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Pre-impoundment Boating Activity in the Saylorville Reservoir Area¹

RICHARD E. LENNING²

Abstract. Studies of pre-impoundment boating activity were made in the Saylorville reservoir area, Polk County, Iowa, from June 1968 to December 1969. The peak period of boating on the Des Moines River in the area occurred in August and September, but because of low water, flat-bottomed boats and canoes made up about 78% (392 of 506) of river craft seen. An increase in large pleasure boats was observed during high river flow in early summer 1969. Most boating took place on weekend and holiday afternoons. Most boaters and canoeists had at least a high-school education, reported incomes of over \$7000, and participated as members of 1- or 2-family groups, plus friends. Most of them visited the area either 2 or 3 times or 5 or 6 times per year. Boating and canoeing were common in conjunction with other activities. Many canoeists were young people from summer camps located 14 to 18 mile upstream near Madrid and Boone. Overall use of the area by boaters and canoeists was light.

Recreation use patterns in the proposed Saylorville reservoir area along the Des Moines River in Polk County, Iowa, were studied from June 1968 to December 1969. Current data on waterfowl and recreation use patterns under preimpoundment conditions was collected to provide baseline information against which to weigh future changes in recreation use and waterfowl abundance in the area. A need exists for such baseline work to serve as a starting point for the measurement of long-term effects of water resources development. This information will be helpful in planning future recreation developments in the area. Current emphasis on urban recreation makes the study important because it has described urban recreation use of a readily accessible undeveloped river setting. Some of the main goals of the study were to describe the characteristics of the users of the area, the outdoor activities they preferred, and the activities they actually pursued. This paper, however, will discuss only the part of the study that concerned canoeing and boating use of the area under existing free-flowing water levels and limited access areas.

METHODS

Automatic time-lapse movie cameras, recreation questionnaires, and direct observation were used to study recreational use patterns.

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Table 1. Monthly distribution of boat sightings recorded by the automatic time-lapse movie cameras from July to December 1968 and from May to December 1969.

Month	Total boat sightings			Hours of coverage	Average sightings/camera hour	Average monthly daylength	Average number sightings per day (calculated)
	Canoes	Pleasure	Fishing				
May	15	43	6	460	.139	13.5	1.88
June	6	11	0	338	.050	14.5	.73
July	12	42	27	848	.096	14.5	1.39
August	16	12	116	999	.144	14.75	2.12
September	63	3	92	825	.192	12.5	2.4
October	24	3	8	733	.048	11	.53
November	4	0	1	516	.010	10.5	.11
December	0	0	0	137	0	9.3	0
	<u>140</u>	<u>114</u>	<u>250</u>				

The cameras used, as previously described by Sohn¹, were designed to expose one frame of Super-8 movie film at 5-minute intervals. We believe that the cameras, placed below bridge sites, when in operation, recorded almost all boating activity on the river areas viewed because each camera viewed approximately 1/3 mile of river, and boat travel time through these areas required approximately 5 minutes, the interval between pictures. Camera coverage varied from month to month during the study because of mechanical failure, high flood waters, and vandalism; thus, boat sighting data had to be expanded to a comparable basis and expressed as an index calculated as: (Total boat sightings per month) \times (Average day length per month) \div (Total hours of observation per month).

Information on boating and canoeing was also obtained by studying questionnaires of respondents who indicated boating or canoeing as their first or second choices of preferred activity in the Saylorville area. The questionnaires included questions about age, education, distance of residence from Saylorville, number of annual visits, length of visit, and group make-up.

The study area was sampled randomly by units, each according to the type of activity for which each unit was most suited. All recreation activities observed during sampling visits were recorded as participant-hours of activity and as taking place within the area and time that the interview or recreational sighting was made.

RESULTS

Automatic cameras. September, August, and July, respectively, were months with greatest boating rates (Table 1). Motorized pleasure boating occurred during moderate-to-high spring and early summer water levels, but fishing boats and canoes were on the river during more normal conditions. Almost all fishing boat activity was correlated with catfishing activity, with many boats present when catfish were biting in August and September.

