A Live Trapping and Handling Technique for River Otter

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Abstract: Capture and handling techniques developed by river otter (*Lutra canadensis*) trappers, were evaluated during a 3-year telemetric study in the coastal marsh of Louisiana. A modified No. 11 Victor leghold trap was found to be the most practical and efficient live trap for otters in a marsh habitat. A total of 30 otters were captured. Trap-related injuries were infrequent and not serious. Eighty-four percent of the captured otters sustained minor cuts or no injury at all. Trapped otter were handled safely and efficiently by means of a long-handled net. This handling technique was also used to handle 5 captive otter on several occasions.

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Increases in fur prices during the mid-1970s and the listing of the river otter on Appendix II of the Convention of International Trade of Endangered Species (CITES) in 1976 created a demand for more biological information on the species. Prior to 1974, much of the research on river otter dealt with food habits (Lagler and Ostenson 1942, Wilson 1954, Ryder 1955, Greer 1955, Hamilton 1961, McDaniel 1963, Sheldon and Toll 1964, Knudsen and Hale 1968). Since 1974, many studies have concentrated on population characteristics and ecology of the river otter (Tabor and Wight 1977, Lauhachinda 1978, Mowbray et al. 1979, Melquist and Hornocker 1983). Melquist and Hornocker (1979) working in Idaho were the first to examine the problem of capturing and handling otter for telemetric and related research. Robi-

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cheaux and Linscombe (1979), working with coastal furbearers, found a restraining snare to be the most efficient tool for handling all furbearers except the river otter.

In 1978, the International Association of Fish and Wildlife Agencies (IAFWA) reported 22 state agencies and 5 Canadian provinces were conducting otter research (Deems and Pursley 1978). During recent years, several states have initiated programs to restock otter. Colorado began restocking in 1976 (Harvey Donoho, pers. commun. 1981). Arizona and Missouri are currently involved in otter restocking projects.

In 1979, the Louisiana Department of Wildlife and Fisheries initiated a telemetric study of river otter activity and habitat preference in the coastal marsh of Southwest Louisiana. Live trapping and handling requirements of the study necessitated an investigation of techniques. The objective of this study was the evaluation of techniques that produce minimum stress or injury to the animal, are reasonably safe for the researcher, and are efficient in capturing and handling otter. This paper presents the results of this investigation. The manuscript was typed by M. Hebert with illustrations by J. Marte.

Methods

During the 1975–76 trapping season, the Louisiana Department of Wildlife and Fisheries began purchasing otter carcasses from trappers for a detailed life history study. Those trappers who were proficient in capturing otter were questioned concerning their trapping techniques.

Lee Roy Sevin, employed as a marsh land managed in Louisiana, has live-trapped and purchased live-trapped river otter for more than 25 years. Captured animals have been sold to zoos and, in recent years, they have been used in restocking programs in other states. The effectiveness of his techniques were evaluated by observing his operation and testing these techniques during the capture phase of our telemetric study. A radiography project requiring the handling of captive otter provided additional testing of the handling technique. Further evaluation of these techniques was accomplished by exchanging information with other wildlife biologists attempting the capture and handling of river otter.

The field work was conducted on Rockefeller Wildlife Refuge in southwestern Louisiana. The study area was classified as intermediate and brackish marsh by Chabreck and Linscombe (1978).

Capture

The leghold trap chosen for evaluation was the No. 11 Victor double longspring (Woodstream Corp., Lititz, Pennsylvania 17543). This type of trap is preferred by Louisiana trappers setting primarily for otter. Otter trappers reported that the trap held better than other kinds and Lee Roy Sevin reported minimal leg or foot damage on animals live-trapped for resale.

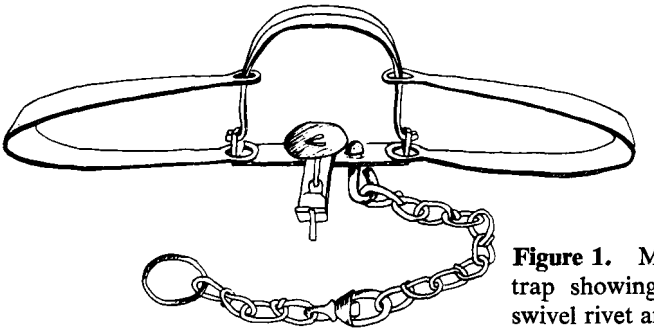

Figure 1. Modified No. 11 Victor trap showing the location of the swivel rivet and chain swivel.

