

EFFECTIVENESS OF LIVE-TRAPS FOR CAPTURING FURBEARERS IN A LOUISIANA COASTAL MARSH

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Abstract: The present study was conducted to evaluate the effectiveness of the Number 206 Tomahawk Live Trap for capturing coastal marsh furbearers in a simulated commercial trapping operation. Live trapping of marsh furbearers was conducted from 17 January 1976 to 16 December 1976. A total of 35,078 trap days produced 1,983 captures of which 89.9% were furbearing animals. Nutria (*Myocastor coypus*), muskrats (*Ondatra zibethicus*) and raccoons (*Procyon lotor*) comprised 91.5% of the catch of furbearing animals. Overall, the live traps caught fewer furbearers than did the leg-hold and Conibear traps evaluated in earlier studies. The live traps were found to be applicable only in specialized situations but still did not perform as well as other trap types when considering captures per 100 trap days.

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Since the beginning of the North American fur industry, trapping methods have changed very little despite attempts to develop more efficient traps. During the early 1970's, public expression concerning trapping furbearers began increasing rapidly. Traps and trapping techniques were said by some to be out of date, ineffective and even cruel. Many governmental agencies, universities, associations, and trap manufacturers began spending both time and money examining these questions (Shannon and Novak 1972, Voight 1974, Palmisano and Dupuie 1975, Linscombe 1976, Deems and Pursley 1978).

The 1,620,000 ha of Louisiana coastal wetlands are presently yielding 10 to 20 million dollars worth of raw fur annually. Nutria, muskrats, and raccoon (*Procyon lotor*) account for over 90% of the value (O'Neil and Linscombe 1977). The Louisiana fur harvest records revealed that in the 1975-76 and 1976-77 trapping seasons, nutria, muskrats and raccoons harvested in the coastal marshes yielded 10.93 and 19.75 million dollars, respectively.

McCracken and Van Cleve (1947) and Deems and Pursley (1978) indicated that Louisiana was the leading producer of wild furs in the United States. In some trapping seasons, the wild fur production in Louisiana has amounted to 65% of the total production for the nation (O'Neil and Linscombe 1977).

Although modern day trapping is being attacked on the basis of being cruel and ineffective, the need to maintain and manage habitat by controlling animal populations is still very important. Because of the importance of the fur industry in Louisiana the Department of Wildlife and Fisheries is interested in expanding the base of information on the management of furbearers.

Previous studies conducted by Palmisano and Dupuie (1975) evaluated the Victor Conibear 220, the Number 1-1/2 and Number 2 Victor long spring leg-hold trap. Linscombe (1976) evaluated the Victor Conibear 220 and the Number 2 Victor long spring leg-hold trap.

Although live traps are bulky and more expensive than leg-hold or killing type (Conibear) traps, Arthur (1928) stated that they have been used for capturing fur animals for many years. According to Palmisano and Dupuie (1975) some of the early live trap designs such as the old "Gibbs Live Trap" were amazingly ingenious, but most currently used are a slight variation of the "drop door" box type.

Today, in the coastal marshes, live traps are mainly used to capture animals for scientific study and restocking purposes. The present study was conducted to evaluate the effectiveness of the "Number 206" Tomahawk Live Trap for capturing coastal marsh furbearers in a simulated commercial trapping operation.

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METHODS AND MATERIALS

The study was conducted on Rockefeller Refuge in southwestern Louisiana. On the southwest corner of the refuge 10.8 km of ditches, 1 m deep and 2 m wide, were used for access and to check the trap line (Fig. 1). The entire study area was classified brackish marsh by Chabreck et al. (1968) and Chabreck (1970); the dominant plant of the area was wiregrass (*Spartina patens*). Other plants present were saltmarsh grass (*Distichlis spicata*), widgeongrass (*Ruppia maritima*), three square (*Scirpus olneyi*), and leafy three square (*Scirpus robustus*).

