

IDENTIFIED RECREATION OPPORTUNITIES AND PREFERENCES FOR THE LOWER PENOBSCOT RIVER, MAINE

Milton J. Fusselman

President, Recreation Associates, P.O. Box 337, Stillwater, ME
04489-0337

Joanne F. Tynon

Assistant Professor, Parks, Recreation and Tourism Program,
South Annex B, University of Maine, Orono, ME 04469

The Penobscot River has been the focus of a major Atlantic Salmon restoration effort for the last 25 years. The river has received national and international attention with the proposal of an additional 38-megawatt hydroelectric facility on its main stem. This study was conducted in response to a need to identify recreation enhancement and mitigation options related to licensing of the proposed facility. Our research to date describes recreation use patterns and preferences, and associated perceptions of recreation experiences and constraints. Detailed findings are published in Maine Agricultural and Forest Experiment Station Miscellaneous Report No. 381: Penobscot River Recreation Study, May 1994. Additional research will look more fully into factors related to leisure constraints in the study area.

Introduction

The Penobscot River drains one-fourth of the State of Maine, approximately 8000 square miles, an area greater in size than the State of Massachusetts. The Penobscot watershed has a diversity of history, topography, and current uses. Generally considered an outdoor enthusiast's paradise throughout its expanse, the watershed plays an intimate part in the fabric of Maine life. The Penobscot tributaries begin in the northwest reaches of the state and course their ways through timberlands and farmlands, urban areas and coastal regions. The Penobscot River provides bountiful wild water recreation and multitudes of locations for quiet solitude. The river's mighty power is put to work as it leaves Maine's unorganized territories and passes through into the urban heartland. The legislature and local governments have responded to the opportunities created by the river, and to the diversity of interests in the watershed. Reckless indifference to the watershed has been replaced by a growing sense of nurture and care for the waters, while retaining both the working and recreational opportunities afforded by the Penobscot. Significant areas addressed through legislation include shoreland zoning, air and water pollution, deteriorating dams, preservation of wetlands, fisheries issues, and pesticide issues.

Methodology

The study was developed under the auspices of the Parks, Recreation, and Tourism Program of the University of Maine in the summer of 1992. The study area was defined as the portion of the lower Penobscot River from Bangor to Milford, Maine. The intent of the study was to gather information on area residents' perceptions of the river, the quality of recreation on the river, recreational use rates, and barriers to river recreation. The study also sought to determine residents' attitudes toward and desires for different types of recreation that have been proposed for the specified region of the Penobscot River.

The study was accomplished through the use of a mail-out survey. A random sample of households from the nine communities in closest geographic proximity to the study area was selected as the survey population. The sample was stratified based on individual populations of the chosen communities.

We used the Total Design Method (TDM) to develop the survey and, due to time and budget constraints, a modified TDM to administer the survey (Dillman 1978). In September 1992, we mailed a map of the study area and a questionnaire to each of the households in the sample. Two sets of follow-up postcards were mailed in October and November, to remind people to return their surveys and to thank those who had already completed their surveys. Replacement questionnaires were mailed to those who requested them.

Results

The following are selected results from the survey, and highlight many of the important issues associated with the study. The key issues that we identified are:

- 1) How do people use the river now?
- 2) How do people want to use the river?
- 3) What constraints limit participation in river recreation?
- 4) How does access affect recreation?
- 5) What adds to or detracts from the quality of a recreation experience?
- 6) What potential recreation opportunities exist?

A total of 555 questionnaires were completed and returned by persons actually living in the survey region. Twenty-seven percent of the questionnaires were answered by women and seventy-three percent were answered by men, a result likely influenced by the household lists. The respondents varied in age from 22 to 88 years of age. Only 8% of the respondents were less than 30 years old. More than 45% of the respondents were 31 to 50 years old, and about 35% were 51 to 70 years old. Three-quarters of the respondents have lived more than ten years in the study region. The average age of male and female respondents was nearly equal, and the men generally had lived in the region about 20% longer than the women. More than one-quarter of the respondents belonged to a conservation or sports organization. The proportions of male and female respondents belonging to such organizations were nearly equal. People who were members of such organizations used the study area about 1-1/2 times more frequently than did nonmembers.

How Do People Use The River Now?

Seventeen percent of the respondents had never used the river for recreational purposes. Of those respondents who had used the river, the date of their last visit ranged from July 4, 1931, to a few days before completing the survey. The median last visit occurred three months before the time of the survey. About 32.3% of the respondents visited within the previous 2 months, 49.6% visited within the previous 4 months, and 54.2% visited within the previous year. At least 62.7% had visited in the previous 2 years, but 31.9% had not visited the study area in more than 4 years.

