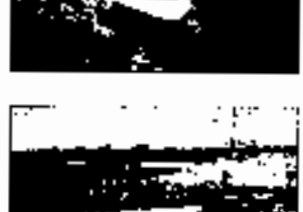



Managerial



Suburban WROS Class

Photo Examples

Activity	Physical	Social	Managerial
			
			
			
			
			
			
			

Rural Developed WROS Class

Photo Examples

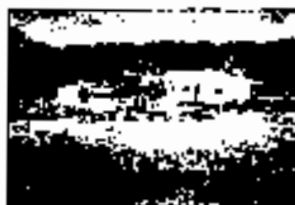
Activity



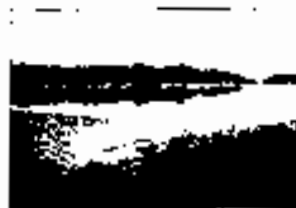
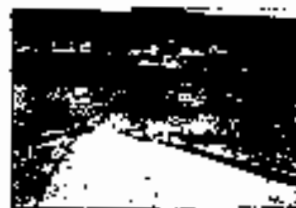
Physical



Social

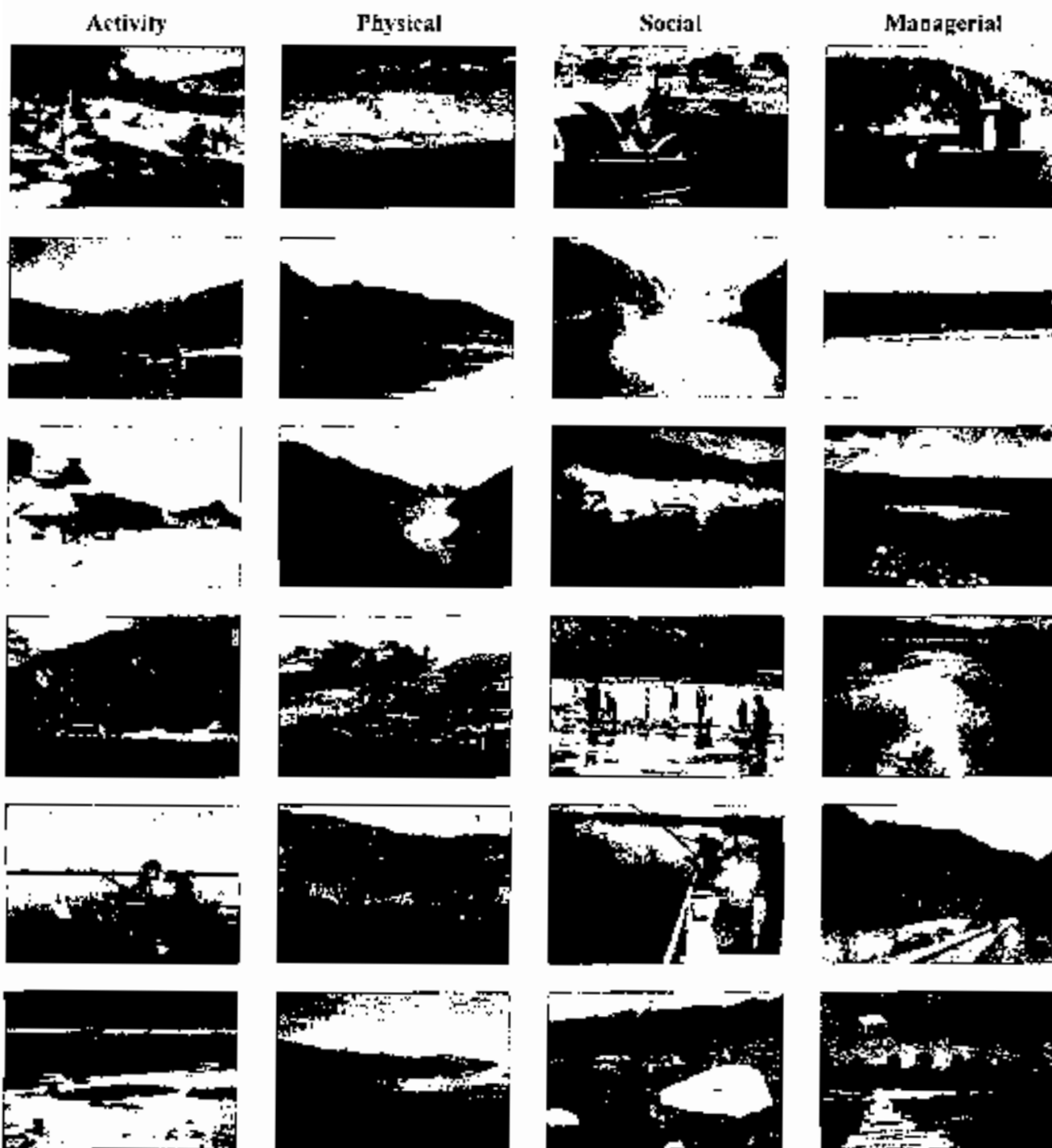


Managerial



Rural Natural WROS Class

Photo Examples



Semi Primitive WROS Class

Photo Examples

Activity



Physical



Social



Managerial



Primitive WROS Class

Photo Examples



*WROS is an inventory,
planning, and
management tool.*

The planning and management value of WROS. WROS is an inventory, planning, and management tool. As such, it is valuable to the managing agencies, local communities, recreationists, and the private sector (e.g., tourism industry) for those tasks listed below.

- Inventory and map water recreation opportunities
- Integrate recreation into the agency planning process.
- Compare recreation demand to the recreation supply of available opportunities.
- Provide a visual map (GIS compatible) of proposed planning alternatives.
- Evaluate the benefits and costs of proposed alternatives.
- Identify and manage a tourism niche for communities and the private sector.
- Plan and manage a regional system of water recreation opportunities
- Identify and protect important natural and cultural resources.
- Increase public awareness of recreation choices and available opportunities.
- Decide type and location of visitor management activities.
- Prioritize, design, and locate facilities.
- Develop visitor capacities.
- Justify budget and personnel needs.
- Legally justify planning and management decisions
- Provide interagency communication, consistency, collaboration, and coordination
