D-6

The Mississippi National River and Recreation Area Study

Report III: Detailed Analyses

Prepared for:

Mississippi National River and Recreation Area
National Park Service

Prepared by:

Cooperative Park Studies Unit
University of Minnesota
College of Natural Resources
1530 North Cleveland Avenue
St. Paul, Minnesota 55108

Christine J. Clements, Research Assistant
Department of Recreation, Park and Leisure Studies
University of Minnesota

David W. Lime, Research Associate and
CPSU Social Science Program Leader
Department of Forest Resources
University of Minnesota

Wayne Freimund, Research Assistant
Department of Forest Resources
University of Minnesota

August, 1992

ON MICROFILM

PLEASE RETURN TO:
TECHNICAL INFORMATION CENTER
DENVER SERVICE CENTER
NATIONAL PARK SERVICE

B&W Scans
4-14-2003

CONTENTS

Page

Acknowledgements 1

Summary 2

Study Background 4

Methodology 5

How are use and length of residence related to familiarity? 9

Is there a relationship between length of residence, gender and use patterns on the Mississippi River? 17

How do different user groups perceive management actions? 21

How are benefits and problems perceived by respondents of different geographical strata? 27

Is there mutual support for environmental and economic related management actions? 37

ACKNOWLEDGEMENTS

This study is part of a larger cooperative research agreement with the Mississippi National River and Recreation Area (MNRRA) to aid the planning of this new unit of the National Park System. David W. Lime and Dorothy H. Anderson are co-principle investigators of this overall effort.

Preparation of this report and the research was funded primarily by the National Park Service. Funding was also received from the University of Minnesota's Agricultural Experiment Station and Division of Recreation, Park, and Leisure Studies.

Technical assistance was received from the Cooperative Park Studies Unit, College of Natural Resources at the University of Minnesota. Particular credit is given to Mike Madell, Acting Superintendent of MNRRA, for his support and input into the development and implementation of the project. Also deserving of special acknowledgement are the Research Assistants who facilitated this study: Christine J. Clements, Jonathan Vlaming, Tim Schleicher, and Wayne Freimund.

SUMMARY

The Mississippi National River and Recreation Area Study was designed to expand the current knowledge base of the Twin City resident's perceptions and uses of the MNRRA resource. This was accomplished through the utilization of a mail survey which was sent to a random sample of 3,000 households located within 15-miles on either side of the Mississippi River in the Twin Cities.

Utilizing response booklets from 1,214 households, Report I documented overall highlights found in the initial analysis of the data. Report II presented the open-ended responses of respondents. This report, Report III, is based on 1,303 responses and focuses on additional analyses that were not completed for the previous reports. The analyses are targeted at specific questions asked by the National Park Service, as well as statistically significant findings that were identified in the second phase of the analysis.

The highlights of these findings were:

1. **There is a relationship between familiarity and use of the Mississippi River in the Twin Cities.**

   - Recreational users of the river were more familiar with the river than nonusers
   - Those who were involved in land and water activities were generally more familiar with the river than those who were involved in water or land activities only or were nonusers
   - Water users were most familiar with the segment of the river within Minneapolis and least familiar with the area within St. Paul
   - The group most familiar with the area within Minneapolis was the land user only group

2. **Length of residence was related to familiarity of the river.**

   - The greatest percent of respondents indicating "not at all" familiar with the Mississippi River had resided in the Twin Cities for 0 to 10 years.
   - Those who indicated that they were "very familiar" with the Mississippi River in the Twin Cities were predominantly those who lived in the Twin Cities for more than 25 years.

3. **Utilization of the river was similar regardless of the length of time the respondent lived in the Twin Cities.**

   - Approximately 50 percent of all resident groups were land users only
   - Approximately 26 percent of all resident groups were both water and land users
   - Approximately 16 percent of those who resided in the Twin Cities for less than 10 years were nonusers and approximately 25 percent of those who resided in the Twin Cities for more than 25 years were nonusers

4. **Items ranking low on availability along or near the Mississippi River were: public facilities (restrooms, water fountains), educational displays and programs, and recreation-based small businesses (shops and restaurants).**

5. **Mutual support exists for environmental and economic related management actions.**

- 98 percent of those who support "encourage the development of small business along the Mississippi River" also support "increase efforts to restore the natural environment of the river area."
- 97 percent of those who support "accommodate increased commercial navigation" also support "speed up implementation of water quality programs."
- 83 percent of those who support "develop new programs to improve water quality" also support "encourage the development of small businesses along the Mississippi River."
- 64 percent of those who support "speed up implementation of water quality programs" also support "accommodate increased commercial navigation."

While the information found in this report and previous reports will be helpful in developing the comprehensive management plan for the MNRRA corridor, results also may be used in long-term management of the MNRRA resource. Current needs of the general public can be identified and prioritized utilizing this information. The determination of appropriate educational efforts, as well as targeting those efforts utilizing geographical and demographical characteristics may be assisted utilizing these study results.

STUDY BACKGROUND

The Mississippi National River and Recreation Area (MNRRA) is a seventy-two mile stretch of the Mississippi River between Dayton and Hastings, MN. The MNRRA is within the Minneapolis/St. Paul metropolitan area (the Twin Cities). The area provides recreational activities, historical sites, residential developments, entertainment facilities, and serves as a resource for businesses located along the Mississippi River.

The National Park Service and the Mississippi River Coordinating Commission is responsible for the development of a comprehensive management plan for the MNRRA. Previous to this study, very little was known about Twin Cities residents' opinions toward and their uses of the Mississippi River within the MNRRA boundaries. To acquire this information the National Park Service worked with the Cooperative Park Studies Unit at the University of Minnesota to develop and execute a study of Twin Cities residents' perceptions and uses of the MNRRA resources.

This study, the 1992 Mississippi National River and Recreation Area Study, had two goals:

1. To develop a knowledge base of the Twin City residents' perceptions and uses of the MNRRA resource.

2. To identify potential issues for consideration in the development of the Management Plan Alternatives for the MNRRA.

METHODOLOGY

Instrumentation

The study booklet was designed to determine resident's perceptions of the Mississippi River corridor in the Twin Cities. The study provided information on: familiarity with the river, current perceptions regarding quality and availability of existing facilities, preferred river management actions, opinions about tourism, and current recreational use patterns of respondents.

Households were asked to respond to several questions related to the above categories, utilizing a six-point Likert scale. The answer scale ranged from 1 (strongly disagree) to 6 (strongly agree). A "don't know" response category also was provided.

The last question was open-ended, asking respondents to write any additional comments about the Mississippi River. These comments can be found in Report II -Respondent Comments.

Sampling Technique

The mail-back response form was sent to a random sample of 3000 residents of the Minneapolis/St. Paul metropolitan area. Names and addresses were purchased from Survey Sampling Inc. The sample was stratified based on geographical proximity to the river. Three strata were selected using census tract information.

Strata 1 included the geographical area that was one census tract in width, approximately 1.5 miles on each side of the river, and included the 72 miles of the Mississippi River included in the MNRRA. *Strata 2* included the geographical area which extended 1.5 miles to 5 miles on each side of the river. *Strata 3* included the geographical area which extended 5 miles to 15 miles on each side of the river. The boundaries of the strata followed existing census tract boundaries. Therefore, mile indicators are approximate.

A random sample was selected from each strata. Unequal numbers were sampled from each strata due to an unequal number of residents in each strata. The number of respondents selected by strata are: strata 1—900; strata 2—1,050; and strata 3—1,050.

