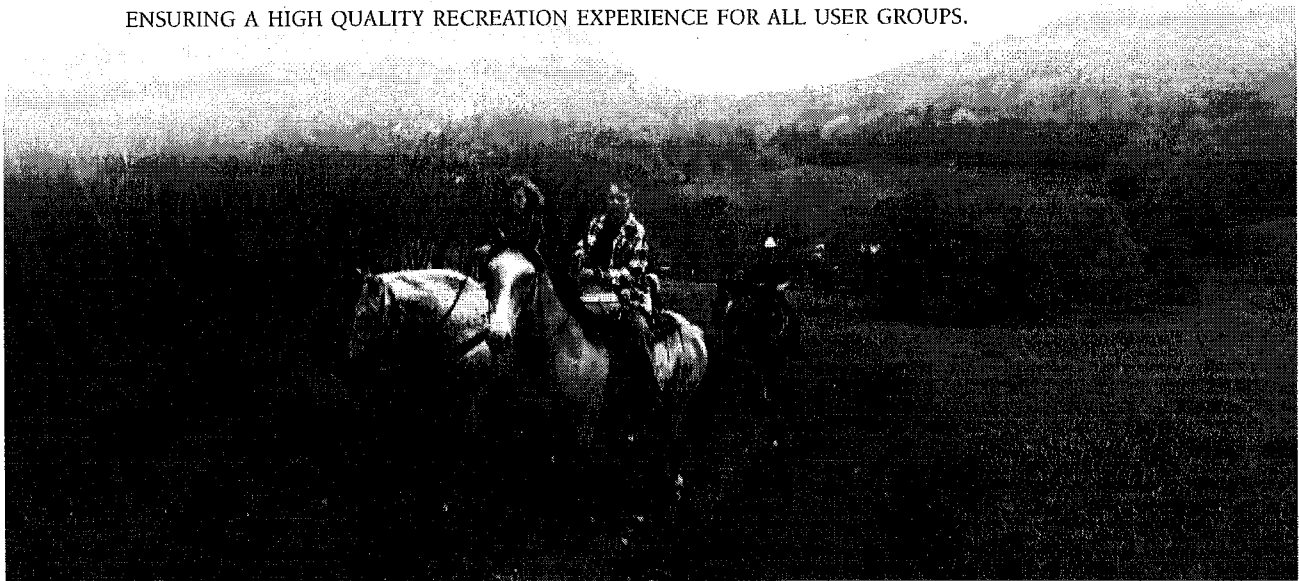




Compatibility and Conflict in Wisconsin Outdoor Recreation

FOR STATE GOVERNMENT AND OTHER RECREATION PROVIDERS, PROVIDING SUFFICIENT OUTDOOR RECREATION OPPORTUNITIES FOR BOTH WISCONSIN RESIDENTS AND VISITORS IS BECOMING A GROWING CHALLENGE. THESE DIFFICULTIES MAY BE ATTRIBUTED TO A VARIETY OF RESTRICTING FACTORS: AS THE NUMBER OF DIFFERENT RECREATIONAL ACTIVITIES INCREASES AND NEW RECREATIONAL TECHNOLOGIES (I.E. GEOCACHING, ETC.) ARE DEVELOPED, PUBLIC LANDS ARE FACING PRESSURE FROM AN INCREASING NUMBER OF DIFFERENT USER GROUPS. INTERACTIONS BETWEEN THESE GROUPS ARE FREQUENTLY MARKED BY COMPETITION OVER LAND USE AND ACCESS. THIS SITUATION HAS BEEN AMPLIFIED BY THE FRAGMENTATION OF LAND IN RURAL AREAS, THE RESULT OF PRIVATE LANDOWNERS PURCHASING LAND WHICH THEN BECOMES UNAVAILABLE FOR PUBLIC RECREATION. AS THESE ISSUES CONTINUE TO AFFECT THE QUALITY AND SUPPLY OF RECREATION WITHIN WISCONSIN, MANAGEMENT WILL BECOME INCREASINGLY IMPORTANT IN ENSURING A HIGH QUALITY RECREATION EXPERIENCE FOR ALL USER GROUPS.



This chapter examines the extent of outdoor recreation conflict in Wisconsin and categorizes the relative compatibility of different recreation uses in a common landscape. It is important to remember that certain activities interact better than others. A hiker, for example, is not likely to be bothered by campers in an adjacent campground. Someone birdwatching from their canoe, however, is likely to be bothered by the presence of a noisy personal water craft. Because Wisconsinites pursue many different types of recreation activities, all with various levels of compatibility, it is important to understand how these activities interact. While many innovative strategies have been used to mitigate recreation conflict in Wisconsin, the study presented in this chapter represents the first attempt at developing a more systematic understanding of recreation conflicts, an understanding which will aid recreation providers in developing effective management solutions.

The impetus for this work first emerged at the 2005 Governor's Conference on Forestry, the kickoff event for the Wisconsin Statewide Forest Plan. During this conference, a diverse group of participants came together to strategize and set priorities in a session entitled "Minimizing Recreational Use Conflicts in Wisconsin's Forests." From this working session, several key goals emerged. These included the needs to (1) revitalize and reconfigure the Wisconsin State Trails Council, (2) support and promote research in recreation compatibility and conflict, (3) support and promote education and interpretation services with respect to recreation compatibility, and (4) increase funding for recreation management. The second of these goals—researching recreation conflict dynamics—is also one of the primary goals of this SCORP and was adopted as the inspiration and guiding focus for the work presented in this chapter.