- Conserve a diversity of water recreation opportunities.
- Ensure high quality recreation experiences and benefits for current and future visitors and the local community.

Design Criteria Used in Developing WROS

A variety of important considerations were identified early in the development of WROS. Design criteria were developed to help ensure that WROS would be efficient, effective, and of value to water resource planners and managers.

The design criteria included:

- Interface with Reclamation's Resource Management Planning process and other NEPA-compliant planning processes used by other agencies.
- Interface with the ROS system used by the USES and BLM.
- Be consistent with the prevailing expert opinion in the recreation profession.
- Be relatively easy and inexpensive to use.
- Be able to integrate with other planning tools, data bases, and processes.
- Be appealing and understandable to recreating publics, communities, stakeholders, and private sector businesses.
- Provide objective criteria for reasoned and deliberate decision making.
- Accommodate flexibility and adaptation to special field situations.
- Use best available social and biophysical science.
- Accommodate change and adaptation through monitoring, research, and experience.
- Be reasonably applicable to a variety of water resource settings.
- Help ensure a high quality, safe, and enjoyable recreation experience.



Parks and beaches provide for multiple recreation uses.

The Standard for WROS Decision Making

WROS is a framework that is flexible and adaptable to specific field situations. WROS does not replace management discretion and decision making, but rather, is a tool to help make decisions that are principled, reasoned, systematic, logical, tractable, and defensible.