Study Booklet Administration

Utilizing a modified Dillman approach[1] the initial study booklet was sent to 3000 respondents on April 28, 1992. The mailing included the study booklet, a cover letter explaining the study, and an insert explaining the MNRRA. One week after the first mailing a reminder post card was sent to all respondents. One week later, a telephone follow-up was made to all nonrespondents. Those contacted again were encouraged to participate in the study. If the initial booklet was lost, another study booklet was sent. The telephone follow-up took place over approximately a two week period. A final telephone follow-up was conducted on Saturday,

1 Dillman, D.A. (1978). Mail and telephone surveys. New York: John Wiley and Sons.

June 6, in a final attempt to reach non-respondents, especially those who were not reached in the previous telephone follow-up.

A total of 1,303 households were utilized for the analysis presented in this report. Three thousand study booklets were sent out and 15 percent (450) were undeliverable, resulting in a 51 percent return rate. This number is a statistically representative sample of the Minneapolis/St. Paul metropolitan area residents living within 15 miles of the MNRRA, at the 95 percent level of confidence.[2] The number of responses from each strata are: strata 1—392; strata 2—448; and strata 3—463.

Data Management and Analysis

Completed study booklets were keypunched and the data were uploaded to a personal computer for analysis. The data were analyzed using the Statistical Program for the Social Sciences (SPSS) software. Basic descriptive statistics and frequency distributions were computed for each variable. Additional cross tabulations were calculated on selected variables.

The results represent the opinions of all respondents, which is a statistical calculation of overall response rates. The results were calculated by weighting the strata responses in proportion to their relationship to the total sample area population. The weights were based on population levels gained from census information.

Copies of all reports are available from the National Park Service Technical Information Center, P.O. Box 25287, Denver, CO 80225.

[2]Welch, S., and J. Comer. 1988. Sampling and sampling procedures. In *Quantitative methods for public administration*, Chicago, IL: The Dorsey Press.

SECTION 1

How are use and length of residence related to familiarity?

How are use and length of residence related to familiarity?

This section looks at the relationship between use and familiarity with the Mississippi River in the Twin Cities. Length of residence and its association with familiarity is also analyzed here.

The familiarity section of the study asked respondents to indicate their level of familiarity with various segments of the river. These segments are identified in figure 1.01 and include: north of Minneapolis, within Minneapolis, within St. Paul, and south of St. Paul. Responses were measured on a scale of 1 to 3; 1=not at all familiar, 2=somewhat familiar, and 3=very familiar.

Respondents were also asked to indicate the types of activities they had participated in along or on the Mississippi River in the Twin Cities in the last three years. The activities were then categorized into water activities (fishing from shore, fishing from a boat, motorboating, canoeing) and land activities (visiting historic sites, bird watching/nature study, walking/hiking/jogging, picnicking, driving for pleasure and bicycling). Those who participated in water activities only were classified as *water users*. Those who participated in land activities only were classified as *land users*. Those who participated in land and water activities were classified as *land and water users*. Those who had not participated in activities along or on the Mississippi River were considered to be *nonusers*.

Results indicate that there is a significant relationship between familiarity with the Mississippi River and use. The water users, like the general population, were most familiar with the area within Minneapolis, with 74.4 percent falling in the "somewhat familiar" or "very familiar" category. Unlike the general population however, the water users were least familiar with the area within St. Paul. Approximately 40 percent of the water users indicated that they were "not at all familiar" with the segment of the river within St. Paul. The level of familiarity with the region north of Minneapolis was also quite low with approximately 39 percent of the water users indicating they were "not at all familiar" with the Mississippi River north of Minneapolis.

The land users were most familiar with the area within Minneapolis (89.0 percent "somewhat familiar" or "very familiar") and least familiar with the area north of Minneapolis. This is quite similar to the level of familiarity of the general population.

The land and water users were more familiar with each of the identified segments of the Mississippi River than the overall population of respondents. Their level of familiarity was also greater than the water user only, land user only and nonuser categories for all segments, except within Minneapolis. The land users were just slightly more familiar with the segment within Minneapolis.

The nonusers, as one might expect, were less familiar with the river than the users. A substantial number were not at all familiar with the area north of Minneapolis (58.4 percent) and south of St. Paul (53.6 percent). The familiarity patterns, however were similar to those of the users. (Greatest familiarity within Minneapolis and least familiarity north of Minneapolis).

In addition to the analysis of use patterns and the relationship to familiarity, length of residence and its relationship to familiarity was analyzed. Respondents indicated the number of years they had resided in the Twin Cities. These responses were then categorized into groups. The groups consisted of those who resided in the Twin Cities 0 to 10 years, 10 to 25 years and over 25 years.

Results analyzing the relationships between length of residence and all categories of familiarity except the area within Minneapolis, were statistically significant ($p < .01$ Chi sq.). Approximately 57 percent of those who resided in the Twin Cities for 0 to 10 years were not at all familiar with the segment of the river north of Minneapolis (figure 1.01). This is considerably higher than the other categories, including the overall general population response. While only 11.2 percent indicated that they were "very familiar" with the segment north of Minneapolis, 69.7 percent of those individuals were residents of the Twin Cities for over 25 years.

Familiarity of the segment within Minneapolis was greater than any of the other segments. Levels of familiarity were similar across length of residence categories, except the 0- to 10-year length of residence category had 21 percent "not at all familiar" with the area within Minneapolis. This is slightly higher than the 10 to 24 years and 25+ years segments which had 11.9 and 16.2 percent "not at all familiar," respectively.

Familiarity with the segment within St. Paul was less than familiarity with the segment within Minneapolis. The segment with the largest percent of respondents indicating "not at all familiar" were those who resided in the Twin Cities for 0 to 10 years. The segment with the largest percent of respondents indicating "very familiar" with the river were those who resided in the Twin Cities for over 25 years.

Familiarity with the area south of St. Paul followed the same pattern as did the areas within St. Paul however, the overall level of familiarity was less.

It therefore, appears that the greatest percent of respondents indicating "not at all" familiar with the Mississippi River fell in the 0 to 10 year category. Also those who indicate that they are "very familiar" fell predominantly in the 25+ year category. This information may be helpful in determining appropriate educational efforts, as well as targeting those efforts utilizing geographical and demographical characteristics.

