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**THE RIVER OTTER LIVE CAPTURE PROGRAM IN ONTARIO, CANADA**

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The Ontario Ministry of Natural Resources (OMNR) initiated a project to live-trap river otter (*Lutra canadensis canadensis*) in 1984. This program began as a result of an exchange of wildlife between the State of Missouri and the Province of Ontario. Ontario was to provide Missouri with 14 river otter in exchange for eastern wild turkeys (*Meleagris gallopavo silvestris*).

In the spring and summer of 1964 preparations for the live capture and transport of the otters were made. In order to implement this program successfully, it was necessary to review the literature concerning the behaviour and the ecology of river otter, as well as methods for trapping, holding and transporting of these animals.

River otters in Ontario have been observed mating in April (Hickey, pers. comm.), soon after the birth of the litter. In captivity, the pups and the female stay within the natal den for approximately three months until the young are weaned (Carnio, pers. comm.). Thus, live-trapping could begin in the early fall (at the beginning of October and continue through until freeze-up in early December) knowing that any young caught then could survive independent of the female.

Hancock live beaver traps (Hancock Live Trap Co., Hot Springs, South Dakota) modified to capture river otter had been used successfully in a number of locations including: Idaho (Melquist and Hornocker, 1979), Alaska (Woolington, pers. comm.), British Columbia (Stenson, pers. comm.), Alberta (Reid, pers. comm.), and Newfoundland (Northcott and Slade, 1976). A similar type of trap, known as a Bailey trap, had been utilized in Ontario in the 1960's with some success. OMNR had some Bailey and Hancock traps which were being used to trap nuisance beaver. Both Hancock and Bailey traps are set so that when closed, the trapped animals are partly out of the water and thereby avoid drowning. The Hancock trap has one stationary flat side and one concave strike-up side, whereas the Bailey trap has two moving sides. Since other researchers had success with the Hancock trap and the condition of animals being captured in these traps was known to be very good, the majority of traps used for this project were large suitcase-like Hancock traps. Modifications were similar to those made by other researchers (Northcott and Slade, 1976; Melquist and Hornocker, 1979; Buech, 1983) and included extending the trigger plate, and in the case of the Hancock trap, wiring the bottom edge of the trap as well as rewiring the stationary flat side so animals could not escape.

Traps were positioned in small streams in what was considered to be good otter habitat, with the trigger places situated just under the water level. Bailey traps were set in the water with both sides open, totally concealing the whole trap under water. Hancock traps only had one side in the water with the stationary flat side staked up against the bank and camouflaged with dry grasses.

It was decided that otters would be held temporarily in captivity as an acclimation period before shipment, since shipping by commercial air over international borders may subject animals to extended periods of stress. In addition, other researchers have successfully held otter in captivity (Best, 1962; Chanln, 1985; Jalkotzy, pers. comm.; Savin, pers. comm.). Two major holding facilities were utilized. One was modified from an existing pen (9.1m long and 6.1m wide) formerly used to hold otter or bear (*Ursus americanus*), and consisted of a cement floor, tin roof, and chain-link fence walls supported by angle iron posts. Access to the pen was by way of a large chain-link walk in door. This pen was equipped with a large cattle trough, hay for bedding, and several metal den boxes which later served as transport or shipping boxes. Den boxes were specially designed of sheet metal with one end equipped with a vertically sliding door and the other of wire mesh. Other sources of ventilation included small

holes punched around the upper sides of the box. A food and water dish was attached to one corner of each shipping container and two carrying handles were welded to the top. The trough was regularly filled with clean water which was circulated by a sump-pump to prevent freeze up during cold weather. The other holding facility was situated at the edge of a river with the floor, walls and ceiling all being composed of chain-link fencing. One section of the pen was positioned on the bank of the river and covered with tarpaulin, whereas the remainder of the pen was submerged in the water. This allowed the animals to swim and drink and then dry off on the bank. Den boxes were placed on the bank, straw was used as bedding material and a sump-pump kept water open in the enclosed section of water in cold weather. This pen was similar to a soft release pen constructed and used by researchers in Alberta for otter reintroduction (Jalkotzy, pers. comm.).

In order to prevent any possible outbreak of Salmonella poisoning while in captivity, all animals in the last two years of the project were injected intramuscularly upon capture with a long-lasting antibiotic (Longicil), in a dose range of 0.5cc for a juvenile animal and up to 2.0cc for an adult. In addition, a broad spectrum antibiotic, Amoxicillin was added to the food. While in the holding pen, otters were fed white suckers (*Catostomas commersoni*), white fish (*Coregonus clupeaformis*), ling cod (*Lota lota*), ciscoes (*Coregonus artedii*) and sometimes ground beef. Yogurt and a powdered multivitamin supplement were mixed in with the ground beef, or injected into the body cavity of previously frozen fish. Yogurt is known to prevent gastroenteritis problems in otters held in captivity (Jalkotzy, pers. comm.).