Boating patterns varied according to the area in which the camera was placed. The camera near Jester Park was operated south of the park in 1968 and north of the park at another site in 1969 (Fig. 1). There was a peak of boating in the morning at the 1968 camera site, but the 1969 camera data showed a midafternoon peak in boating activity (Fig. 2). Sandbars and adjacent parking areas in the park served as a forenoon starting point for trips downstream to Des Moines and an afternoon finishing point for boaters or canoeists who earlier started trips upstream near Madrid or Boone. In 1969, the Corydon bridge camera recorded both a morn-

¹Arnold J. Sohn. 1968. Competitive recreational uses of selected Iowa lakes. Unpublished M.S. Thesis. Iowa State University Library. Ames, Iowa.

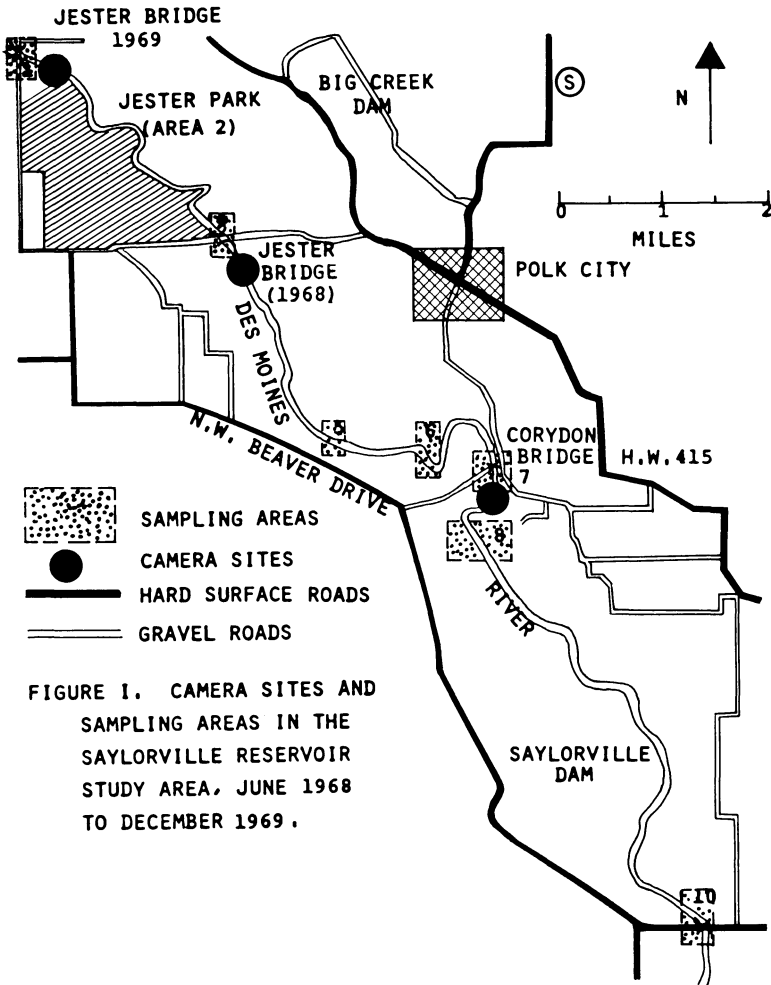


FIGURE 1. CAMERA SITES AND SAMPLING AREAS IN THE SAYLORVILLE RESERVOIR STUDY AREA, JUNE 1968 TO DECEMBER 1969 .

ing and afternoon peak in boating. The morning peak involved local fishing activity; the afternoon peak reflected activity of boaters traveling through the area from trips upriver. Most boating and canoeing occurred on weekends (Fig. 3).