Outdoor Recreation Conflict Reporting in Wisconsin and Surrounding States

In order to establish a general understanding of which Wisconsin recreational activities experience conflict, researchers performed a LexisNexis¹ search for Wisconsin popular press² articles from the past two years (December 2003 – December 2005) that discussed issues of recreation conflict. A total of 75 different news stories were found, a summary of which is contained in Figure 4-1. The most frequently cited conflicts included concerns over environmental damage (19 citations), trails (18 citations), conflict with landowners (15 citations), the implementation of activity bans (14 citations), management actions by state or local agencies (12 citations), and disputes over the use of local parks (11 citations). Other issues included, in order of frequency: safety, conflict with wildlife, noise, budget allocation or fee disputes, local ordinances, access to recreational lands and facilities, loss of viewscapes, park creation, water levels, and passage of state bills.

The activities most frequently cited as involved in some form of conflict were hunting (31 citations), ATVs (14 citations), and recreational fishing (8 citations). Other activities found to be associated with some form of conflict included, in order of frequency: bicycling, snowmobiling, hiking, boating, cross-country skiing, camping, swimming, boating, kayaking, wildlife watching, water skiing, and horseback riding.

Articles gathered through this search revealed that conflict associated with non-motorized activities is generally associated with trail use. Articles also indicated that conflicts involving hunting are unique in that they rarely involve conflicts with other outdoor recreation activities. Rather, conflicts related to hunting are most often due to conflicts with private landowners over issues of access or trespassing, or conflicts with the state or recreation area over state management actions or use of parks by hunters.

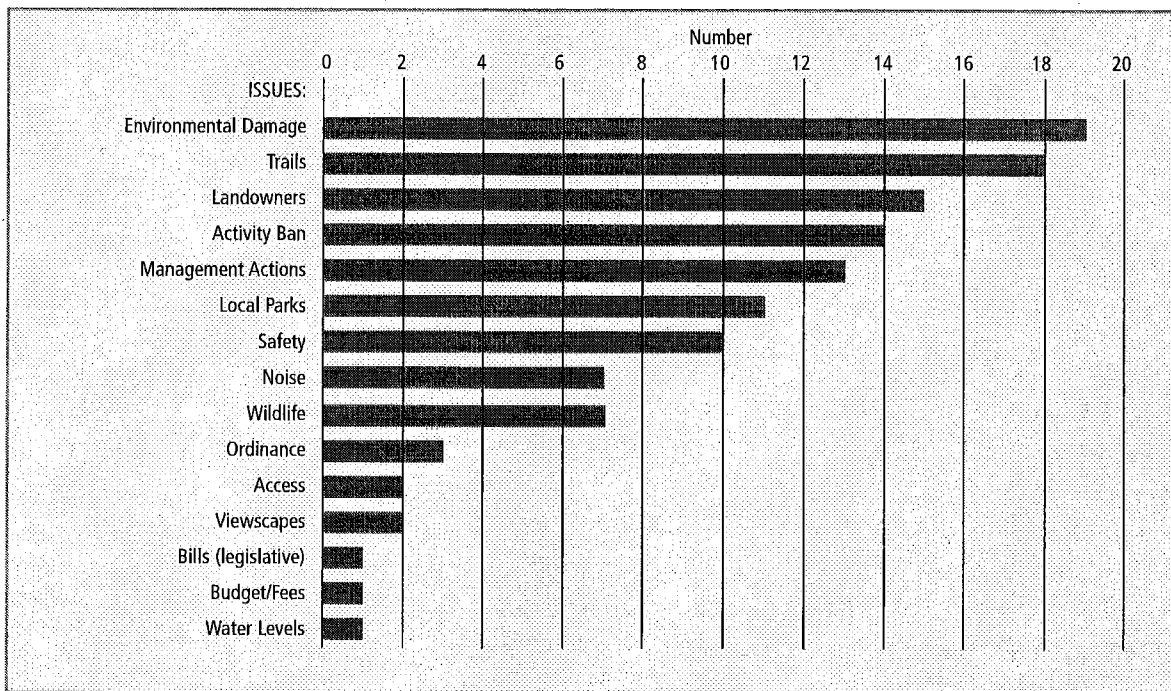
An additional LexisNexis search was completed for articles from the surrounding states of Illinois, Michigan, and Minnesota. Results of this search revealed far fewer articles relating to recreation conflict than the search performed in Wisconsin. For the activities of ATV riding, hunting, and fishing, there were 50 articles found in Wisconsin alone and only 38 articles in all other three states combined. These findings beg the question: What causal effects are contributing to more recreation conflicts in Wisconsin than elsewhere in the upper Midwest?

¹ The LexisNexis database is divided into two components: Lexis publishing is for the legal profession and the NEXIS unit serves the business, government and academic markets. The system is divided into libraries, which contain related documents and files within the libraries. LexisNexis is heavily used by researchers who often use its database of American case reports, legislation, International law, Law Journals, and newspapers.