Figure 1.0 *The Mississippi River in the Twin Cities.*

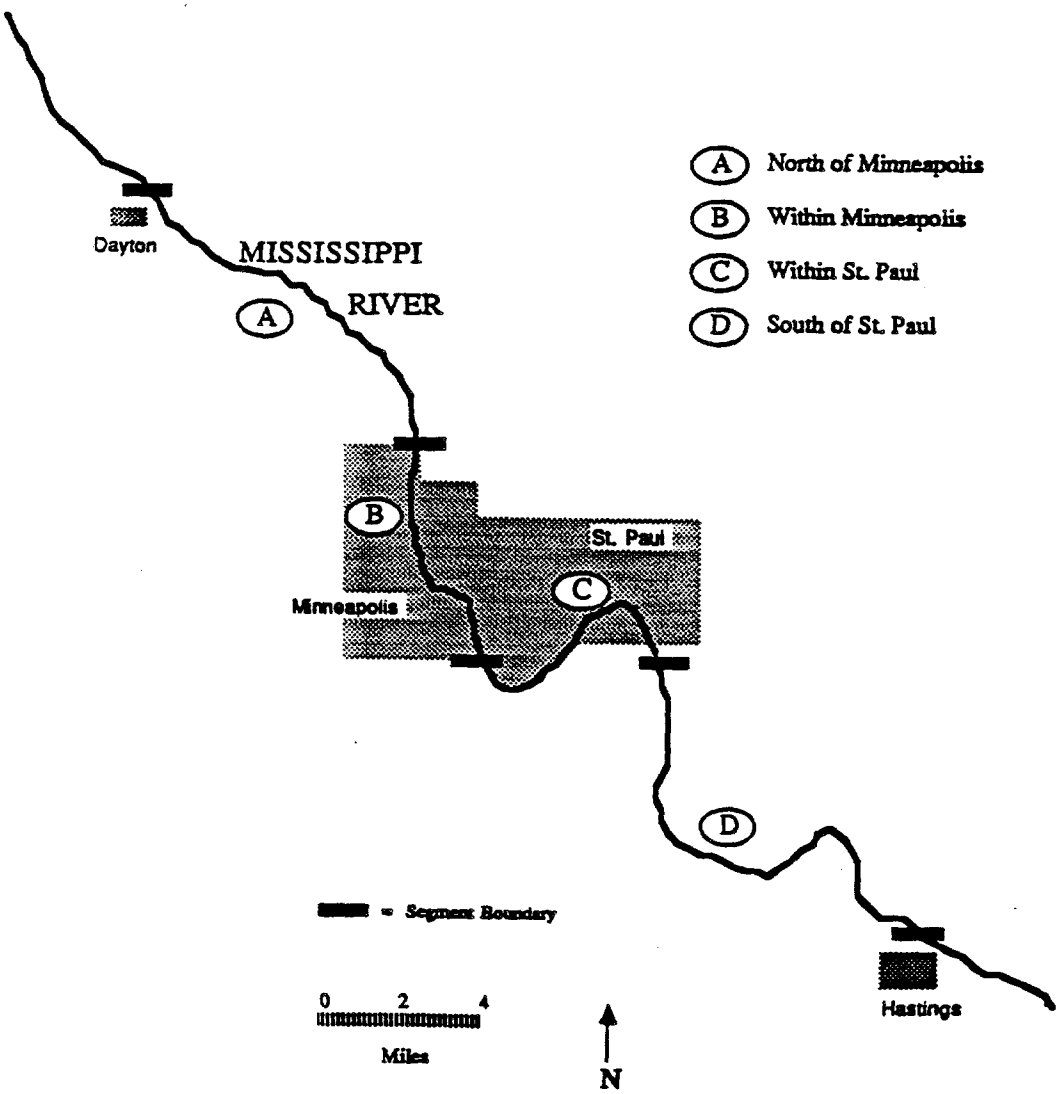


Table 1.01. Use and familiarity with the Mississippi River.

Level of Familiarity	Type of Use[a]				Overall[c]
	Water user only	Land user only	Land and water user	Nonuse	
North of Minneapolis[b]					
Not at all familiar	38.6	42.6	30.5	58.4	40.5
Somewhat familiar	50.0	47.3	52.0	36.4	48.9
Very familiar	11.4	10.1	17.5	5.2	10.6
Total number	44	514	275	231	
Within Minneapolis[b]					
Not at all familiar	25.6	10.9	11.6	33.2	16.0
Somewhat familiar	65.1	57.9	53.8	58.7	57.2
Very familiar	9.3	31.2	34.7	8.1	26.8
Total number	43	516	277	235	
Within St. Paul[b]					
Not at all familiar	39.5	21.7	19.2	42.9	26.4
Somewhat familiar	48.8	50.1	46.3	43.3	48.2
Very familiar	11.6	28.2	34.5	13.7	25.4
Total number	43	515	281	233	
South of St. Paul[b]					
Not at all familiar	34.9	34.0	23.6	53.6	36.1
Somewhat familiar	46.5	49.8	50.4	35.6	46.1
Very familiar	18.6	16.1	26.1	10.7	17.8
Total number	43	514	280	233	

[a]Percent of users indicating the given level of familiarity.
[b]Indicates results are significant at the .01 level of significance.
[c]Overall percent of total population indicating the given level of familiarity (from Report I).

Table 1.02. Length of residence and familiarity with the Mississippi River.

Level of Familiarity	Length of Residence[a]		
	0 to 10 years	10 to 25 years	25+ years
North of Minneapolis[b]			
Not at all familiar	56.5	40.9	38.6
Somewhat familiar	37.6	47.6	48.9
Very familiar	5.9	11.5	12.5
Total number	186	252	736
Within Minneapolis[b]			
Not at all familiar	21.0	11.9	16.2
Somewhat familiar	57.0	59.3	55.3
Very familiar	22.0	28.9	28.5
Total number	186	253	754
Within St. Paul[b]			
Not at all familiar	35.4	23.8	23.5
Somewhat familiar	53.4	50.8	45.5
Very familiar	11.1	25.4	31.0
Total number	189	252	748
South of St. Paul[b]			
Not at all familiar	46.0	33.7	33.6
Somewhat familiar	44.9	48.8	46.4
Very familiar	9.1	17.5	19.9
Total number	187	252	743

[a]Percent of each category indicating the level of familiarity.
[b]Indicates results are statistically significant ($p < .01$ - CHISQ).

SECTION 2

Is there a relationship between length of residence, gender, and use patterns on the Mississippi River?

Is there a relationship between length of residence, gender, and use patterns on the Mississippi River?

Respondents were asked to indicate if they had participated in a series of activities. These activities were grouped into water activities and land activities, as described in the previous section. Those participating in both were classified as *land and water users*. Those not participating in either were classified as *nonusers*. The analysis indicated that 4.1 percent of respondents were *water users* only, 48.1 percent were *land users* only and 25.8 percent were *water and land users* and 22 percent were *nonusers* of the Mississippi River in the Twin Cities (table 2.01).

Patterns of use by the overall respondent population and the individual segments based on length of residence were quite similar. The land use was near 50 percent for all categories, with those residing in the Twin Cities *less than 10 years* and *10 to 25 years* at approximately 52 percent and those residing in the Twin Cities *more than 25 years* at 45 percent. Nonusers made up approximately 15 percent of the *less than 10 years* and *10 to 25 year* category, however 25.2 percent of the *25+ year* residents were nonusers.

The gender of the users were also analyzed. Even though, a greater number of the respondents were males, the percent of females participating in water activities (3.6) was similar to the percent of males participating in water activities (4.4). The percent of female land only users (52.6) however, was slightly greater than the percent of male land only users (46.1). The percent of male land and water users is again slightly different, however in this case a greater percent of males (27.8) are land and water users in comparison to the females (22.0). The percent of nonusers for each gender group is very similar with 21.8 and 21.7 percent of females and males, respectively.

Table 2.01. Use of the Mississippi River.

Type of Use	Length of Residence						Overall	
	Less than 10 yrs.		10 to 25 yrs.		25+ yrs.			
	N	%*	N	%	N	%	N	%
Water only	10	5.9	10	4.8	24	3.7	45	4.3
Land only	89	52.4	109	52.7	306	45.1	504	47.8
Water and land	44	25.9	57	27.5	176	26.0	277	26.3
Nonuser	27	15.9	31	15.0	171	25.2	229	21.7

*Percentage of residents residing in the Twin Cities for the designated period of time who participate in each type of use.