Recreation questionnaire. The questionnaire, as did camera sightings, indicated that boating and fishing activities are closely related. Of the 58 people who indicated boating as their second choice of activity, 48 people reported fishing as their first choice of activity. The 21 people who chose boating as their first choice of activity participated with family groups plus friends, and 48% (10) were between the ages of 42 and 50. The people choosing boating

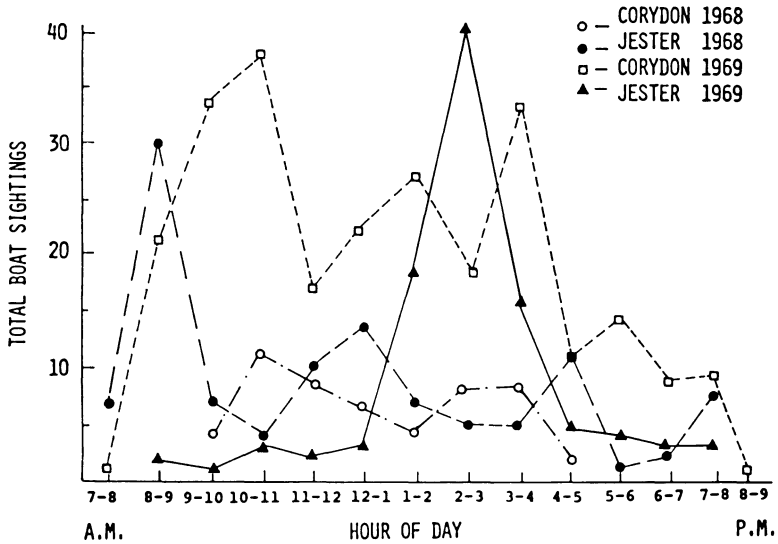


Figure 2. Hourly distribution of boat sightings as recorded by automatic movie cameras at various bridge sites in the Saylorville area, July to December 1968 and May to December 1969.

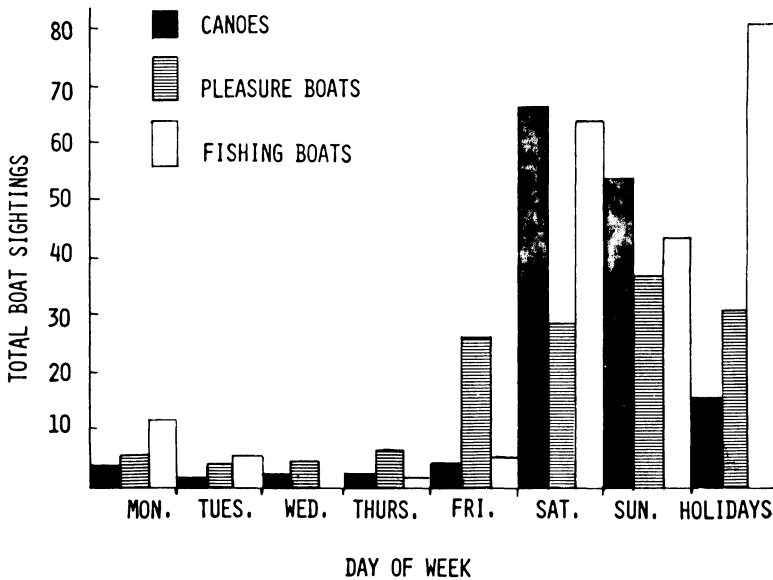


Figure 3. Daily distribution of boat sightings by automatic cameras in the Saylorville study area, July to December 1968 and May to December 1969.

Table 2. Monthly distribution of hours of observed boating and canoeing activity found in the Saylorville study area, from June 1968-December 1969.

Month	Sampling hours in each month	Canoeing			Boating		
		Observed hours	Participants	Observed hours of activity per hour of observation	Observed hours	Participants	Observed hours of activity per hour of observation
April	28	10	2	.36	0	0	2
May	95	104	13	1.47	246	77	2.59
June	179	156	31	.87	394	109	2.20
July	221	467	72	2.12	178	59	.805
August	259	106	17	.41	295	83	1.14
September	167	421	57	2.52	242	56	1.45
October	74	0	0	0.0	4	1	.054
	<u>1023</u>	<u>1246</u>	<u>192</u>		<u>1359</u>	<u>385</u>	

Table 3. Daily distribution of observed hours of canoeing and boating activity in the Saylorville study area from June 1968 to December 1969.