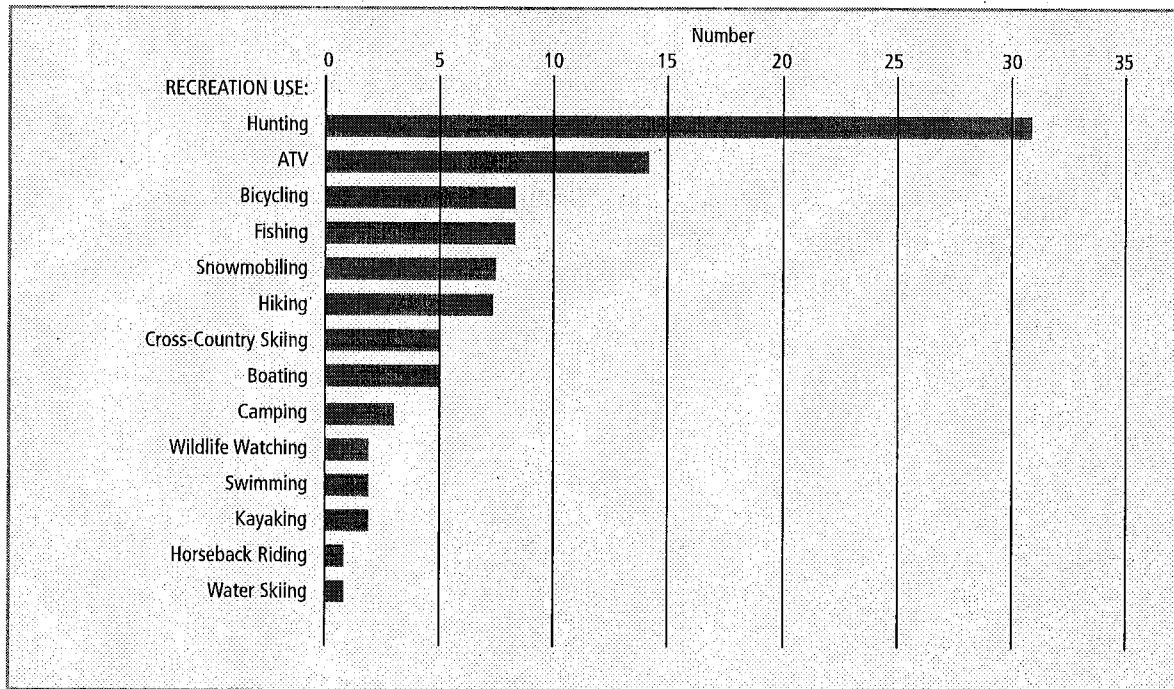
² Sources included in LexisNexis are The Associated Press State & Local Wire, The Capital Times, The Daily Reporter, The Milwaukee Journal Sentinel, The Wisconsin Law Journal, and The Wisconsin State Journal. Sources from surrounding states are also included.

Figure 4-1: Results of LexisNexis Popular Press Search on Recreation Conflict in Wisconsin

CONFLICT TYPE



ACTIVITY



Results from Wisconsin news sources dated December 2003 – December 2005. Keyword searches included "conflict", "protest", and "dispute" with "ATV", "bicycling", "biker", "boating", "boater", etc.

An Approach to Understanding Recreational Compatibility

Past research in the field of recreational compatibility has focused on two principle explanations for why recreation conflict occurs.³ The first of these explanations suggests that conflict occurs when the goals of one recreation participant interfere with the goals of another recreation participant in the same location. For example, the goal of a mountain biker to ride fast through a forest may conflict with a horseback rider's goal of a tranquil ride through the same forest. The actual amount of conflict that occurs when the horseback rider and mountain biker actually encounter one another is dependent on a host of factors including each user's experience level, previous experience with similar situations, feeling of attachment to the trail they are riding, design of the trail, proximity to one another, duration of their meeting, and tolerance of the other person's behavior. The second explanation for recreation conflict suggests that conflict may occur simply because of differences in social values. A classic example of this type of clash is the conflict that may occur between hunters and other recreation participants when there are differences in opinion about when and where hunting should occur, or differences in the values held towards live animals. This type of value-based conflict is more likely to be an issue during planning processes and public meetings than in recreation settings themselves.

Previous research has also documented a number of important generalizations about recreation conflict. First, recreation conflict is often asymmetrical, meaning that one user group is generally more impacted by the conflict than another. For example, cross-country skiers may be very bothered by snowmobile users, but snowmobile users are not generally bothered by the presence of cross-country skiers. Second, asymmetrical conflict is most likely to occur between motorized and non-motor-

ized recreation activities than between either two motorized or two non-motorized activities. Third, because recreation users employ a variety of coping methods when encountering recreation conflict, increased levels of conflict may not necessarily reduce a person's satisfaction with their experience. An angler encountering more boaters on a lake than he had expected may, for example, move to another lake or revise his expectations for the trip. In this way, the angler still enjoys his fishing expedition regardless of the fact that it did not meet his initial expectations.

Despite these observations, there has, until this point, been no unified theory of recreation conflict. This is due, partially, to the way conflict has been analyzed. Most research in the field of recreation conflict has focused on the interaction of recreation participants at individual sites, a method that does not lend itself to theorizing across the wide range of sites where conflict occurs. Research presented in this SCORP represents one of the few attempts to categorize recreation conflict as it occurs across Wisconsin recreation settings and activities as a whole. In order to understand recreation conflict on a broader scale, this study utilized a conceptual approach; rather than documenting where conflict occurs between recreation activities, this report relied on a panel of recreation experts to describe how compatible various recreation activities are. This approach is based on theory from land and environmental economics literature, which suggests a range of compatibility for different uses of a land resource. Responses from this panel represent a comprehensive view of recreation conflict within the state and account for the range of compatibility between different recreation activities.

³ The interested reader is referred to a companion literature review and annotated bibliography entitled *Compatibility and Conflict as a Conceptual Basis for Outdoor Recreation Planning* available from the authors.



Value-based conflict is more likely to be an issue during planning processes and public meetings than in recreation settings themselves.