Initially, local trappers in five different locations in the province were involved in the program. These areas included the Chapleau Algonquin Park, Bancroft, Tweed, and Pembroke OMNR Districts (Figure 1).



**Figure 1: Otter Trapping Locations**

In 1985 and 1986 an otter biologist with live-trapping experience was hired, in addition to enlisting local help. Financial assistance was received from the Wild Turkey Trust Fund administered by the

Ontario Federation of Anglers and Hunters. In 1986 the trapping efforts were financed primarily through the same trust fund. Workshops outlining the logistics and general procedures involved were conducted for local trappers. The importance of checking live traps at least once a day was emphasized. The average number of recorded trap nights required to capture one otter in Algonquin Park was 122.

Results of the trapping efforts over the last few years are summarised in Table 1. Traps containing river otter were removed from the water as soon as possible, wired shut to prevent the escape of the animal and placed on dry ground. The trapped animals were provided with burlap material that they could use to dry themselves on. Additional burlap material was loosely covered over the outside of the trap to block out light while the animals dried off and settled down. In the event that animals continued to be restless and fight the trap, trappers were instructed how to administer an azaperone drug, Stresnil, in two intramuscular injections five minutes apart. The total dosage used was 0.3cc for juveniles and 0.5cc for adult otters. Stresnil is a tranquillizer that does not render the animal unconscious and therefore was not used as an immobilization agent. Animals were kept in a quiet, darkened area for 30 to 60 minutes before transport to a holding facility. The trap containing the otter was then placed inside the holding pen and left for several hours. This allowed for the acclimation of the animal to its surroundings, as well as enabling previously trapped otters to adjust to the newly introduced animal.

**Table 1 : Otter Live-trapping Data for Algonquin Park District, Ontario 1985 - 1986**

YEAR	TRAP TYPE	NUMBER OF OTTERS CAPTURED	NUMBER OF NON-TARGET ANIMALS CAPTURED <sup>1</sup>	NUMBER OF TRAP NIGHTS
1985	Bailey	1	5	156
	Hancock	6	12	254
1986	Bailey	0	0	164
	Hancock	3	18	645
TOTAL		10	35	1219

Average Number of trap nights to capture one animal = 122

<sup>1</sup>Most of the non-target animals captured were either Beaver (*Castor canadensis*) or Muskrat (*Ondrata zibethicus*)

Although contact with humans was minimized while otter were held in captivity, their behaviour, eating, and defecation patterns were monitored. Once a significant number of otter had been trapped or weather conditions prevented further trapping, the otters were shipped. Animals were individually assessed according to the degree of agitation displayed as to whether administration of Stresnil was required for transport. In most cases animals were transported to the United States by Ontario provincial government aircraft. This allowed a biologist to feed and water the animals when necessary and to ensure their general health and welfare.

On arrival at the reintroduction area, state biologists transferred the animals to drugging or squeeze boxes (McCullough et al., 1986). Animals were immobilized with ketamine in order to be examined, weighed, measured, sexed, and ear and web tagged (Table 2). The largest adult animal live-trapped in Ontario, weighed 9.2 kg. The average weight of adult and Juvenile females was 7.1 and 4.0 kg, respectively, whereas the average weight of adult and juvenile males was 6.4 and 3.8 kg, respectively. After drugging and handling, a recovery period of several hours was allowed and then animals were transported to the release site.

**Table 2 : Ontario River Otter Data obtained prior to Release in Missouri and Nebraska 1984 - 1986**

STATE PROVIDED TO FOR REINTRODUCTION	KETAMIN (cc)	SEX	AGE	WEIGHT (kg)	
Missouri	2.0	Female	Adult	9.2	
	1.2	Male	Adult	6.5	
	1.0	Female	Juvenile	3.9	
	1.0	Male	Juvenile	3.8	
	1.8	Male	Juvenile	*3.8	
			Female	Adult	5.9
			Male	Adult	6.5
			Female	Adult	8.2
			Female	Juvenile	4.1
			Male	Adult	6.7
			Female	Adult	7.2
			Male	Adult	7.0
			Male	Adult	6.4
	Nebraska			Female	Adult
			Female	Adult	
1.0		Male	Adult	5.4	
0.5		Female	Juvenile	4.1	

\* Mortality during handling

A total of 16 of the 18 animals captured, held and transported survived to release. One mortality took place after one day in captivity, but this particular animal was subsequently found to be only 70 per cent of the weight of other otters of similar body length. The second mortality was attributed to a possible drug overdose while being processed for release in Missouri.

In Missouri, Ontario otters were reintroduced into the Chariton River and associated wooded swamp, located in the Rebel's Cove Wildlife Area in the northeast part of the state.

In 1986, Ontario river otter were also provided to the state of Nebraska as part of a three-way wildlife exchange for Iowa wild turkeys. The otters were reintroduced into the South Loop River located in the Pressey Wildlife Area in the south central part of Nebraska.

Overall, the techniques used in the Ontario otter program were successful.

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