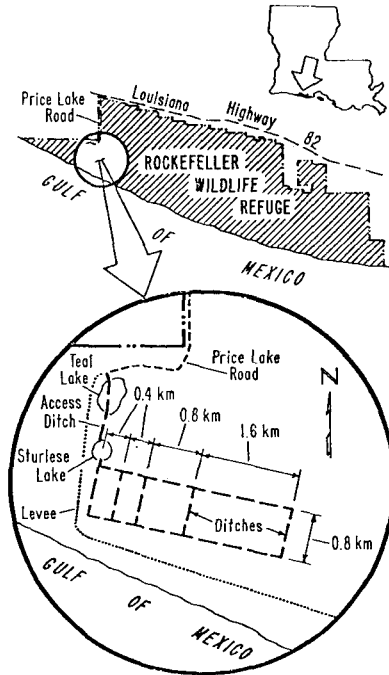


Fig. 1. Location of live trap study area at Rockefeller Refuge, Louisiana.

Trapping Technique

Furbearers were live trapped daily from 17 January to 20 March 1976. Thereafter, live trapping was conducted on alternate weeks of 6 trap nights until 16 December 1976 when the study was terminated. The live traps were checked 1 hour after sunrise each morning.

The type trap used for capturing all animals during the study was a 20.3 x 20.3 x 80.0 cm collapsible, wire mesh double-door trap (No. 206, Tomahawk Live Trap Co., Tomahawk, WI 54487). In selecting the size live trap to be used, primary consideration was given that the most numerous animals in this habitat were muskrats, nutria and

raccoons. The double-door feature was selected in order to capture animals entering from either direction. New traps were left out in the weather for at least 2 weeks before use to dull the color of the wire mesh.

Live traps were set with both doors open, in active animal runways, along the edge of the ditches. The live traps were set in the same runways that a commercial trapper would use. Using the same methods as a coastal marsh trapper with leg-hold or Conibear traps, no effort was made to conceal the traps with vegetation and no bait was used to lure the animals.

Handling and Tagging

Captured animals were handled with a restraining snare or an aluminum sexing cone, whichever proved the most convenient. The restraining snare was similar to the one used by Evans et al. (1972). The aluminum sexing cone was 34 cm long, 22 cm in diameter at the large end and 7 cm diameter at the small end.

Data collected from each captured animal included date of capture and species. Monel metal web tags (No. 3, self-piercing; National Band and Tag Co., Newport, KY 41073) were placed in both hind feet of nutria and muskrats as described by Evans et al. (1972). Mink (*Mustela vison*), raccoon, river otter (*Lutra canadensis*), and opossum (*Didelphis virginiana*) were tagged in both ears. Animals were released at the capture site. Nontarget animals which were captured were noted but not tagged.

RESULTS

A total of 35,078 live-trap days produced 1,983 captures, of which 1,782 (89.9%) were furbearers. Nutria, muskrats and raccoons accounted for 82.2% of the total species captured and 91.5% of the catch of furbearing animals. Mink, river otter and opossum comprised the remaining 8.5% of the furbearers captured. More muskrats were caught than any other species with 983 captures.

Mortality for live trapped furbearers was less than 5%. The mortality that did occur was apparently caused by drowning or prolonged exposure to the sun while in the live traps.

The non-target animals that were captured included: 197 birds, 3 ornate diamond back terrapin (*Malaclemys terrapin*), and 1 marsh rice rat (*Oryzomys palustris*). The clapper rail (*Rallus longirostris*) was the most frequently caught nonfurbearer with 175 captures. The non-furbearer group comprised 10.1% of the total captures.

The relative effectiveness of the Number 206 Tomahawk live trap, the Number 1-1/2 and 2 Victor long spring leg-hold and the single and double spring Victor Conibear 220 were evaluated by comparing the number of animals captured per 100 trap days. The data from previous studies conducted by Palmisano and Dupuie (1975) and Linscombe (1976) in brackish marsh areas adjacent to the present study area were combined into Number 1-1/2 and 2 leg-hold and Conibear 220 (Fig. 2).

Since animals captured during the previous studies were terminated and removed from the study areas, for equal comparison only, initial capture data were used from this study. Total capture data were not used because it would be inflated, since captured animals were released back into the study area. The annual fur harvest records for this area of Rockefeller Refuge indicated that the animal populations remained relatively constant between the 3 study periods.