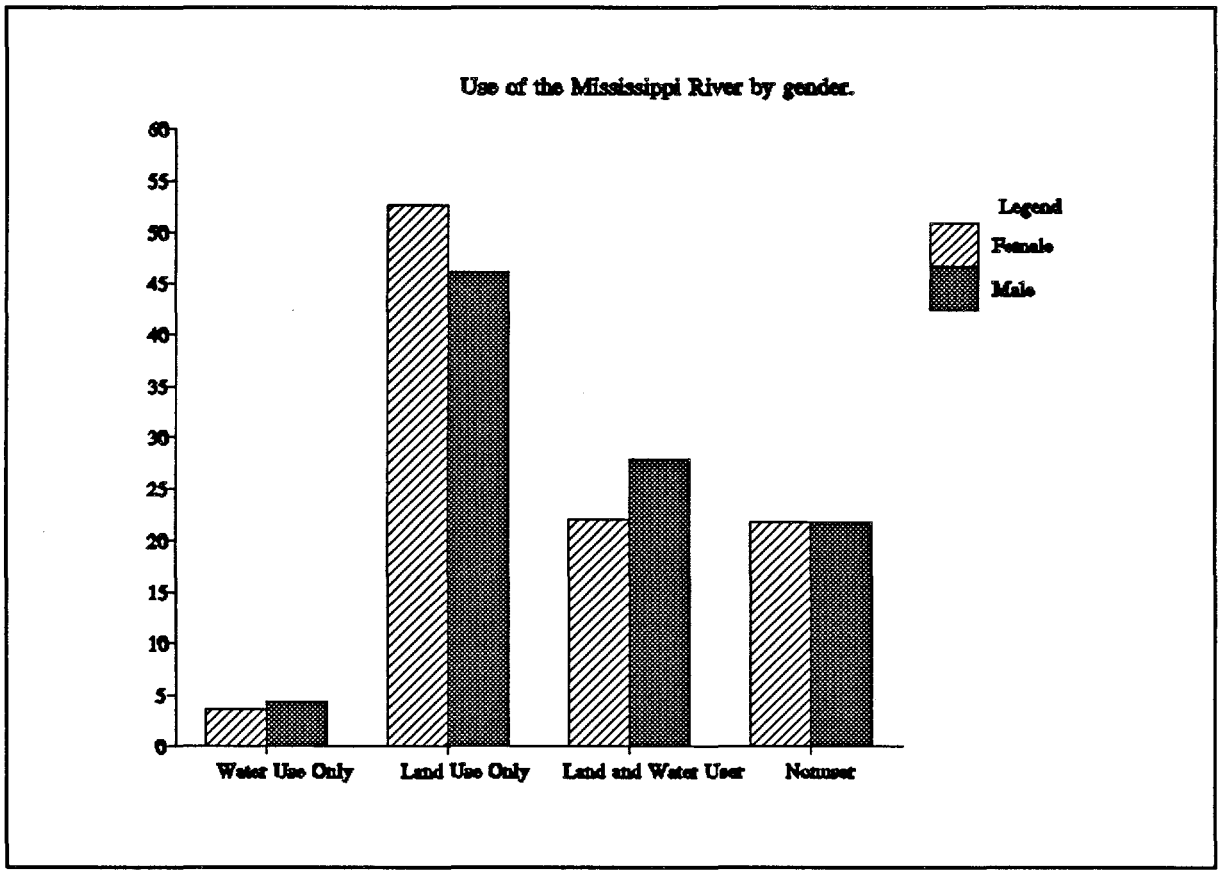


Figure 2.01.

SECTION 3

How do different user groups perceive management actions?

How do different user groups perceive management actions?

A list of seventeen potential management actions for the Mississippi River in the Twin Cities was presented in the study booklet. Respondents were asked to indicate their level of support for each of the items utilizing a six-point Likert scale.

Respondents were also asked to rate current *quality* and *availability* of facilities and opportunities that occur along or near the Mississippi River in the Twin Cities. *Quality* was rated on a four point scale from "Very poor" to "Good". *Availability* was rated on a four point scale from "Not at all" to "High".

Recreation use was determined based on the activities respondents participated in along or on the Mississippi River in the Twin Cities. These activities were grouped, as described in the previous sections, and means were calculated for quality, availability and management action items of the study. The means were then ranked for each user group.

The top five ranking items on availability were: scenic beauty, trails for walking, hiking, and biking, quiet areas to sit and view the river, historical attractions, and opportunities to attend concerts, festivals, and arts performances. The rankings were somewhat different for the different user groups (table 3.02) however, the above items were identified by all groups to be within the top five ranking, except for the water only users who ranked "historical attractions" eighth and ranked "undeveloped natural public land" fourth, slightly higher than the other groups.

The three items that were ranked low on availability were: public facilities (restrooms, water fountains), educational displays and programs, and recreation-based small businesses.

The rankings on quality and availability were quite similar. The top ranking items on quality were: scenic beauty, trails for walking, hiking, and biking, quiet areas to sit and view the river, historical attractions, and opportunities to attend concerts, festivals, and arts performances.

Management actions were also analyzed utilizing ranked means. The top ranking management action was "develop new programs to improve water quality." Others in the top five were: "speed up implementation of water quality programs," "increase efforts to restore the natural environment of the river area," "develop additional trails for hiking, walking, or biking along or near the Mississippi River," and "create speed zones for recreational boats on the Mississippi River in the Twin Cities." This later item however, was not ranked in the top five by water users, instead it was ranked tenth by this group.

Actions which ranked in the bottom three were: "develop additional public access sites for boating on the Mississippi River," "provide increased parking at existing boat access sites," and "accommodate increased commercial navigation on the river." These items were similar for most of the use groups, however nonusers ranked "develop additional public access sites for boating on the Mississippi River" fifth. It is also important to note that even though these items were ranked near the bottom of the listing, the mean was still at the 3.9 level. This means that support is near the "support somewhat" category.

Table 3.01. Comparison of ranked means for users and nonusers on perceived availability of existing facilities and opportunities.*

	Water Only Users		Land Only Users		Land and Water Users		Nonusers		Overall Total	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Scenic Beauty	3.27	1	3.39	1	3.41	1	3.22	1	3.56	1
Trails for walking, skiing and biking	3.19	2	3.22	2	3.23	2	2.94	2	3.18	2
Quiet area to sit and view the river	2.97	5	3.06	3	3.07	3	2.89	3	3.03	3
Historical attractions	2.83	8	2.93	4	2.94	4	2.88	4	2.92	4
Opportunities to attend concerts, festivals and arts performances	3.05	3	2.93	4	2.93	5	2.81	5	2.91	5
Residential development	2.85	7	2.90	6	2.78	7	2.75	6	2.84	6
Boat access sites	2.96	6	2.76	7	2.89	6	2.61	8	2.80	7
Marinas	2.55	11	2.73	8	2.78	7	2.70	7	2.74	8
Undeveloped (natural) public land	3.0	4	2.65	9	2.66	9	2.61	8	2.66	9
Recreation-based small business (shops, restaurants)	2.57	9	2.45	11	2.44	10	2.47	10	2.45	10
Educational displays and programs	2.57	9	2.47	10	2.42	11	2.27	12	2.43	11
Public facilities (restrooms, water fountains)	2.40	12	2.40	12	2.41	12	2.34	11	2.40	12

*Responses of "don't know" and missing responses are not used in calculating the mean responses.

