

ECOLOGICAL STUDY OF RIVER OTTERS IN GRAND TETON
NATIONAL PARK

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Objectives

The objectives of this study are to obtain information about habitat preferences, movements, activity patterns, social interactions, distribution and density of otters within the park, primarily on the Snake River between the Jackson Lake Dam and Moose. This type of information is valuable as a basis of comparison with what is known about otters elsewhere and also could guide the National Park Service in altering policies or managing habitats to the benefit of otters, should this be desired in the future.

Methods

In the 1984 season, some old methods were continued and some new ones initiated. Among the former were the intensive monitoring of the river from the Old Research Station to the Oxbow, on foot and by canoe. This effort was designed to aid in making an estimate of how many otters were living in the vicinity of the Oxbow and what specific sites were favored. As in the past two seasons, I solicited the cooperation of boatmen leading excursions from Pacific Creek junction to Moose to record otter sightings. These records yielded documentation of size of otter groups, a rough index to density and indicated which habitats were used. The cooperation of boatmen of Barker-Ewing Float Trips, Triangle-X Float Trips, Jackson Lake Lodge and the River Patrol of the National Park Service is gratefully acknowledged. In addition, I canoed the river from the Oxbow to RKO Road Landing by myself on numerous occasions to look for otter sign and to field-check shoreline habitat. A classification of this habitat by reference to stereo-pairs of infra-red aerial photographs, available through the courtesy of the Research Center, was one innovation this season. Comparison of the relative availability of various habitats with the specific sites where otters were observed by the boatmen was the basis for drawing conclusions on habitat preferences of otters. Another innovation was an attempt to document nocturnal activity of otters by means of automatic camera units. Each unit consists of a disc camera adapted for solenoid operation, a battery power-supply and a treadle-switch concealed where otters were likely to pass. The donation of disc cameras and the advice on technical problems by the Eastman Kodak Company were invaluable in constructing the units.

Results

Otters were sighted with an efficiency of 12% in the 1984 season. This is twice

the efficiency of observations in 1983 but less than half of that in 1982. In the vicinity of the Oxbow, observations revealed three groupings of otters to be fairly regular occupants, all three occurring there simultaneously one day. One group consisted of an adult and two juveniles, a second consisted of an adult and a juvenile and a lone otter made up the third "group". A bivouac area, shielded by willows in the northwest corner of the Oxbow, and the beaver lodge on the southeastern tip were especially favored, as might have been predicted from previous observations there. The density of otters in the Oxbow is thought to have increased slightly over that in 1983.

The density of otter occurring from Pacific Creek to Moose is difficult to estimate with the data from boatmen's sightings but probably consisted of from 10 to 15 individuals plus occasional transients. There is a bimodal pattern to frequency of groupings encountered, trios (13 sightings) and lone otters (11 sightings) being commonest, as in 1983. A total of 33 sightings were reported, including a single observation of a group of seven otters and one of six otters.

Circumstantial evidence, especially in 1982, had indicated that the maximum rate of movement actually recorded, 1.25 miles per hour, must be well below that exhibited by an otter intent on going from one general area to another. This was documented in 1984 when a lone otter was followed as it traveled from the northwestern corner of the Oxbow to about 100 meters downriver from the Pacific Creek landing on September 10. The distance of 3 miles was covered in 1.6 hours, a mean rate of 1.8 miles per hour, 4.5 times the mean rate of movement for routine activity.

The original classification system of shoreline habitats between Pacific Creek landing and Moose consisted of 20 categories, later condensed to 14. They were designated according to three topographic types: beach, bank and bench, in combination with six substrate types: gravel, logs, grass, willow, poplar and conifer. Otters were observed at only seven of the 14 habitat types. Although five sightings were made at the most popular habitat (logs) and only one was made at the least popular of habitats used (gravel beach), the relative availability of these two differed so markedly that the 5:1 ratio of sightings is not a realistic index to true relative preferences. When account is taken that over one-third the shoreline habitat is gravel beach and only 1% is logs, the preference ratio climbs dramatically to well over 100:1. The small sample size of sightings does not allow one to have confidence in a specific ratio but comparison of distribution of sightings with the distribution of habitats does show a very strong preference for logs. This habitat, often associated with beaver lodges, was next-to-least available. Conifer-bank was slightly less available. Habitats used less often than logs but more often than gravel beach were: conifer-bank, conifer-grass-bench, grassy-bench, gravel bank and conifer-grass-bank.

The first photographic activity-recorder was set up on August 15 in an inlet of Heron Island in the Oxbow at a site where otters had been observed August 13. It was removed three weeks later after being disabled once by mice gnawing through wire and once by flooding. No records were obtained. Several attempts were made to improve on the treadle-switch and a modified unit was set near the bivouac site in the northwestern corner of the Oxbow the afternoon of

September 13. That night it recorded the passage of a single otter at 7:30 p.m. Although this is a disappointing result for an entire season, it does show promise for obtaining the type of data for which the units were designed.

Conclusions

Increased efficiency in observing otters, more recognizable otters seen in the Oxbow area and more sightings by boatmen below Pacific Creek all indicated a modest increase in density of otters compared to the previous season. Trios and lone individuals were the two commonest social units, as they were in 1983. Log-piles, including those associated with beaver lodges, were shown to be the most preferred habitat-type when habitat availability was compared to sites of observation. The margin of preference, although not documented with precision, is felt to be very wide. Much time was lost in trouble-shooting the photographic activity-monitors but their potential was well demonstrated.