Table 4-1: Spectrum of Interaction Types and Their Recreational Outcomes

Interaction Type	Key Characteristic	Outcome	Example
Complementary	Increasing compatibility with increased use	No conflict	Canoeing and fishing
Supplementary	Neutral interaction – no impact on compatibility	Minor conflict	Snowmobile and ATV riding
Competitive	Decreasing compatibility with increased use	Conflict	Fishing and personal water craft use
Antagonistic	Activities completely incompatible	Strong conflict	Wilderness camping and ATV riding

Spectrum of Interaction Types

Recreation activities interact in a variety of ways. Some activities positively impact one another and are called complementary. Camping facilities, for example, often attract many visitors, thereby increasing the number of people who hike on an adjacent trail network. Other recreation activities are merely compatible, having a neutral impact on the pursuit of another recreation activity. These activities are called supplementary. Most activities, however, experience some form of conflict when encountering other activities. Users from these different groups may experience conflicts over competition for space, trail infrastructure, viewsapes, and soundscapes. In minor cases, these conflicts are called competitive interactions. In more extreme cases, two activities may be completely incompatible and interactions between them are described as antagonistic. Table 4-1 outlines the spectrum of recreation interactions.

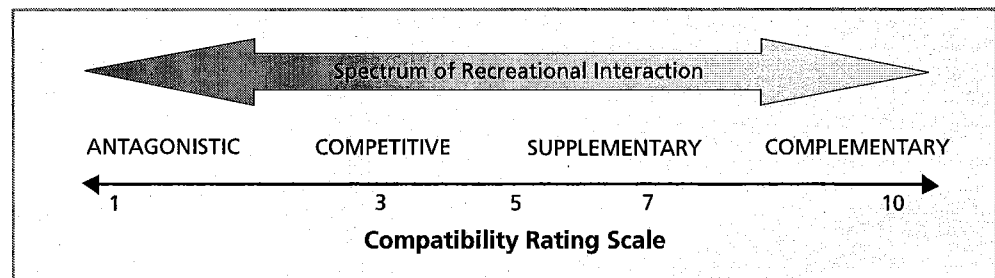
Expert-Based Focus Groups

To investigate the compatibility of recreation activities in Wisconsin, a series of expert-based focus groups were held with recreation managers, members of the Wisconsin SCORP External Review Panel, and the leadership team from the “Minimizing Recreational Use Conflicts in Wisconsin’s Forests” session of the Governor’s Conference on Forestry.⁴ Approximately 30

people participated in these group sessions, with discussion centering on the validity of recreation compatibility and the strategies currently used to minimize recreation use conflicts in Wisconsin.

Participants in these sessions discussed a series of issues related to the compatibility of different recreation activities in the state. Using a ten-point scale developed specifically for this study (as shown in Figure 4-2), participants were asked to complete a matrix comparing recreation activities to other recreation activities. Given an interaction between two activities, participants were asked to assess their relative level of compatibility. Ten different land-based activities were included for consideration in this matrix, these activities representing the primary recreation groupings relevant to outdoor recreation in Wisconsin. Activities included were ATV riding, camping, cross-country skiing, hiking, horseback riding, hunting, linear trail biking, mountain biking, snowmobiling, and wildlife watching. A separate matrix compared six water-based activities. These activities included canoeing/kayaking, fishing, personal water craft use, motorboating/water skiing, sailing, and swimming. Recognizing the asymmetrical nature of outdoor recreation conflict, respondents were asked to rate the degree of compatibility in both directions of recreational interactions. In this way, conflict was rated for users of the first activity interacting with users of the second activity, and users of the second activity interacting with users of the first activity.

Figure 4-2: Spectrum of Recreational Interaction and Compatibility Rating Scale



⁴ For the purposes of this study we used a modified Delphi process eliciting expert input from Wisconsin-based recreation professionals. These experts were used to assess recreational compatibility while minimizing the obvious bias of individual recreationists and/or special interest representatives of user groups. It is our belief that recreation professionals charged with managing recreational resources are knowledgeable about alternative recreational user needs, desires, and value structures. Further, they must necessarily use some level of professional objectivity in how they assess alternative forms of recreational compatibility. Future research into user perceptions and special interest group input into compatibility would undoubtedly prove interesting and useful, but is beyond the scope of this research effort.

Chapter 4: Compatibility and Conflict in Wisconsin Outdoor Recreation

Findings and their Implications

Results of this survey suggest some interesting patterns in recreation compatibility. While there was some variability in responses gathered, there are clearly some activities that recreation managers feel are complementary or supplementary and others that appear to be much more competitive or antagonistic. The average ratings reported for land-based recreation activity interaction ranged from 9.2, a number representing complementary interactions (recorded for hiking with camping), to 1.8, a number representing antagonistic interactions (recorded for cross-country skiing with ATV riding). For water-based activities, average ratings ranged from 7.9 for canoeing/kayaking with fishing to 2.5 for fishing with personal water craft use. The average compatibility rating for land- and water-based outdoor recreational activities are summarized in Tables 4-2 and 4-3. Ratings reflect the perceived level of conflict from the perspective of users listed in the vertical Y axis (labeled as Primary Use). Ratings indicating a user's level of perceived recreation conflict should therefore be read horizontally across rows. For example, hunting interaction ratings range from a low of 3.3 for interactions with ATV

riding to a high of 6.3 for interactions with camping. Green shading represents generally complementary recreation interactions, yellow shading represents generally compatible interactions, and red shading represents generally antagonistic interactions.