Table 3.02. Comparison of ranked means for users and nonusers on perceived quality of existing facilities and opportunities.*

	Water Only Users		Land Only Users		Land and Water Users		Nonusers		Overall Total	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Scenic beauty	3.38	1	3.48	1	3.50	1	3.25	1	3.44	1
Trails for walking, skiing, and biking	3.20	2	3.23	2	3.03	5	2.97	3	3.22	2
Quiet area to sit and view the river	3.04	5	3.14	3	3.19	2	2.94	4	3.12	3
Historical attractions	3.00	6	3.09	4	3.12	3	2.99	2	3.08	4
Opportunities to attend concerts, festivals and arts performances	3.16	4	3.07	5	3.07	4	2.90	5	3.05	5
Residential development	2.94	9	3.05	6	2.97	7	2.88	6	3.00	6
Boat access sites	3.17	3	2.91	7	3.02	6	2.75	9	2.95	7
Marinas	2.94	9	2.87	8	2.93	8	2.76	8	2.88	8
Undeveloped (natural) public land	3.00	6	2.84	9	2.89	9	2.78	7	2.86	9
Recreation-based small businesses (shops, restaurants)	2.86	8	2.66	10	2.70	11	2.62	10	2.67	10
Educational displays and programs	2.58	11	2.59	11	2.71	10	2.41	11	2.61	11
Public facilities (restrooms, water fountains)	2.54	12	2.55	12	2.60	12	2.35	12	2.55	12

*Responses of "don't know" and missing responses are not used in calculating the mean responses.

Table 3.03. Comparison of ranked means for users and nonusers on management actions.*

	Water Only Users		Land Only Users		Land and Water Users		Nonusers		Overall Total	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Develop new programs to improve water quality	5.36	2	5.45	1	5.47	1	5.18	1	5.40	1
Speed up implementation of water quality programs	5.36	2	5.43	2	5.39	2	5.16	2	5.36	2
Increase efforts to restore the natural environment of the river area	5.44	1	5.42	3	5.30	3	5.11	3	5.33	3
Develop additional trails for hiking, walking, or biking along or near MR	4.85	5	5.19	4	5.00	4	4.78	7	5.04	4
Create speed zones for recreational boats on MR in Twin Cities	4.66	10	5.14	6	4.92	6	5.06	4	5.04	4
Improve the safety of facilities, trails and access points	4.79	6	5.18	5	4.90	7	4.92	6	5.04	4
Create areas for scenic vistas along or near MR	4.79	6	5.10	7	5.00	4	4.72	8	4.98	7
Develop historic attractions along or near the river	4.67	9	4.91	8	4.82	10	4.71	9	4.84	8
Develop additional picnic areas along or near MR	4.73	8	4.89	9	4.87	9	4.65	10	4.83	9
Control new residential developments along or near the river	4.91	4	4.74	10	4.88	8	4.56	11	4.75	10
Provide more visitor education on the commercial uses of the river	4.31	13	4.60	11	4.56	11	4.49	12	4.56	11
Encourage more concerts, festivals, and art performances along the river	4.54	11	4.52	12	4.45	13	4.24	13	4.45	12
Encourage the development of tourism/recreation based small businesses along or near MR	4.17	15	4.40	13	4.46	12	4.39	13	4.41	13
Improve existing boat access sites	4.46	12	4.13	14	4.38	14	4.16	15	4.22	14
Accommodate increased commercial navigation on the river	3.59	17	3.83	16	3.78	17	3.94	17	3.83	15
Provide increased parking at existing boat access sites	4.14	16	3.84	15	4.14	15	3.97	16	3.97	16
Develop additional public access sites for boating on Mississippi River	4.18	14	3.81	17	4.03	16	3.94	5	3.91	17

*Responses of "don't know" and missing responses are not used in calculating the mean responses.

SECTION 4

How are benefits and problems perceived by respondents of different geographical strata?

How are benefits and problems perceived by respondents of different geographical strata?

Respondents were asked to identify benefits and problems they incurred as a result of their relationship with the Mississippi River. A list of potential benefits was presented to the respondent and they were asked to indicate the degree of benefit they had received. A five point rating scale was provided: 1=not at all; 2=slight; 3=moderate; 4=large; and 5=very large. A list of potential problems were also presented to the respondent. Each was rated on the following scale: 1=not at all; 2=slight; 3=moderate; 4=serious; and 5=very serious.

This analysis looked at perceived benefits and problems by strata. Benefits received were somewhat different on some of the items for those who lived closer to the river than those who lived further away. Items which were perceived to be of a large or very large benefit by more than half of the respondents were: scenic enjoyment and increased access to parks and hike/bike trails.

High property values were not perceived to be a benefit at all by 49 percent of all respondents. However, strata 3 respondents experienced less of a benefit than did strata 1 respondents. Sixty-six percent of strata 1 respondents had experienced higher property values, while only 45 percent of strata 3 respondents had higher property values.

A similar pattern was found when analyzing increased access to parks and hike/bike trails. Ninety-one percent of strata 1 respondents had perceived this benefit while 85 and 76 percent of the strata 2 and 3, respectively, had perceived this benefit.

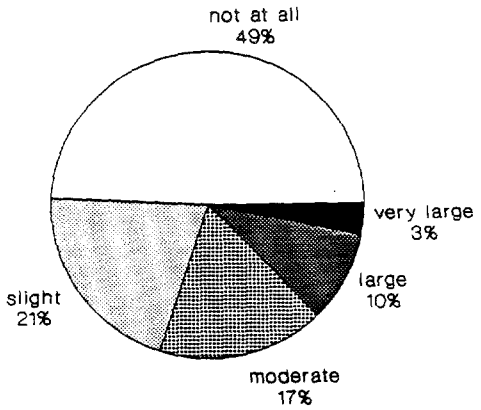
Problems, like the benefits were also perceived differently based on the respondent's proximity to the river. Items where more of a significant difference was identified were: noise, trespass, higher property taxes, and alcohol and drug use. Litter, lots of noise, fear for safety, crowding and traffic congestion were perceived to be a problem at some level for 50 percent or more of the respondents.

The problem of lots of noise was experienced by all strata, however, it was experienced by a greater percent of those who lived in strata 1 (66 percent) than those who lived in strata 2 (56 percent) or strata 3 (46 percent).

Trespassing, while not perceived as a very serious problem by all groups, was more of a problem for strata 1 respondents than strata 2 or strata 3. Twenty-three percent of strata 1 respondents experienced this problem.

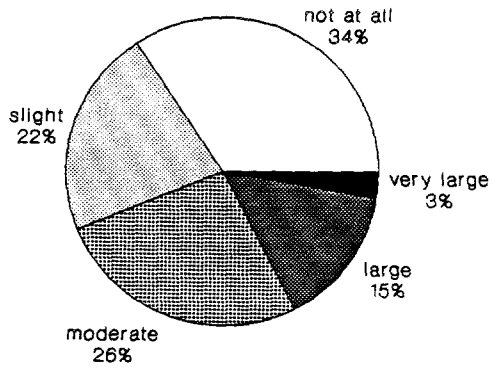
Respondents reporting to experience higher property taxes as a result of their relationship with the Mississippi River were greater in number in strata 1 than strata 2 or 3. Fifty-five percent of strata 1 respondents, 38 percent of strata 2 respondents and 27 percent of strata 3 respondents perceived this problem.

Fifty percent of all respondents were bothered by alcohol and drug use along the river. The percent of strata 1 respondents (61 percent) perceiving this problem were greater than strata 3 respondents (45 percent).



