

ECOLOGY OF RIVER OTTERS IN GRAND TETON NATIONAL PARK

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Objectives

Obtaining additional information on populations, movements, activity patterns and habitat preferences are the main goals of this study. Special efforts were made to try to round out an understanding of the nocturnal phase of an otter's 24-hour activity cycle.

Methods

As in previous seasons, the great majority of information on otters is obtained by direct observations of animals from canoe and boat. In 1986, otters occurring between Jackson Lake Dam and Deadman's Bar were monitored to allow comparison with data from the two preceding years. I also decided to monitor the 11-mile stretch of the Snake River from Flagg Ranch to the north end of Jackson Lake, rather than the Deadman's Bar to Moose section, in response to reports of several observers and at the suggestion of Director Kenneth L. Diem. The tallies of sightings by boatmen from Jackson Lake Lodge on the lower stretch and by boatman Jim Lawlor on the upper one were indispensable to the estimates of population density and particularly to evaluation of habitat preference on the lower one.

Indirect observations were made by means of automatic cameras set along trails and sites used by otters. The photographs identified the subjects, a clock in the field of view recorded times of passage.

Results

My efficiency in observing otters was extremely low in 1986. In the June 30-July 27 period I saw otters for only about one hour although I was in otter habitat for approximately 60 hours, an efficiency of less than 2%. In the past I have viewed my field efficiency as a crude index to relative abundance of otters. However, its low value this season is more likely a reflection of sampling error than decline in otter density. The efficiency of the Jackson Lake Lodge boatmen, in terms of otters seen per 100 hours afloat for the same period, was 3.9, essentially the same as it was during July of 1985. Therefore, it seems reasonable to assume that density of otters did not change significantly on the lower section. On the other hand, the efficiency of sightings by boatmen floating between Flagg Ranch and the north end of Jackson Lake (an equal

length of stream) was 30, almost eight times as high. This probably indicates a significantly higher density of otters, as revealed in part by an average group size of three otters on this section and two on the lower section. But it may also be a reflection of the fact that boat traffic on the upper section of the river is only 15% as heavy as on the lower section, a difference that would be expected to affect shyness of otters.

Of the 15 shoreline habitats recognized on the Pacific Creek to Deadman's Bar section, 8 were observed to be used by otters. These eight account for over three-fourths of habitat available, but vary markedly in relative extent, as shown in Figure 1. Although habitats known to be used in 1986 did not coincide exactly with those documented in 1984 and 1985, the overall pattern was very similar. The two most noteworthy features in common with previous seasons were highest preference for the least available habitat, logs and beaver lodges, and lowest preference of the most available habitat, gravel beach. See Figure 2. The indices of habitat preference used in this figure were derived by calculating the ratio of sightings in each habitat to absolute availability of each habitat.

Four automatic cameras monitored otter trails or use-sites for a total of 624 hours and recorded passages by otters nine times, coyotes four times, a dog once and a fisherman once. Daytime passages were: 6:00, 6:30, and 8:00 a.m. and 7:00 and 8:30 p.m. Night-time passages were: 9:00 p.m. and 1:00, 3:00 and 5:00 a.m. These nine otter passages double the success ratio of 1985 and document a range of nocturnal activity. Unfortunately, they are quite inadequate for defining any definite pattern.

Conclusions

The density of otters in the study area was assumed to be approximately as high as in the two previous seasons. The 11-mile section of the Snake River from Flagg Ranch to Jackson Lake had a higher density of otters than did the equivalent extent of river from Pacific Creek to Deadman's Bar, but several variables confound attempts to estimate relative densities. The overall mean size of otter groups was approximately 2.5, indicating the coherence of family units during the summer. The strong preference for logs (singly or in jams) and beaver lodge habitat demonstrated the two previous seasons was again documented in 1986. This suggests that artificial habitat improvement along a given section of the Snake River might be easy to achieve by selectively felling trees to lie partly submerged in the water. Documentation of otter traffic by means of time-recording cameras suggested that otters are about as active by night as by day. However, it is obvious that more sets and longer periods of monitoring at each set are required to obtain adequate data. I thank the staff of the UW-NPS Research Center, Brent Penfold and boatmen at Jackson Lake Lodge and boatman Jim Lawlor for use of facilities and direct contributions.