Upon closer examination of these compatibility ratings, two general observations are evident. First, it is fairly apparent that motorized and/or consumptive recreational activities are consistently rated as being less compatible with non-motorized activities than with other motorized activities. For example, when comparing the compatibility of all other land-based activities with hiking and ATV riding (See Table 4-2), it is evident that ATV riding is incompatible with every other land-based activity but snowmobiling. Hiking, on the other hand, is supplementary or complementary with all other activities.

This same pattern of compatibility may also be seen in the graphs of wildlife watching as compared to hunting, personal water craft as compared to canoeing/kayaking, and motorboating/water skiing as compared to sailing. These graphs appear in Figure 4-3, which charts thirteen different recreation activities and their

Table 4-2: Average Land-Based Recreation Activity Compatibility Ratings ^{a b}

PRIMARY USE:	INTERACTS:										Average Compatibility
	ATV Riding	Hunting	Snowmobiling	Horseback Riding	Mountain Biking	Cross-Country Skiing	Linear Trail Biking	Hiking	Wildlife Watching	Camping	
ATV Riding	X	5.3	6.5	5.1	5.5	4.9	5.5	6.1	6.9	7.5	6.0
Hunting	3.3	X	3.7	4.7	4.3	5.3	5.7	5.4	6.0	6.3	5.0
Snowmobiling	4.3	4.0	X	4.0	4.8	4.3	5.8	5.3	6.3	7.2	5.1
Horseback Riding	2.2	3.5	3.0	X	3.8	4.9	4.5	6.3	7.3	7.7	4.8
Mountain Biking	3.1	3.6	4.7	4.8	X	5.7	8.1	6.1	7.4	8.0	5.7
Cross-Country Skiing	1.8	3.6	2.6	3.3	4.2	X	5.6	4.9	8.1	8.5	4.7
Linear Trail Biking	2.6	3.9	5.5	5.3	8.2	7.1	X	7.4	8.0	8.7	6.3
Hiking	2.7	3.5	3.5	5.7	4.7	6.1	6.5	X	8.9	9.2	5.6
Wildlife Watching	2.2	3.2	2.9	6.4	5.2	7.6	6.8	8.6	X	8.3	5.7
Camping	3.9	4.1	5.0	7.5	7.8	8.2	8.2	8.9	8.5	X	6.9
Average Compatibility	2.9	3.9	4.2	5.2	5.4	6	6.3	6.6	7.5	7.9	

a. Compatibility ratings are for how column activity interacts with the row activity. Ratings should therefore be read horizontally across rows.

b. Ratings below 4.0 (highly competitive or antagonistic) are highlighted in red, ratings between 4.0 and below 7.0 are highlighted in yellow (moderately to mildly competitive), and ratings 7.0 (supplementary or complementary) and above are highlighted in green. Results are based on responses from 23 Wisconsin recreation professionals.

Table 4-3: Average Water Based Recreation Activity Compatibility Ratings ^{a b}

PRIMARY USE:	INTERACTS:						Average Compatibility
	Personal Water Craft Use	Motorboating/Water Skiing ^c	Swimming	Fishing	Sailing	Canoeing/Kayaking	
Personal Water Craft Use	X	7.1	5.4	5.9	6.5	6.2	6.2
Motorboating/Water Skiing	6.5	X	4.9	5.6	5.8	5.9	5.7
Swimming	2.9	3.2	X	6.1	6.2	7.4	5.2
Fishing	3.1	3.1	5.4	X	6.5	7.7	5.0
Sailing	3.4	4.3	6.4	7.0	X	7.6	5.7
Canoeing/Kayaking	3.2	3.2	7.6	7.9	7.4	X	5.7
Average Compatibility	3.6	4.2	5.9	6.5	6.5	7.0	

- a. Compatibility ratings are for how column activity interacts with the row activity. Ratings should therefore be read horizontally across rows.
- b. Ratings below 4.0 (highly competitive or antagonistic) are highlighted in red, ratings between 4.0 and below 7.0 are highlighted in yellow (moderately to mildly competitive), and ratings 7.0 (supplementary or complementary) and above are highlighted in green. Results are based on responses from 23 Wisconsin recreation professionals.
- c. Some Delphi participants felt that this activity category combined two activity categories inappropriately. Future work should separate these uses to gauge a more accurate understanding of compatibility.

compatibility ratings with other activities. From this figure it is easy to see that consumptive/motorized activities (represented by pink squares) are far more likely to cause a competitive or antagonistic interaction with other user groups than non-consumptive/non-motorized activities (represented by blue triangles).

A second observation from the expert-based focus groups indicates that differences in compatibility between motorized and non-motorized activities becomes less pronounced when more specialized trail-based activities such as cross-country skiing, horseback riding, mountain biking, and linear trail biking are compared to motorized activities. Because these types of specialized activities need particular kinds of trail infrastructure and have activity styles that are not as compatible with other recreation activities, they are often partially separated from other recreation activities. This may explain the higher levels of compatibility recorded between these activities and motorized uses.