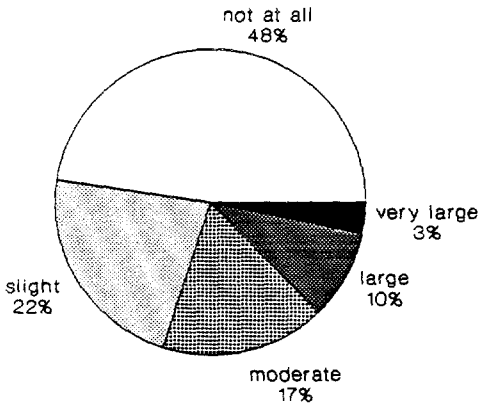
mean = 1.97, std dev = 1.16

a. All respondents



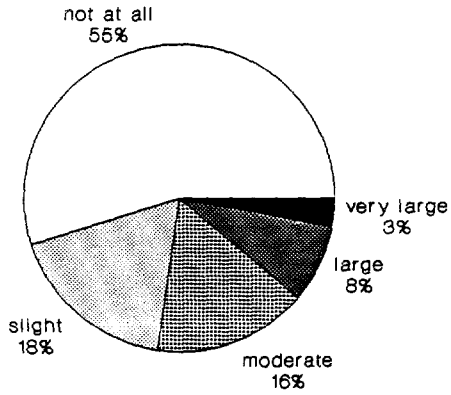
n = 326, mean = 2.30, std dev = 1.17

b. Strata 1 respondents



n = 386, mean = 1.99, std dev = 1.16

c. Strata 2 respondents

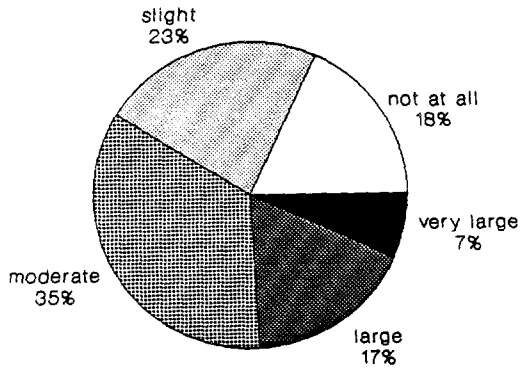


n = 399, mean = 1.87, std dev = 1.14

d. Strata 3 respondents

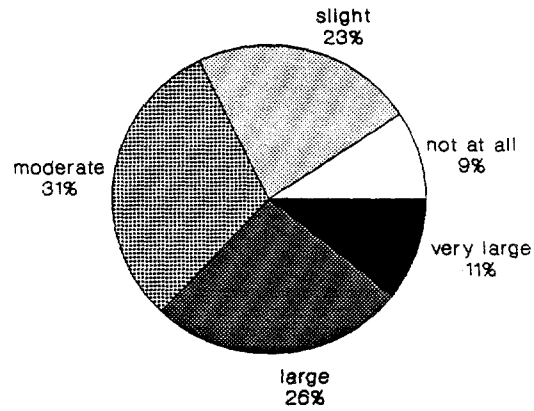
Figure 4.01. Respondents' indication of how much the Mississippi River in the Twin Cities has *benefitted* them in terms of high property values.

*Mean is based on a 1 to 5 scale with 1=not at all, 2=slight, 3=moderate, 4=large, 5=very large.



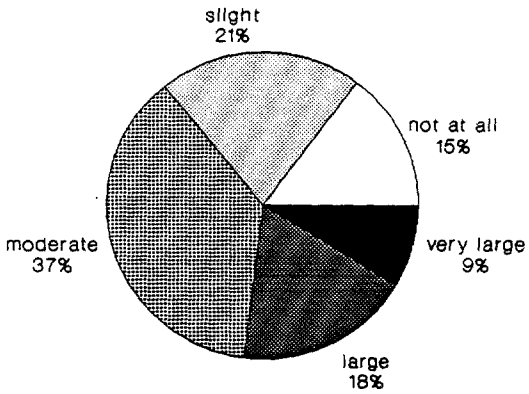
mean = 2.72, std dev = 1.15

a. All respondents



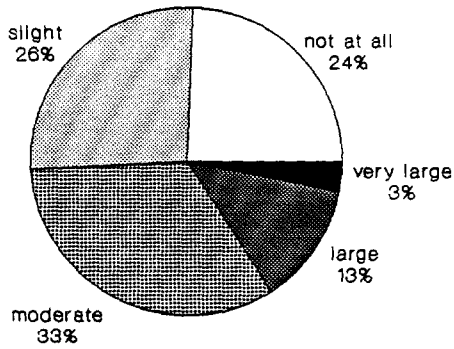
n = 332, mean = 3.06, std dev = 1.14

b. Strata 1 respondents



n = 390, mean = 2.85, std dev = 1.15

c. Strata 2 respondents

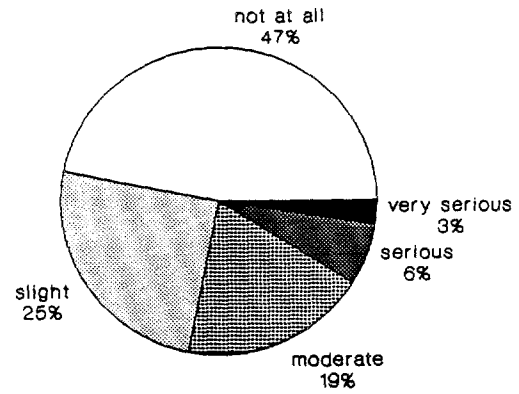


n = 405, mean = 2.44, std dev = 1.09

d. Strata 3 respondents

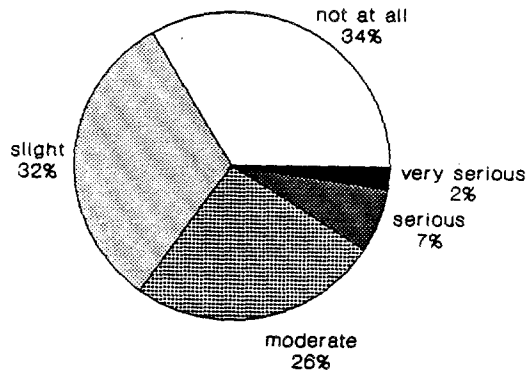
Figure 4.02. Respondents' indication of how much the Mississippi River in the Twin Cities has *benefitted* them in terms of increased access to parks and hike/bike trails.

*Mean is based on a 1 to 5 scale with 1=not at all, 2=slight, 3=moderate, 4=large, 5=very large.