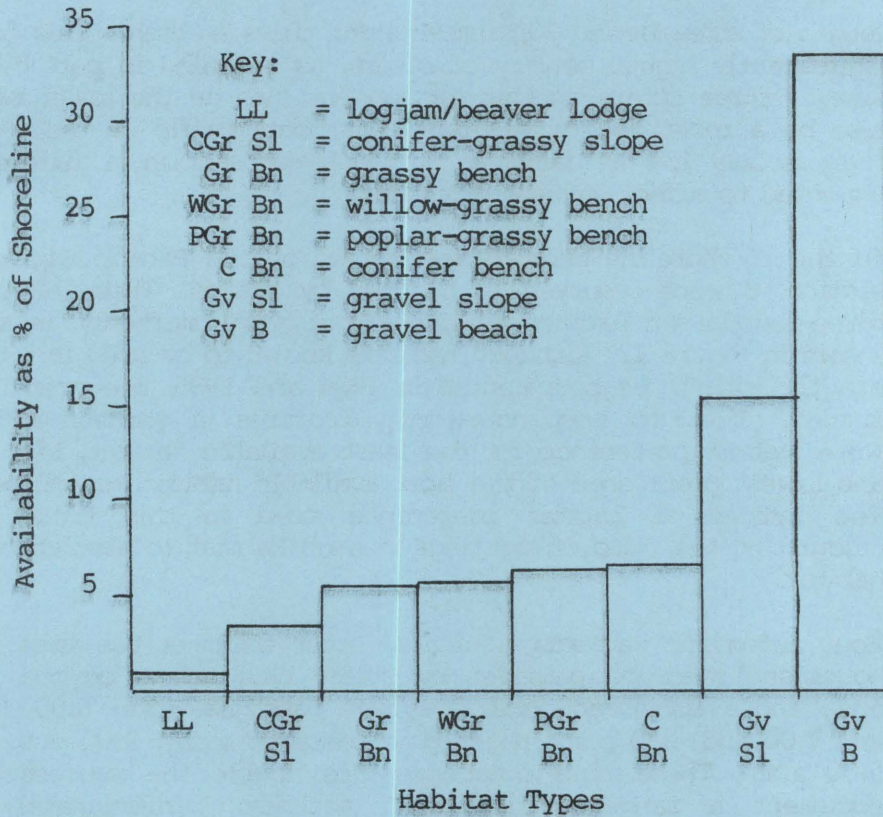


Figure 1. Availability of eight shoreline habitat types between Pacific Creek and Deadman's Bar.

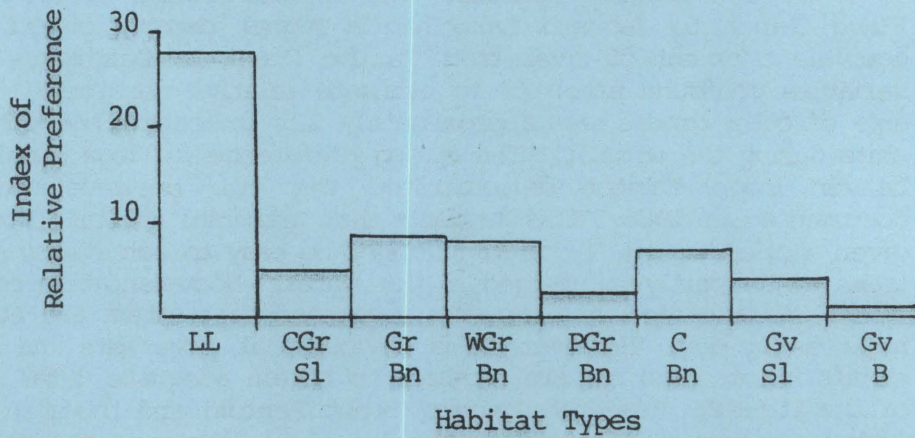


Figure 2. Relative preferences for habitat types shown in Fig. 1.