While local planners and managers are empowered to adapt WROS to the local situation, it is important that these decisions be carefully considered so as to maintain the integrity of WROS. This section provides guidance on

Sound professional judgment is defined as a reasonable decision that has given full and fair consideration to the appropriate information, is based on principled and reasoned analysis and the best available science and expertise, and complies with applicable laws.

decision making based on several fundamental principles found in decision science and State and Federal law (e.g., Administrative Procedure Act and the National Environmental Policy Act) and applied by the judicial system in the United States. The standard for WROS decision making incorporates (1) sound professional judgment, (2) preponderance of the evidence, (3) a rule of reasonableness, (4) a sliding scale rule of analysis, and (5) a scale of degree.

Sound professional judgment. Sound professional judgment is defined as a reasonable decision that has given full and fair consideration to the appropriate information, is based on principled and reasoned analysis and the best available science and expertise, and complies with applicable laws.

The terms in the definition take advantage of judicial doctrine and legal terminology. *A reasonable decision* is one that is fit and appropriate under the circumstances. It is a decision that natural resource decision makers of ordinary prudence and competence would not view as excessive or immoderate under similar circumstances. It is important to remember that the judiciary does not compare a manager's decision against some single absolute right decision conceived by the court; that is, the court's function is not to make administrative decisions but rather to judge the reasonableness of an agency decision using such judicial doctrine as reasonable care, due diligence, and sufficient evidence. *Full and fair consideration of the appropriate information* is the condition of considering the whole situation and making a sound decision. *Principled and reasoned analysis* is the condition of not being arbitrary and capricious. Being arbitrary and capricious is one of the most frequent allegations in natural resource-related litigation. *Best available science and expertise* is the condition of using the best information and experience that is reasonably available to improve certainty. *Complies with applicable laws* is the expectation that a decision maker duly considers and is in conformance with relevant laws and regulations (e.g., NEPA).

Preponderance of the evidence. Preponderance of the evidence is defined as a condition whereby most of the information, data, trends, professional opinion, and other facts and circumstances of a situation support the reasonableness of a particular decision or course of action more than another decision or course of action. It is a situation where the weight of evidence of one course of action is greater than the weight of evidence of another course of action.

Rule of reasonableness. The rule of reasonableness is defined as a decision that professional recreation managers of ordinary prudence and competence would not view as excessive or immoderate under similar circumstances.

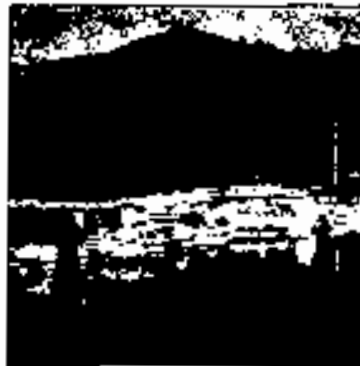
Sliding scale rule of analysis. This sliding scale rule states that the level of analysis used to implement WROS should be commensurate with the potential consequences of the decision; that is, managers need flexibility to make decisions based on a level of analysis that is commensurate with the purpose and potential consequences of the decision. For example, the greater the possibility that a decision may significantly alter natural or heritage resource conditions, local economies, water operations, or the type or quality of the water recreation opportunity; the greater the level of analysis and deliberation. A sliding scale rule of analysis (see figure 9) can range from slight to ordinary to extraordinary and can vary by the (1) level and type of information necessary, (2) tools and techniques used, (3) time and effort required, (4) level of certainty and risk, and (5) level of scientific input.

WROS uses a three-level sliding scale of analysis (see figure 9) that parallels the judiciary's interpretation of due diligence by a responsible official: slight, ordinary, and extraordinary levels of analysis. The sliding scale should serve as a guide for managers.

Managers need flexibility to make decisions based on a level of analysis that is commensurate with the purpose and potential consequences of the decision.