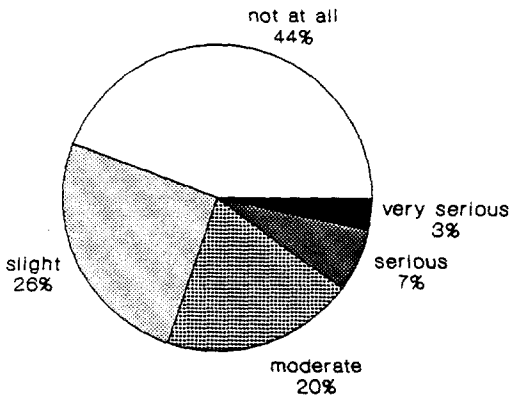
mean = 1.30, std dev = 1.07

a. All respondents



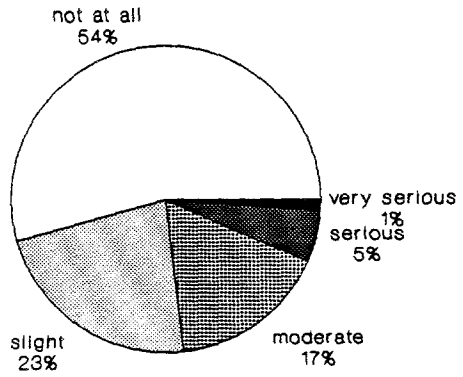
n = 331, mean = 2.13, std dev = 1.03

b. Strata 1 respondents



n = 391, mean = 1.99, std dev = 1.10

c. Strata 2 respondents

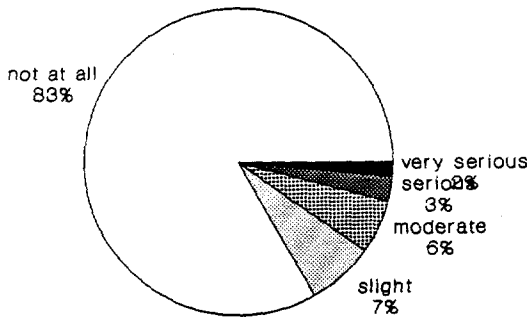


n = 404, mean = 1.77, std dev = .993

d. Strata 3 respondents

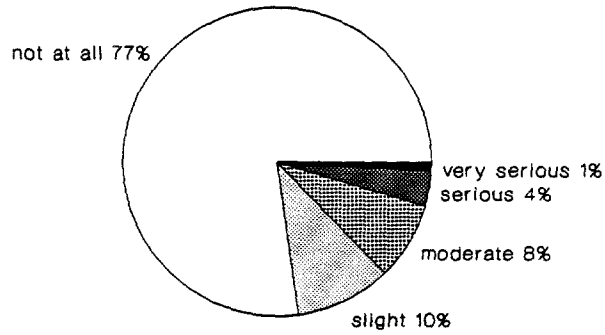
Figure 4.03. With regard to the Mississippi River and its users in the Twin Cities, respondents' indication of how much they found lots of noise to be a *problem*.

*Mean is based on a 1 to 5 scale with 1=not at all, 2=slight, 3=moderate, 4=large, 5=very large.



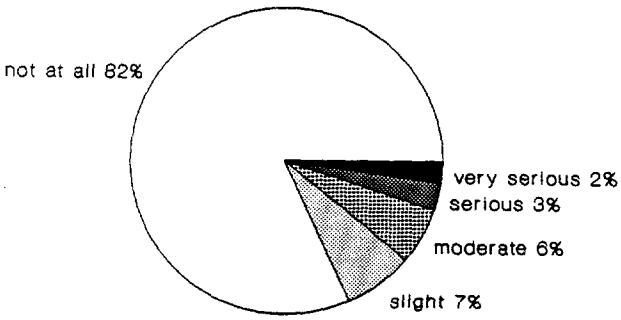
mean = 1.33, std dev = .833

a. All respondents



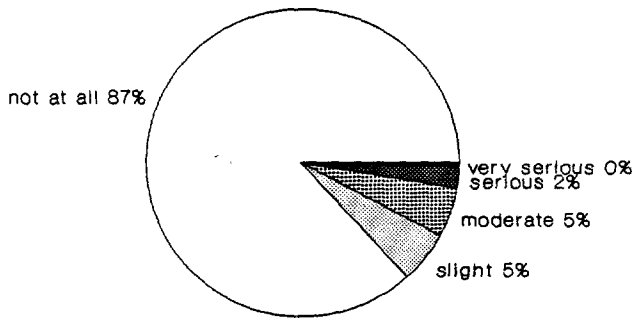
n = 330, mean = 1.41, std dev = .857

b. Strata 1 respondents



n = 389, mean = 1.37, std dev = .894

c. Strata 2 respondents

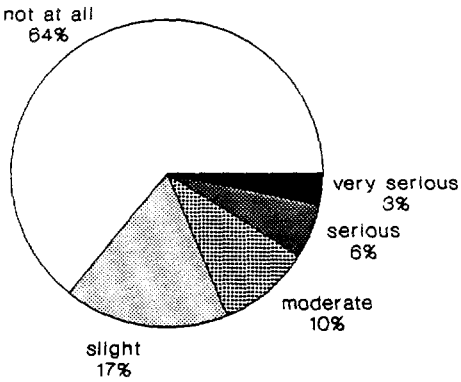


n = 403, mean = 1.25, std dev = .696

d. Strata 3 respondents

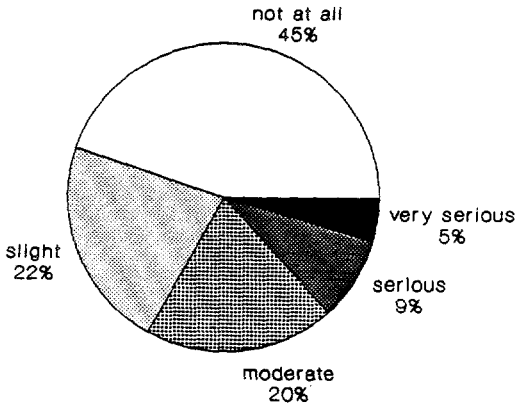
Figure 4.04. With regard to the Mississippi River and its users in the Twin Cities, respondents' indication of how much they found people trespassing on your property to be a *problem*.

*Mean is based on a 1 to 5 scale with 1=not at all, 2=slight, 3=moderate, 4=large, 5=very large.



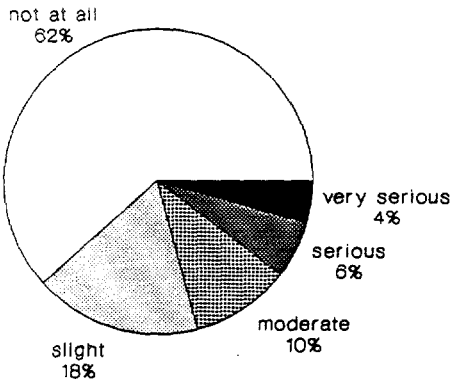
mean = 1.68, std dev = 1.09

a. All respondents



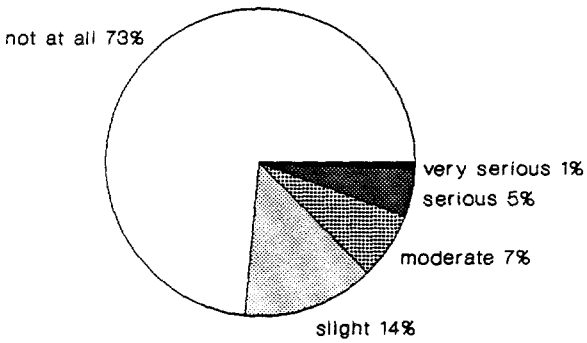
n = 330, mean = 2.06, std dev = 1.19

b. Strata 1 respondents



n = 385, mean = 1.74, std dev = 1.14

c. Strata 2 respondents

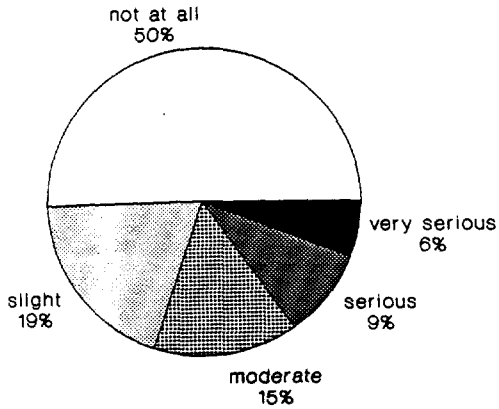


n = 399, mean = 1.46, std dev = .884

d. Strata 3 respondents

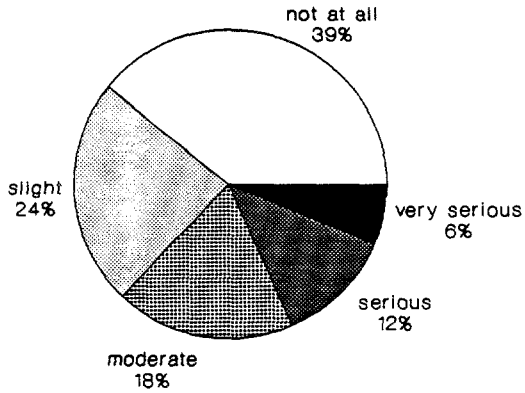
Figure 4.05. With regard to the Mississippi River and its users in the Twin Cities, respondents' indication of how much they found higher property taxes to be a *problem*.