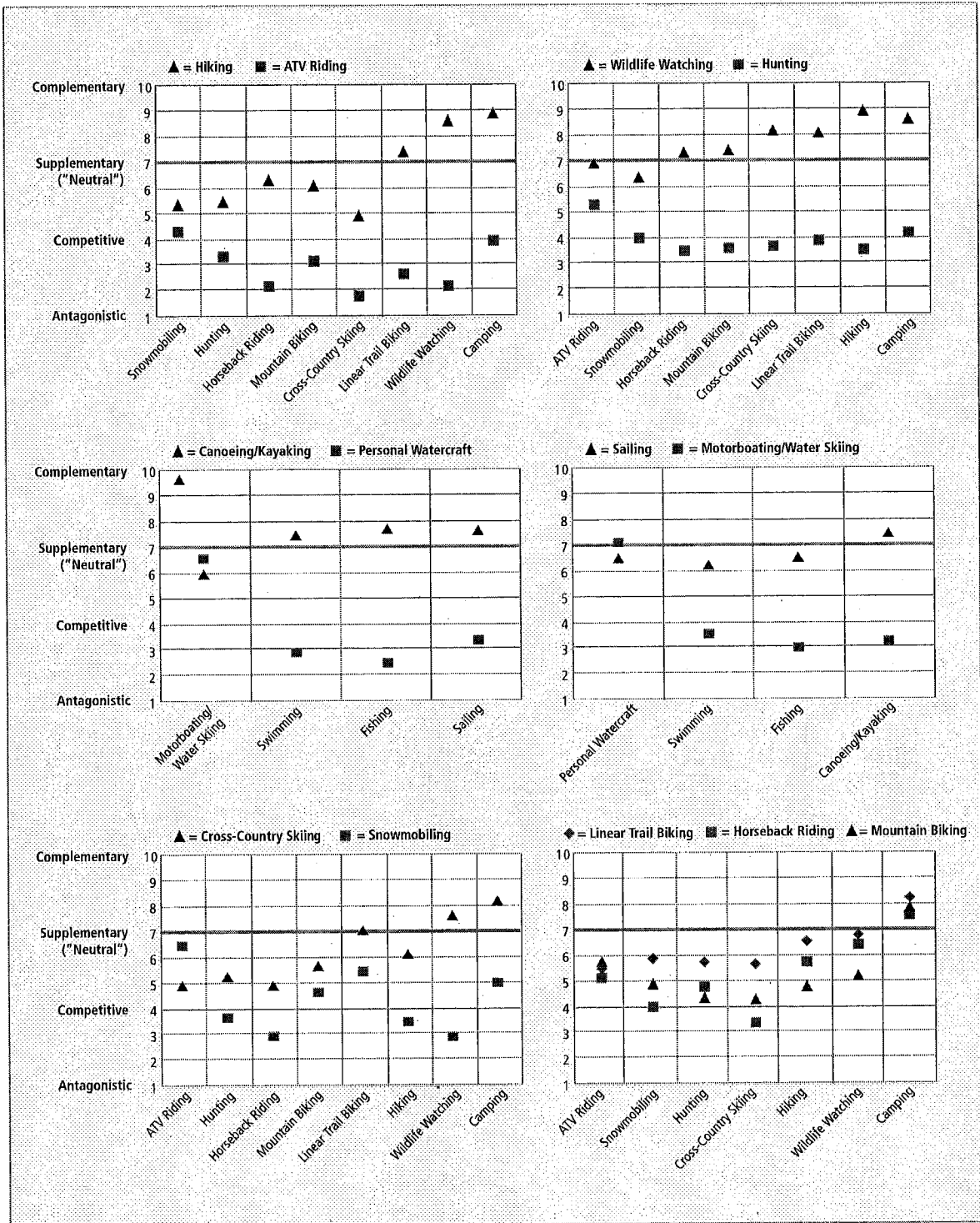
Although this study relies on the expert opinion of recreation management professionals, previous research in the field of recreation conflict has focused on the attitudes of recreation users themselves. One such study focused on forest-based recreation in Wisconsin and

rated the compatibility of different recreation activities by surveying a large sample of outdoor recreation participants. Respondents in this study were asked whether they agreed with the statement that other recreational users were not bothersome. Most respondents had some level of agreement with this statement. Rated on a five-point scale, activity compatibility ranged from about 4.3 for the compatibility of hikers or bikers with primitive camping to about 1.6 for the compatibility of horseback riders with motorized vehicles. In general, compatibility ratings were lowest with motorized vehicle use or hunting and highest with primitive camping or hiking/skiing. These results suggest that recreation participants may hold a more positive view of outdoor recreation compatibility than recreation managers. In order to develop comprehensive management techniques, future research in the field of recreation conflict will need to elicit input from all groups involved in outdoor recreation—managers and participants alike.

⁵ The interested reader is referred to two previously published reports. The first is entitled *Recreational User Groups and their Leisure Characteristics: Analysis for the Statewide Comprehensive Outdoor Recreation Planning (SCORP) Process*. (PR447 - WDNR, Madison, WI and Staff Paper 98.4 - Center for Community Economic Development, University of Wisconsin - Extension, Madison, WI.). The second is entitled *Forests and Regional Development: Economic Impacts of Woodland Use for Recreation and Timber in Wisconsin* (Monograph G3694, Board of Regents of the University of Wisconsin System, Madison, WI.). Both reports are available from the authors.