Overall, the average catch for the leg-hold traps was 8.0 nutria per 100 trap days and 6.1 for the Conibear 220. The live traps captured only 1.2 nutria per 100 trap days. Earlier studies conducted by Palmisano and Dupuie (1975) found no difference between the Number 1-1/2 and 2 leg-hold when capturing nutria.

The capture success of muskrats in live traps was 1.7 per 100 trap days. The Conibear 220 caught 0.4 more muskrats per 100 trap days than the live trap. The Number 1-1/2 and 2 leg hold traps caught 0.9 muskrats per 100 trap day efforts. It is believed the low capture

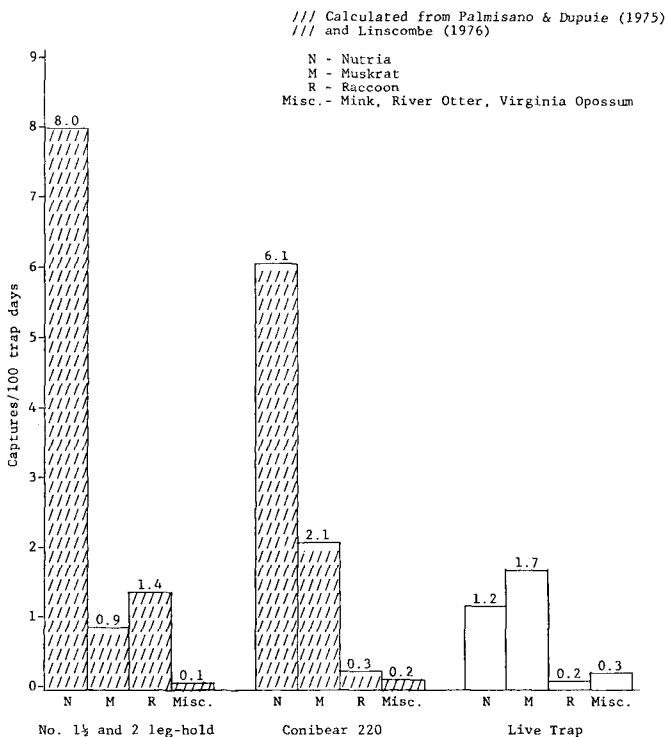


Fig. 2. Captures of furbearers in a brackish marsh using three trapping methods, Rockefeller Refuge, Louisiana.¹

¹Trapping techniques were limited to those currently in use.

success with the leg-hold, Conibear and live traps was because these traps are not designed to capture muskrats. Using the 110 Conibear or the Number 1VG stop loss would have increased the muskrat catch.

The mink, river otter and opossum were the furbearers captured least often. The captures per 100 trap days were combined for these 3 animals. The live trap method caught 0.3 animals per 100 trap days. This number was equal to the other 2 trap methods combined.

DISCUSSION

Nutria, muskrats and raccoons represented 91.5% of the total furbearers captured with live traps. This agrees with the results of Palmisano and Dupuie (1975) when they stated that 90% of the total Louisiana harvest is composed of these 3 species.

The live traps were found to be most suitable in narrow well-defined animal runways. The capture success from the present study indicated that live traps are useful when capturing animals for scientific studies or restocking purposes.

Numerous problems are associated with utilizing live traps to capture furbearers in the coastal marshes. In addition to low capture success, the live traps become ineffective if water fluctuations occur or if the area trapped is a marsh broken up with several ponds and no distinguishable animal runways. Also, hinges and springs must be oiled frequently to keep the doors on the live traps operating properly.

Visual observations made during the study indicated that raccoons tended to avoid the live traps by walking around them. Using bait and camouflaging the live traps as described by Edmunds (1976) will increase capture success for raccoons. One raccoon was observed running in a trail and ran through a live trap before the doors shut. Nutria and muskrats frequently used the live traps as elevated platforms for resting.

SUMMARY AND CONCLUSIONS

In terms of nutria captures per 100 trap days, the Number 1-1/2 and 2 leg-hold produced 8.0 captures, the Conibear 220 produced 6.1 captures and the live traps produced 1.2 captures. Results for raccoon capture per 100 trap days, indicated that the leg-hold trap was superior to the Conibear and the live trap. The conclusions concerning muskrat captures were difficult to make because none of the traps are primarily used to capture muskrats.

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