When questioned about 22 different types of river recreation, between 30% and 50% of the respondents indicated a preference to use the area near the river primarily to relax, walk or hike, or to picnic (Figure 1). Canoeing or kayaking, fishing from the bank, bird watching, and fishing from a boat were the next most popular activities, according to approximately 20% to 30% of the respondents. These activities were followed closely by motorboating, bicycling, and cross-country skiing (7% to 11% participation). Participation rates for the remainder of the 22 activities ranged from less than 1/2% to less than 7%.

Table 1. Characteristics of the 1992 Penobscot River recreation study respondents.

Characteristics	Male	Female
Average Age (Median Age)	50 years old (48 years old)	49 years old (47.5 years old)
Average Number of Years as an Area Resident (Median Number of Years)	30 years (27 years)	25 years (23 years)
Typical Employment Status	Full Time	Full Time
Median Household Income	\$40,000-\$50,000	\$25,000-\$30,000
Average Number of People that Income Supports	2.83 persons	2.17 persons
Percentage of Respondents who are Members of a Conservation or Sporting Organization	28.0%	26.4%
Median Number of Months Since Last Visit to the Penobscot River	3 months	3 months

The lack of either real or perceived opportunities is reflected in the large number of respondents desiring an activity versus the number of respondents currently participating in that activity in the study area. Of the 22 types of recreation listed, the number of people who desired a particular type of recreation was 1-1/2 to 110 times as great as the number of people who currently use the river, or the area near the river, in those ways, except for canoeing/kayaking and bicycling.

Canoeing/kayaking and bicycling were among the bottom 5 of 22 types of recreation ranked in order of desirability, and were the only two categories in which there were fewer respondents who desired the activity than currently participated in those activities in the study area. Specifically, only 15.9% of the respondents believed canoeing and kayaking were desirable in the study area, yet 25.4% canoed or kayaked in that same portion of the river. Similarly, only 4.8% of the respondents thought that bicycling was a desirable type of recreation along the river in the study area, yet 7.6% of the respondents bicycled in the same area.

Current Recreation Activities
on Penobscot River

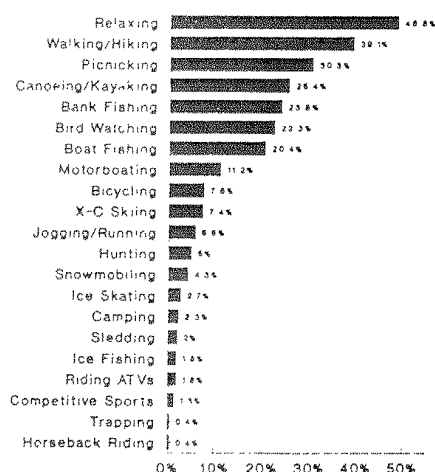


Figure 1. Current recreation on the Penobscot River.

How Do People Want To Use The River?

To determine the desirability of those same 22 recreational activities for the study area, respondents were asked to rate the activities on a scale ranging from extremely desirable to not very desirable. We combined the "extremely desirable" and "quite desirable" responses to produce the percentages shown in Figure 2. In signifying their desires, the respondents again showed a definite preference for using the area near the river to relax or to walk or hike. The number of respondents who would like to have motorboating opportunities on the Penobscot River represents a six-fold increase over current motorboat use. The desires for picnicking and fishing opportunities are double the rates of current participation. About two-fifths of the respondents would like to use the area near the river for bird watching, horseback riding, cross-country skiing, motorcycling, and jogging or running. Currently, opportunities for cross-country skiing and jogging or running are limited, and opportunities for horseback riding and motorcycling are almost nonexistent.

Ranked Desirability of Recreation
on the Penobscot River

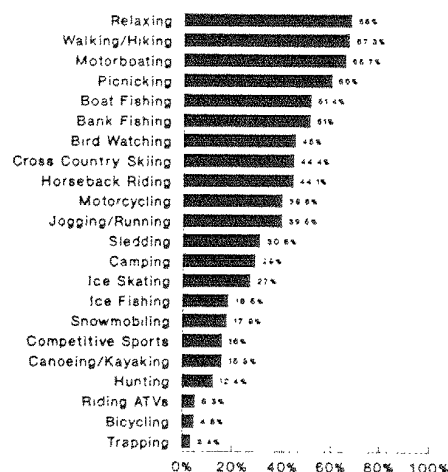


Figure 2. Ranked desirability of recreation on the Penobscot River.

What Constraints Limit Participation In River Recreation?
Constraints to recreation in the study area, listed in Table 2, are ranked according to significance as indicated by respondents.

Table 2. Constraints to Penobscot River recreation.