Most trap-related injuries or escapes were associated with the trap becoming entangled with vegetation, allowing additional leverage for the animal to pull. In order to reduce the chance of injury or escape, several modifications were made to the No. 11 traps. Trap chains were attached by means of a swivel rivet located under the trap pan instead of on the spring. A swivel was also inserted in the chain 16 cm from the trap, allowing the trap to turn with the animal (Fig. 1). An extra length of chain was added to traps used in sets on steep banks so that trapped otter could get out of the water. Trap chain lengths varied from 60 cm to 1 m for traps used during the study. New traps with stronger springs reportedly caused more damage than 1-year-old traps. Older traps had slightly weaker springs and were used as long as they continued to close quickly. New or stored traps were degreased and allowed to weather for at least 2 weeks prior to use. Trap stakes were made from forked, weathered tree limbs with the bark removed.

Trapping sites were selected by thoroughly scouting the area beforehand. Sites such as levee crossings, haul-outs, and trails leading from 1 pond to another were checked for otter signs. At promising sites, traps were set along the water's edge in 3 to 30 cm of water where otters would be climbing out of the water. The trap stake was also located underwater near the bank but away from any vegetation that might entangle the trap. Such water sets were preferred over dry sets because they were easier and faster to set and resulted in less site disturbance.

Live traps were used in this study because of the trap success reported by Melquist and Hornocker (1979) with the Hancock trap (Hancock Live Trap Co., Hot Springs, South Dakota). The No. 208 double-door Tomahawk live trap (106.7 × 38.1 × 38.1 cm) was evaluated (Tomahawk Live Trap Co., Tomahawk, Wisconsin 54487). This trap was set in narrow runs where concealment was possible. Data on all traps were recorded and compiled during the study. Trap-related injuries were recorded as to severity of lacerations or broken bones.

Handling

The handling technique evaluated for otter was developed by Sevin and included the use of a heavy duty, long-handled net, a hook pole, a shield, and a holding cage. The net handle was made from a 2.0 m post-hole digger handle. The rim was 40.6 cm in diameter and made from a 1.3 cm diameter steel rod. The netting was made of No. 42 treated nylon cord, 40.6 cm in diameter and 1.2 m deep with 3.8 cm bar web size. A 1.2 m piece of rope was attached to the tail of the net. The hook pole was a 1.5-m-long shovel handle with a steel hook screwed into the end. The shield was a 91.4 × 91.4 cm piece of 9.5 mm thick plywood. A notch 3.8 cm wide and 12.7 cm long was cut in the center of 1 side of the shield. The holding cage was made of 2.5 cm 12-gauge plastic-coated, welded wire. The dimensions of the cage were 1.2 m long, 61.0 cm wide, and 40.6 cm high. A 25.4 × 25.4 cm doorway was cut in the center of 1 end. The overlapping door was hinged on top and measured 35.6 × 35.6 cm. A No. 10 can (3.8 liters) was secured at the end opposite the door to provide water. The use of the net, hook pole, shield, and holding cage was evaluated with all animals captured during the telemetry study. The technique was further examined with captive animals that were radiographed periodically for 3 years.

Results

Capture

Field evaluation of leghold traps began in November 1979. Traps were checked daily during early morning hours. An average of 40 traps were set and run daily during the first season of the study. During the 1979–1980 season, 680 trap nights produced 8 otter (4 females, 4 males). During the 1980–1981 season, a total of 2,150 trap nights produced 10 otter (1 female, 9 males). A total of 3,779 trap nights in the 1981–1982 season produced 12 otter (2 females, 10 males). Calculation of an overall capture rate was not meaningful because the success rate varied from year to year (log likelihood ratio test, $\chi^2 = 5.16$ with 2df, $P = 0.08$).

Trapping success increased with the onset of cooler temperatures beginning in mid-December and extending through mid-February when trapping ceased. The capture rate was greater on nights when the minimum temperature fell below 10° C (log likelihood ratio test, $\chi^2 = 10.8$ with 1df, $P = 0.01$). Only 1 otter was caught out of 1,715 trap nights when the minimum temperature was higher than 10° C.

A total of 191 trap nights with the No. 208 Tomahawk live trap failed to produce a single capture. The concealment necessary to use this trap limited the number of sites where the trap could be set. Dense marsh vegetation and the lack of elevated slides also reduced the potential use of this trap or the Hancock trap.

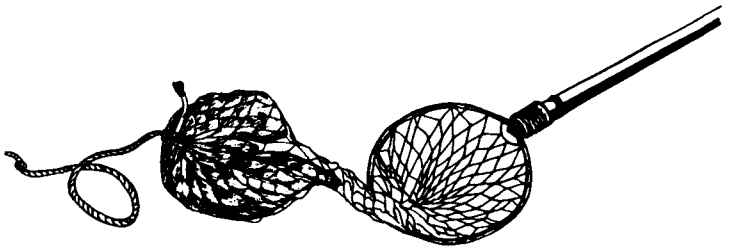

Figure 2. River otter restrained in handling net.