No wake, 5 mph, or slow zones can contribute to a quality experience



Moornings can provide an important service to the public



Sound professional judgment is used to make decisions

Figure 9. Three Levels of WROS Analysis

Sliding scale of WROS analysis	Type of use for the WROS analysis	Level of detail and precision	Description of the WROS inventory
<p>Level 1</p> <p><i>Course Filter</i></p>	<p>General administrative inventory: visitor brochures; routine visitor, resource, and maintenance decisions, etc.</p>	<p>Slight or low level of detail, intensity, effort, data, time, and precision.</p>	<p>Level 1 can be done by a knowledgeable recreation staff person with available information, no original data collection or field inventory, and in a relatively short period of time (e.g., 1-2 days of effort).</p>
<p>Level 2</p> <p><i>Moderate Filter</i></p>	<p>Regional inventories and plans; environmental assessments; assessments of impacts from proposed small to moderate scale changes in facilities, land and water uses, visitor regulations, etc.</p>	<p>Ordinary or moderate level of detail, intensity, effort, data, time, and precision.</p>	<p>Level 2 should involve a small interdisciplinary team of recreation experts, a field inventory using the WROS inventory protocol, development of a current and comprehensive water resource base map, and possibly some original data collection. Level 2 can be completed with a modest effort (e.g., 2-4 days of effort after selecting and training the team).</p>
<p>Level 3</p> <p><i>Fine Filter</i></p>	<p>NEPA-compliant planning, resource management plans, general management plans, assessments of impacts from proposed moderate to large scale changes in facilities, resource use, visitor management, etc.</p>	<p>Extraordinary or high level of detail, intensity, effort, data, time, and precision.</p>	<p>Level 3 should involve a larger interdisciplinary team of recreation experts and several long-time visitors to the area, an intensive field inventory using the WROS inventory protocol, a detailed and current base map, visitor survey information, and possibly some resource data collection. Level 3 requires substantial effort (e.g., 10-20 days of effort after selecting and training the team and excluding the visitor survey task).</p>

Scale of degree. The scale of degree in WROS is analogous to a yardstick used to measure inches and feet. For the yardstick to be effective, society needed to agree on, or standardize, the measurement of an inch and foot. In much the same way, the scale of degree in WROS is intended to help standardize the measurement of attributes for each WROS class. The scale of degree contains several qualitative terms and a quantitative expression. The terms listed under the six WROS classes in figure 10 are synonyms and are used interchangeably in the WROS inventory protocol (chapter 2) and in the management guidelines (chapter 4).

In the WROS inventory stage, a series of inventory sites on the water body are selected and inventoried by a team of experts. At each inventory site, the expert team is asked to *circle the degree, extent, or magnitude that the following attributes are present at this site*. In response, each team member circles the set of terms along the scale of degree in figure 8 that best represents his or her view. For example, structures and human activity in an urban setting are characterized as *dominant, extensive, a great deal, extreme, or apparent in 80 percent or more* of the setting. Conversely, evidence of other recreation use in a primitive setting is characterized as *very minor, rare, very little, or apparent on 3 percent or less* of the area. Use of the scale of degree in the WROS Inventory Protocol is described in *Chapter 2: WROS Inventory*.

Figure 10. The Scale of Degree Used in WROS

Urban	Suburban	Rural Developed	Rural Natural	Semi Primitive	Primitive
80-100%	50-80%	20-50%	10-20%	3-10%	0-3%
Dominant	Very prevalent	Prevalent	Occasional	Minor	Very minor
Extensive	Widespread	Common	Infrequent	Little	Very little
A great deal	Very obvious	Apparent	Periodic	Seldom	Rare
Extremely	Very	Moderately	Somewhat	Slightly	Not at all

In *Chapter 4: WROS Management*, the scale of degree is used in the guidelines to indicate the degree, extent, or magnitude that an attribute is *appropriate* in each WROS class. For example, the presence of full service bath facilities in an urban setting is characterized as being *extensive*, and conversely, *not at all appropriate* in a primitive setting. Note that there are a few attributes in chapter 4 and in the WROS Inventory Protocol (e.g., degree of solitude, degree of natural ambience) where the scale has been reversed to ensure logic and integrity of the recreation opportunity



Accessible facilities are important



Different types of fishing activities require different site attributes



Popular recreation sites often require intensive management