Chapter 4: Compatibility and Conflict in Wisconsin Outdoor Recreation

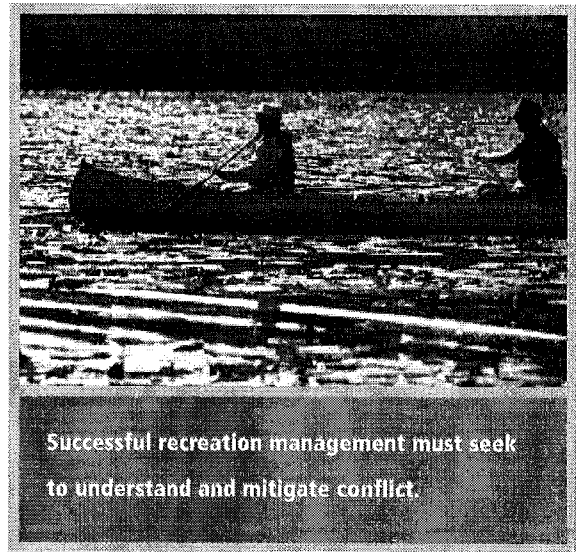
Figure 4-3: Average Outdoor Recreation Compatibility Ratings for Interaction with Highlighted Activities



Current and Potential Management Strategies

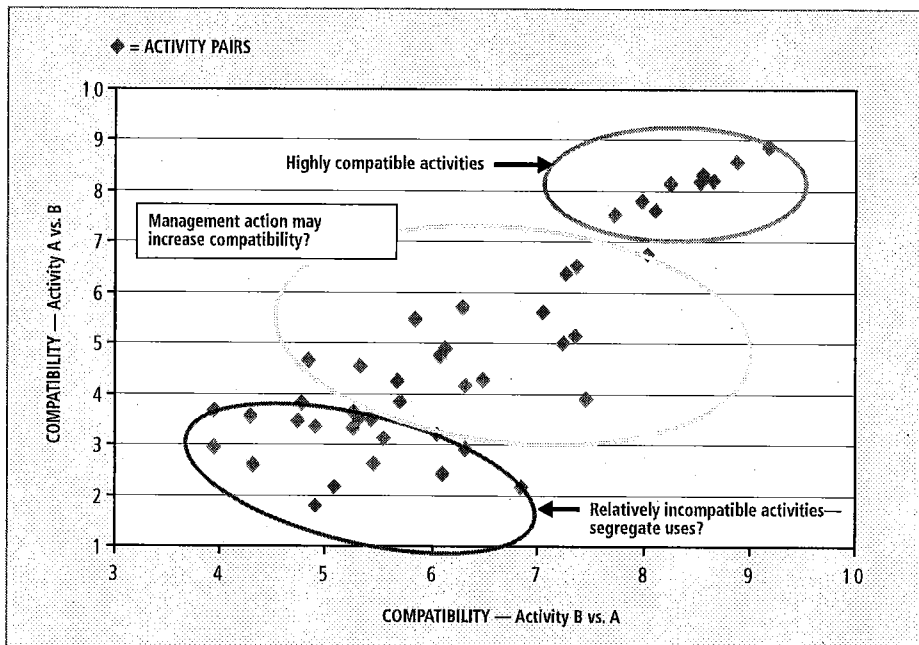
Recent reviews of research in the field of recreation conflict management have revealed that management which aims to avoid recreation conflict is ineffective. Rather, successful management must seek to understand and mitigate conflict. The conceptual model used in this study adopts this perspective by seeking to classify—not avoid—recreation conflict. With a firm understanding of these conflicts in hand, recreation managers may work to mitigate and address them. This study is also careful to highlight the positive aspects of recreation interaction. Rather than evaluating recreation activities according to conflict, it evaluates activities in terms of compatibility. In expert panel sessions with recreation management professionals in Wisconsin, there was a generally favorable reaction to this approach and a number of comments that suggested it could represent a refreshing new perspective in the field of recreation conflict.

Figure 4-4 shows the compatibility ratings of all recreation pairs used in the study. From this figure it is clear that most recreation activities in Wisconsin are highly compatible (circled in green), or somewhat compatible (circled in yellow). It may be that the activity pairs that fall in the middle of graph (with ratings of 4-7 for both uses) have the greatest potential for improved compatibility. With strong, assertive management, these activity pairs may be shifted to a more positive interac-



tion level. Activities that fall towards the top of the graph (with ratings above a seven) already work well together and could therefore occur in the same management unit. Those activity pairs that fall below a specific compatibility rating (a threshold of 4 has been chosen for this figure) are likely incompatible. The most appropriate management action for these activities will generally involve segregating uses and aggressively managing interactions with other activities through regulation, interpretation, and/or voluntary restrictions.