Handling

Once an otter was captured, it was essential to work as fast as possible to net the animal and thus prevent escape or injury. If working alone, the trapper first made ready the cage and shield and then approached the otter with the net and hook pole. The animal was scooped into the net and the net was twisted once to prevent escape. Next, the hook pole was hooked into a link of the chain close to the stake and the stake was pulled up. After the stake was removed from the chain, the net was twisted several times to further restrain the animal (Fig. 2). The otter was carefully dragged to a more suitable working area where the cage and shield had been left. The otter was allowed a little slack in the net and the notch of the shield was positioned over the trapped leg. With the shield held firmly in place, the net was untangled from the trap and the animal's foot was freed. Sometimes the trap was so tangled that the springs were difficult to compress by hand. A pair of large pliers were useful in this case. Once the trap was removed, the net was twisted several times before the shield was removed.

To transfer the otter to the cage, the rim of the net was positioned against the open doorway of the cage. The cage had to be backed up against something to prevent it from slipping while holding the net in place. Next, the tail rope of the net was used to twirl the otter and untwist the net. The net was held flush against the cage at all times. With the net untangled about it, the otter usually dashed into the cage. The net was kept over the doorway until the otter was distracted at the opposite end of the cage. The door was then closed, blocked with the foot, and secured with hog rings. The otter usually began fighting the cage at once. Several knots of rope dangling from the top of the cage provided the animal with an avenue to vent its aggression without injuring its teeth by biting at the cage. Covering the cage with a tarp often helped quiet the otter; however, adequate ventilation was essential to avoid hyperthermia.

The whole operation was expedited by having each step planned in advance and having all equipment available and ready. It was easier having 2 people working together in this endeavor, but not essential.

To administer injections to caged otter, we again used the net. To accomplish this, the above procedure was reversed. The otter was first attracted to the end of the cage opposite the door. The net was quickly positioned in front of the open door of the cage. The animal was allowed to move into the net and it was twisted closed behind him. The net was twisted tight until the otter was curled up in a tight ball. The rim of the net was then flipped back around the otter to afford additional control of the animal. The injection was then administered.

During the 3 years of the telemetry study, 30 otter were captured and handled using these techniques. Both techniques proved to be practical, efficient, and safe for the handler and the otter.

This technique was also used for handling 5 captive known-age otter. These animals were removed from a large pen, placed in a holding cage, transported, and removed from the holding cage using the same basic handling technique. These 5 animals were handled successfully a total of 34 times during the radiography project.

Injury

Anesthetized otter were examined for injuries while undergoing telemetry implant surgery. The most serious trap-related injury encountered was broken toes. Sixteen percent of the captured otter experienced a broken toe. Most had only minor skin lacerations or no injury at all. By closing across the toes of the otter, the No. 11 trap avoided serious injuries. It has been our experience that larger-jawed traps, which close higher on the leg, tend to cause injuries which are more serious. Apparently, broken or lost toes are not critical to otter. During 1980–1981 and 1981–1982 trapping seasons, 30% of the 22 otter captured showed evidence of old, completely-healed trap scars with no apparent debilitation.

Discussion

Sevin has used these techniques described for capturing and handling otter purchased from selected trappers during the open season for more than 25 years. These animals are held in captivity for a short time and then sold to a zoo or animal dealer. Prior to shipment, the animals are inspected by a veterinarian. They are usually inspected again on arrival at a zoo. Less than 10% of these animals are held back from shipment because of capture or handling injury. In the 25 years of operation, over 60 pregnant females have successfully given birth in captivity.

During the last 2 years, otter from Sevin have been used for restocking in Arizona and Missouri. The handling technique described was used by wildlife officials in both states. Reports indicate that 95% of the animals received were in good condition and the handling techniques we suggested worked

very well (John Phelps, pers. commun. and Dave Erickson, pers. commun. 1982).

Researchers in East Texas in 1982 initiated an otter telemetry study using these recommended techniques for capturing and handling. Reports indicated success and satisfaction with the methods (Michael Foy, pers. commun. 1983).

These techniques were developed by trial and error over a period of 25 years. They were evaluated by a number of biologists in several states. The results indicate these techniques offer an efficient and practical method for capturing and handling otter with minimal injury to the otter and reasonable safety for the handler. These techniques with slight modifications may be useful for other animals.

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