*Mean is based on a 1 to 5 scale with 1=not at all, 2=slight, 3=moderate, 4=large, 5=very large.



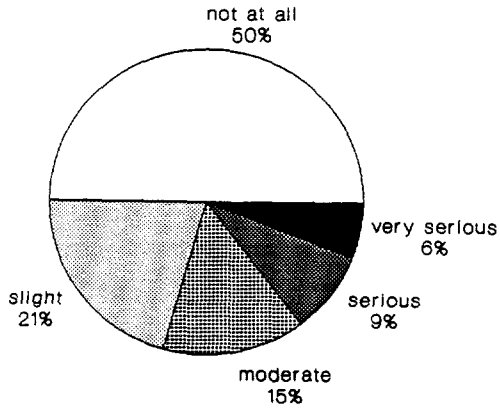
mean = 2.01, std dev = 1.26

a. All respondents



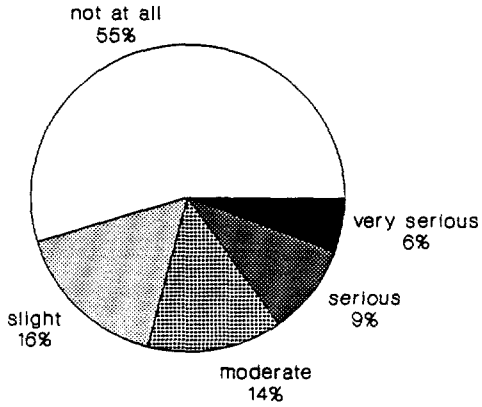
n = 330, mean = 2.23, std dev = 1.26

b. Strata 1 respondents



n = 389, mean = 2.00, std dev = 1.24

c. Strata 2 respondents



n = 402, mean = 1.95, std dev = 1.26

d. Strata 3 respondents

Figure 4.06. With regard to the Mississippi River and its users in the Twin Cities, respondents' indication of how much they found bothered by alcohol and drug use along the river to be a *problem*.

*Mean is based on a 1 to 5 scale with 1=not at all, 2=slight, 3=moderate, 4=large, 5=very large.

SECTION 5

Is there mutual support for environmental and economic related management actions?

Is there mutual support for environmental and economic related management actions?

Questions related to environmental and economic issues were dispersed throughout the study. This report has looked at respondents support/nonsupport on environmental related issues and how it relates to support/nonsupport of economic related issues.

To simplify interpretation, responses to management actions were condensed into two groups: *oppose*, which was previously "strongly oppose," "oppose," and "oppose somewhat," and *support*, which was previously "support somewhat," "support," and "strongly support." Tourism related statements were rated on a scale from "strongly disagree" to "strongly agree," therefore these responses were grouped into *disagree* and *agree* categories, just as the previous management actions were grouped.

The first grouping of environmental management actions to be analyzed were:

1. increase efforts to restore the natural environment of the river area;
2. speed up implementation of water quality programs; and
3. develop new programs to improve water quality.

These above actions were cross tabulated with the following economic oriented management actions:

1. encourage the development of small businesses along the Mississippi River, and
2. accommodate increased commercial navigation (table 5.01).

The results of this analysis indicated that those who supported the increased efforts to protect the environment *also* supported the management actions supporting economic development. The level of support ranged from 64.1 percent to 83 percent of the respondents, depending on the specific item. When the comparison was reversed even a higher percent of those who supported commercial development supported the environmental protection actions. The support ranged from 96 percent to 98.7 percent of respondents, depending on the specific item (table 5.02).

The second group analyzed included:

1. erosion of the Mississippi River's banks is a serious problem, and
2. develop historic attractions.

The above were cross tabulated with:

1. accommodate increased commercial navigation, and
2. encourage the development of small businesses (tables 5.03 and 5.04).

A final comparison analyzed support for the following:

1. steps should be taken to control commercial development along the Mississippi River to protect the river, and
2. tourism has strengthened the Twin Cities economy (tables 5.05 and 5.06).

The results of these analyses were very similar to the first set with support of economic development by those supporting environmentally/historically oriented actions to range from 64 percent to 91.8 percent of respondents, depending on the specific item (tables 5.04 and 5.06). Of those supporting commercial development, 86.9 percent to 97.1 percent supported environmental/historical related actions (tables 5.03 and 5.05).

Table 5.01. A comparison of support for environmental actions by those who support economic actions.

	Increase efforts to restore the natural environment of the river area		Speed up implementation of water quality programs		Develop new programs to improve water quality	
	Support		Support		Support	
	N	%	N	%	N	%
Encourage the development of small business along the MR						
Support	881	97.7	876	98.0	889	98.73
Total N	902		894		901	
Accommodate increased commercial navigation						
Support	558	96.6	592	97.4	599	97.9
Total N	609		608		612	

*Percent of those supporting the specific economic actions who also support the specific environmental action.

Table 5.02. A comparison of support for economic actions by those who support environmental actions.

	Encourage the development of small businesses along the MR		Accommodate increased commercial navigation	
	Support		Support	
	N	%	N	%
Increase efforts to restore the natural environment of the river area				
Support	881	83.0	588	64.1
Total N	1,062		917	
Speed up implementation of water quality programs				
Support	876	82.6	592	64.1
Total N	1,060		924	
Develop new programs to improve water quality				
Support	889	82.5	559	64.1
Total N	1078		895	

*Percent of those supporting specific environmental actions who also support economic actions.

Table 5.03. A comparison of support for environmental and historic related actions by those who support economic actions.

	Erosion of the MR's banks is a serious problem		Develop historic attractions	
	Agree		Support	
	N	%	N	%
Accommodate increased commercial navigation				
Support	352	86.9	579	94.9
Total N	405		610	
Encourage development of small businesses				
Support	512	87.1	881	97.1
Total N	588		907	

*Percent opposing/supporting economic actions who also support environmental and historic related issues.

Table 5.04. A comparison of support for economic issues by those who support environmental and historic related issues.

	Accommodate increased commercial navigation		Encourage development of small businesses	
	Support		Support	
	N	%	N	%
Erosion of the MR's banks is a serious problem				
Agree	352	63.9	512	83.8
Total N	551		611	
Develop historic attractions				
Support	579	65.2	881	85.7
Total N	888		1,028	

*Percent supporting environmental/cultural statement who also support economic actions.

Table 5.05. A comparison of support for environmental actions by those who support tourism as an economic development tool.

	Steps should be taken to control development along the MR to protect the river	
	Agree	
	N	%
Tourism has strengthened the Twin Cities' economy		
Agree	811	93.0
Total N	872	

*Percent supporting economic statement who also support environmental actions.

Table 5.06. A comparison of support for tourism as an economic development tool by those who support environmental actions.

	Tourism has strengthened the Twin Cities' economy	
	Agree	
	N	%
Steps should be taken to control commercial development along the MR to protect the river		
Agree	811	91.8
Total N	883	

*Percent supporting environmental statement who also support tourism as an economic development tool.