Figure 4-4: Compatibility Ratings for Land-Based Recreation Activities

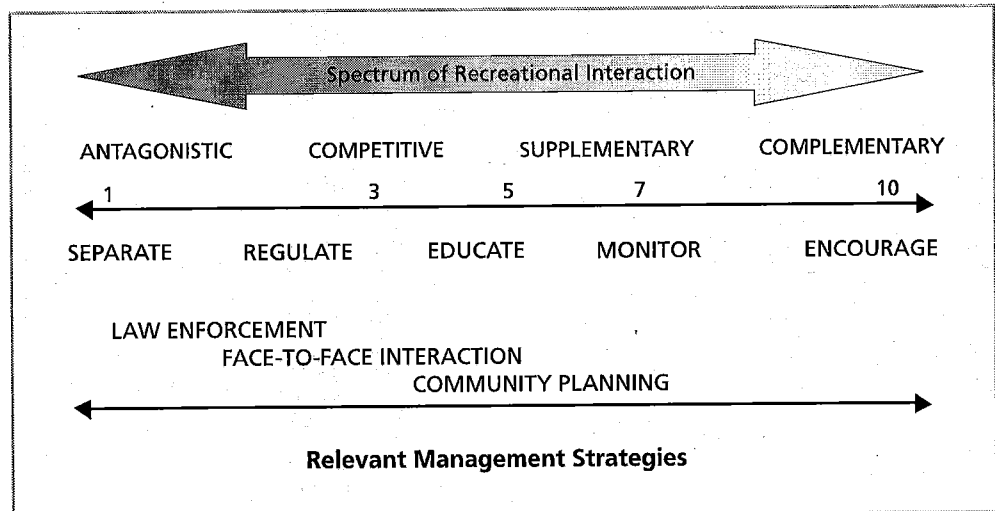




Just as there is a spectrum of possible compatibility interactions between recreation activities, there is an analogous spectrum of possible management interaction. Recreation management professionals used in the focus group described a range of overlapping and complementary management strategies that they use to manage conflict within their jurisdictions. Their speculation on the likely relationship between the compatibility spectrum and types of management strategies are summarized in Figure 4-5. For activities that fall towards the antagonistic end of the compatibility spectrum, management typically involves segregating uses through the development of separate facilities and infrastructure. In these situations, regulation and enforcement are the primary implementation strategies, with wardens and other law enforcement officials taking the lead in enforcement. In the highly competitive range of the compatibility spectrum, regulation, interpretation, and voluntary restriction are the dominant management strategies. Possible actions in this range of the spectrum include limiting different uses to different times of the year or designating authorized equipment for different activities. In the more moderately competitive range of the compatibility spectrum, strategies such as interpretation and discussion may be used to facilitate communication between user groups and promote the development of user-created solutions to recreation conflict.

Focus group participants also discussed the use of programs promoting community involvement in the recreation management process as a way to involve the public in the development of management strategies. A good example of this type of effort is the Community Wardening program, which encourages local field war-

Figure 4-5: Spectrum of Recreation Interaction and Relevant Management Strategies





An important challenge to recreation planning is the fact that much of the conflict in outdoor recreation may be attributed to the actions of a small number of individuals, not the larger group of responsible participants.

dens to establish collaborative relationships between wardens and the communities they serve. In this program, wardens are first trained, and then stationed in key communities around the state with at least one warden in every county. Under this system, more than 90% of the entire law enforcement corps is decentralized to local communities. These joint community/warden efforts help develop relationships between law enforcement and local communities, which in turn aids in the enforcement of state regulations and the protection of natural resources.

Educational efforts, both at a community and personal level, are always the first step in mitigation of recreational conflicts. These educational messages can be delivered in many forms, such as the Wisconsin Trail Ambassador Program, which promotes the safe and responsible public use of ATVs in a way that does not harm the environment or conflict with laws or rules. Another example is Wisconsin wardens who regularly present fishing and wildlife regulations at schools, conservation clubs, civic organizations, and other group meetings. They also work with local radio, TV, and newspapers. Wardens often have regular columns in local newspapers for sharing timely information about current outdoor recreation issues and regulations.

Across the recreation interaction spectrum as a whole, focus group participants emphasized the need for

good integrative recreation planning, an effort that will involve all user groups, park staff, law enforcement, and park and recreation facilities.

Despite these management recommendations, some activities remain difficult to plan for. For some of the activity categories used in this study, there is no unity in activity style or participant perspective. For instance, there are many different types of hunting (e.g., bow-hunting for deer, gun-hunting for deer, turkey hunting, grouse hunting, duck hunting, etc.) and unique factors that relate to the specific forms of hunting (e.g., the season in which it is conducted, whether it is stand-based or trail-based, and whether an ATV or other motorized vehicle is used). This variability can have a significant influence on the degree of conflict that may be generated with other recreation participants as different kinds of hunters interact differently with other user groups.

A second important challenge to recreation planning is the fact that much of the conflict in outdoor recreation may be attributed to the actions of a small number of individuals (the “bad apples”), not the larger group of responsible participants. Panel participants did not agree on what percentage of recreation participants fall into the “bad apple” category or to what degree the management of recreation conflict should be adapted toward this small percentage of users.

Summary

By applying the findings of the recreation expert panel to a goal interference model of recreation conflict, this SCORP process has developed an expanded model of outdoor recreation interaction. This model, shown in Figure 4-6, relies on interpretation and adaptive site planning as key elements in determining recreation interaction outcomes. This model is not limited to interactions classified as competitive or antagonistic. In fact, most recreational interaction can be considered supplementary and/or complementary and should be considered in any effective recreation management plan. Both antagonistic and non-antagonistic recreation interactions will best be addressed through proper recreation planning and management, activities that will maximize positive interactions between non-antagonistic activities and mitigate antagonistic uses.

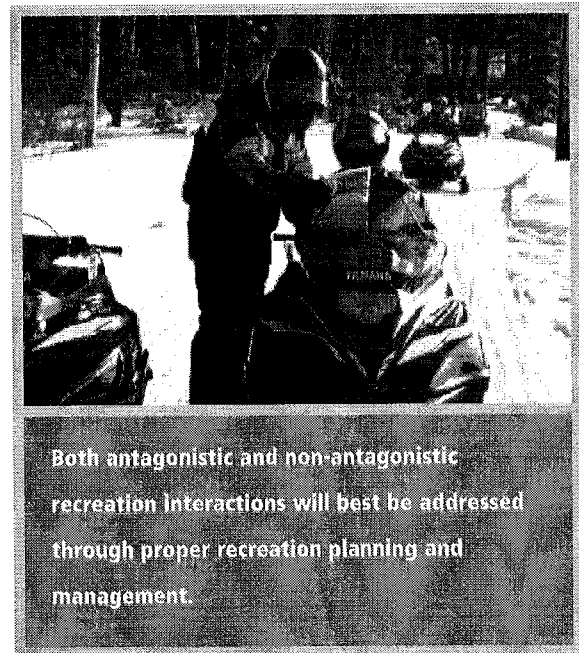


Figure 4-6: Expanded Goal Interference Model of Outdoor Recreation Conflict