Category	Percent
Don't know what's available	52.3
Lack of access	50.0
Not enough free time	50.2
Programs, etc. not available	48.4
Not sure how to use resources	40.7
Work is main priority	33.6
Too much litter	26.4
Too many family obligations	25.8
Not enough money	25.5
Family & friends limit me	19.9
Don't feel safe	19.8
Don't feel like doing anything	19.5
No one to do things with	15.0
Location not appealing	13.2
River recreation not appealing	12.7
Don't have the physical skills	12.4
Not fit enough	10.2
Don't like people who go there	5.0

Constraints to recreation are a key issue in this study because two-thirds of the constraints identified can be addressed by management. Additionally, constraints are interrelated to other key issues identified above. One example: How do people want to use the river? Half the respondents indicated that they do not know what is available and that programs and facilities are not available. Another 40% are not sure how to use the resources that are available. Still others report they either are not fit enough or do not have the physical skills to use the river. Another example: How does access affect recreation? Half the respondents indicated that lack of access limits their recreational use of the river. A third example: What adds to or detracts from the quality of a recreation experience? Respondents also noted constraints such as too much litter, not feeling safe, unappealing locations, and finding river recreation unappealing. Management can address the constraints through informational and educational means, proper facility design, maintenance, and security. Efforts geared toward providing high quality recreation experiences help give appeal to river recreation.

How Does Access Affect Recreation?

The issue of how access affects recreation is graphically displayed in Figures 3 and 4. These two figures take on increased emphasis in light of the fact that over 50% of the respondents identified lack of access as a leading constraint. Just under 57% believe access in the study area is fair to very poor, indicating that a fair access rating is considered by many as constraint. Forty-seven percent of the respondents thought that their recreation would increase at least some, to perhaps a great deal, if access were improved.

Because of three existing dams, the remnants of one dam, and a natural ledge obstruction on the main stem of the Penobscot River, the study area is somewhat segmented. When we examined previous studies, we found that field data on actual river use showed heavier use in segments where access was good, and almost no use in segments where access was poor. In response, additional access in the form of new boat launching facilities, purchases of undeveloped land (subsequently donated to a local land trust organization), and conservation easements in the riparian zone has been provided by the local utility.

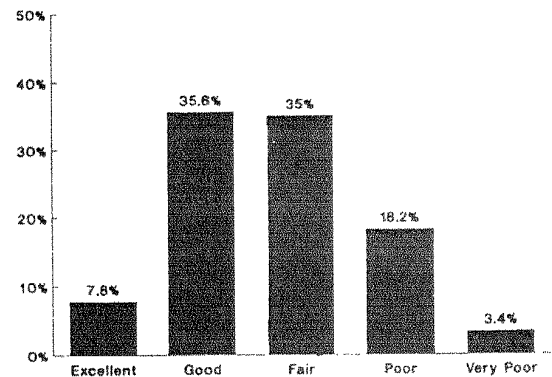


Figure 3. Recreation access rating.

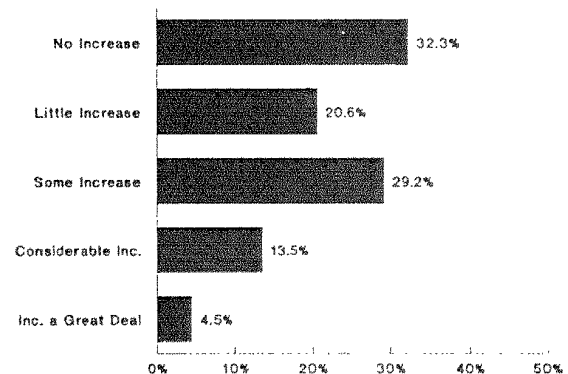


Figure 4. Recreation use if access improved.

What Adds to or Detracts from the Quality of a Recreation Experience?

Figures 5 and 6 show what adds to or detracts from respondents' recreation experiences. The opportunity to observe or interact with wildlife is valued by respondents as indicated in several portions of the survey. In particular, a person can see or encounter bald eagles, osprey, waterfowl, moose, black bear, migrating Atlantic Salmon, muskrats, beaver, raccoons, etc. Of importance to managers are the conflicting factors that affect the quality of a recreation experience. For example, domestic animals add to the recreation experience for some respondents, and detract from the experience for others. Likewise, meeting other groups of people has a positive effect for some and a negative effect for others.