Day of week	Sampling hours on each week	Observed hours of canoeing	Observed hours of boating	Hours of canoeing/ hours of observations	Hours of boating/ hours observation
Monday	128	72	126	.56	.99
Tuesday	170	0	37	0	.22
Wednesday	158	20	108	.13	.68
Thursday	156	180	58	1.15	.37
Friday	163	81	165	.49	1.01
Saturday	251	99	291	.40	1.16
Sunday	194	81	568	4.2	2.94
	<u>1220</u>	<u>1246</u>	<u>1359</u>		

as a second choice also participated with family groups, but some (32 of 58) indicated that they participated with friends or alone. Only 19% (11 of 58) were between the ages of 42 and 50. People whose first activity choice was boating did not indicate participation in other recreation activities in the Saylorville area. In contrast, people who chose boating as a second activity said that they participated in several activities other than boating.

Most boaters (73%) had at least a high-school education, and 76% reported incomes of over \$7000. Few boaters traveled more than 20 miles to visit the area. Most boaters visited the area 2 or 3 times per year, or 5 or 6 times per year. Forty-two of 79 boaters stayed from 3 to 6 hours per trip, while 15 boaters stayed from 1 to 3 hours or from 6 to 12 hours. Of all boaters interviewed, 39.4% were interviewed on weekdays, 57.5% on weekends, and 3.4% on holidays. Most motorized pleasure boating started shortly before noon, while boating associated with fishing occurred in the early morning and evening.

Although the cameras recorded many canoes, few canoeists were available for interviewing. Only 12 people indicated canoeing as their first choice of recreation. Six respondents were between 40 and 46 years of age. Most canoeists came from within 20 miles of the area and indicated that they participated on weekends as members of a family group, plus friends, or with friends only. Most canoeists indicated that their trips started after 12 noon and lasted 3 to 6 hours. All canoeists had at least a high-school education, and usually made 3 or 4 trips to the area between May and October.

Direct observation. During the 2 years of the study, 1463 hours were spent observing recreation activity on various sites in the study area. Camping, fishing, boating, motorcycling, and canoeing, respectively, showed highest totals of observed participant-hours. May and June were peak months for boating, but canoeing was at a peak in July and September (Table 2). Highest rates of boating and canoeing were observed on Sundays (Table 3). Canoeing trips averaged 6.5 hours, and boating trips last 3.5 hours. Canoeing time between access sites varied from 2 to 4 hours, but additional time usually was taken for fishing or picnicking activities along the way. Many canoeists were teenagers from Boy Scout and Salvation Army camps and the Iowa 4-H Camp located upstream near Boone. At least two scout troops and an Indian Guide YMCA group from Des Moines made annual trips through the area.

CONCLUSIONS

Motorized pleasure craft, fishing boats, and canoes were observed. Pleasure boaters were limited by low water levels and were

restricted primarily to spring and early summer boating periods. Canoeists and fishermen with boats (most popular type of boating), however, had greater seasonal latitude and favored late-summer and fall boating periods. Limited access sites for boaters posed a problem, and areas of boating concentration occurred near access sites at Jester Park and sampling area 10. Boating was common in conjunction with other activities, such as fishing and camping.

The undeveloped Saylorville area now is serving urban Polk County as a day-use area, featuring such activities as fishing, motor-cycling, and limited pleasure boating. Over-all recreational use, particularly boating and canoeing, was light. High water levels in 1969 and the resulting increase in pleasure boating observed indicates that the Saylorville impoundment, when completed in 1974, will receive heavy use by that type of boater. Competition and possible conflict between boaters, canoeists, and fishermen may occur in the new impoundment, but probably can be alleviated by providing adequate access areas for fishermen below the impoundment and by reserving the proposed Big Creek Lake near Polk City for unmotorized craft.

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