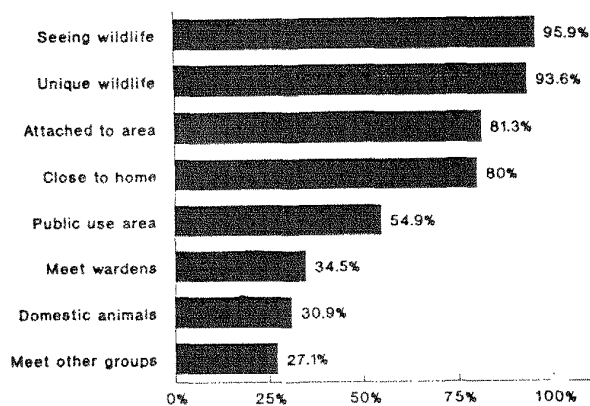


Figure 5. Adds to quality of experience.

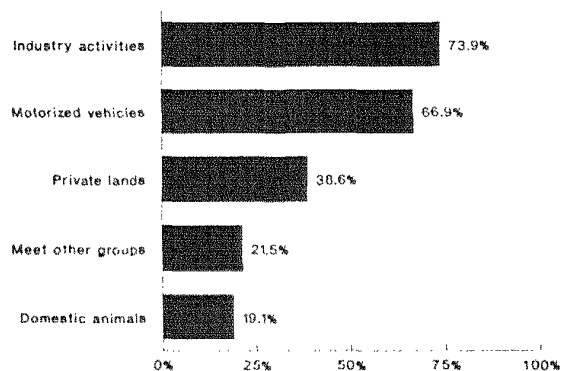
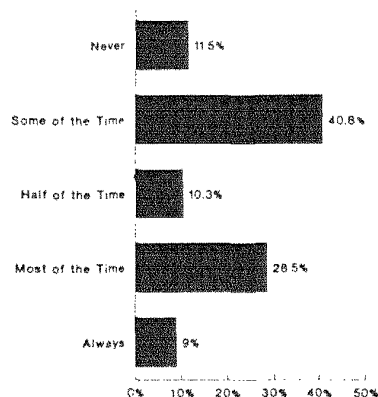


Figure 6. Detracts from quality of experience.

A pertinent question for managers is: Can the study area provide high quality recreation? The results of the survey (Figure 7) show that a high quality recreation experience is an attainable goal.



Note: excludes those who said they never use river.

Figure 7. Frequency of high quality recreation experience.

What Potential Recreation Opportunities Exist?

Various groups in the region have proposed facilities such as visitor centers and trail systems. In reviewing visitor center attributes important to respondents (Table 3), we noted again the importance of wildlife, the importance of preferred activities such as picnicking, and the importance of information. It is possible to locate visitor centers near undeveloped areas that have abundant wildlife. At least one location in the study area could include a fish-viewing window, enabling people to watch migrating species such as Atlantic Salmon, eels, and alewives, or resident species such as bass and pickerel.

Table 3. Preferred visitor center attributes.

Visitor Center Attributes	Percent
Wildlife areas	74.3
Picnic areas	67.8
Information panels	61.7
Historic artifacts	55.5
Brochures	53.7
Fish viewing window	50.3
Playgrounds	48.9
Dioramas	44.1
Hands-on displays	34.6
Video displays	33.1
Interactive displays	30.7
Bookstore	30.0
Slideshows	28.0
Gift shops	18.5
Commercial & industrial tours	18.3
Cafeteria	17.5

Trail attributes preferred by respondents (Table 4), show preferences for things that would enhance interaction with wildlife -- a top priority among respondents throughout the survey -- and for things that would provide information, such as signs and brochures. Additionally, it is interesting to note that although very few respondents felt that canoeing (15.9%) and bicycling (4.8%) were currently desirable, almost 60% preferred those activities when associated with a trail system.

Table 4. Preferred trail attributes.

Trail Attributes	Percent
River views	86.4
Limited access	82.7
Through forests	80.0
Wildflowers	75.3
Loop trails	72.7
Away from neighborhoods	71.3
Solitude	70.1
Vista areas	63.4
Nature descriptions	61.6
Picnic areas	59.2
Directional signs	58.9
Brochures	58.7
Restrooms	58.6
Canoe access	57.9
Designated bike trails	56.4
Through open areas	49.5
Patrolled trails	43.7
Long trails	39.2
Natural trails	27.7
Near roads	18.8
Manicured lawns	12.5

Management Implications

- 1) Baseline studies now exist.
- 2) Baseline studies identify constraints that can be addressed.
- 3) Incompatible uses should be identified.
- 4) Multiple areas versus multiple-use areas should be considered.
- 5) Private sector funding may be available for studies.

Literature Cited

Dillman, D. A. 1978. Mail and Telephone Surveys. New York, NY: Wiley and Sons.

Tynon, J. F.; Fusselman, M. J. 1994. Penobscot River Recreation Study. Orono, ME: University of Maine, Maine Agricultural and Forest Experiment Station. Miscellaneous Report No. 381.