

Expanded field testing of the No. 3 Victor Soft Catch[®] trap

Robert L. Phillips and Curt Mullis

Abstract We evaluated the performance of the No. 3 Victor Soft Catch[®] trap in comparison to 3 other types of unpadding traps used for capturing coyotes (*Canis latrans*). We captured 412 coyotes in 7 western states from September 1991 to October 1992. Capture rates were similar among the 4 types tested. We found that the No. 3 Victor Soft Catch trap was as effective as other unpadding traps used for capturing coyotes under a variety of trapping conditions in the western United States.

Key words *Canis latrans*, capture, coyote, padded jaw trap, performance

Continued public concern about trapping has provided impetus for private industry to modify and improve animal traps. The No. 3 Victor Soft Catch[™] (Woodstream Corp., Lititz, Pa.; U.S. Patent 4,184,282; mention of commercial products does not constitute endorsement by the authors or the federal government) was introduced commercially in the United States in 1984. Recent research has focused on comparing the performance of this trap with other traps used in predation management programs.

Linhart and Dasch (1992) and Phillips et al. (1992) documented the improved performance of the Soft Catch trap for coyotes (*Canis latrans*) under trapping conditions in southern Texas and recommended further studies to test the trap in other areas of the United States. We wanted to compare the performance of the No. 3 Victor Soft Catch trap with 3 other types of unpadding traps when used to capture coyotes in a variety of environmental conditions in the western United States. This information is needed so that animal damage control and wildlife agency

administrators can make informed decisions regarding their use.

Study areas and methods

Personnel

Fifteen Animal Damage Control Specialists (ADCS) in 7 western states (2 each in California,



Photo by Guy Connolly.

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Montana, Nevada, New Mexico, Oklahoma, Oregon, and 3 in Wyoming) from the U.S. Department of Agriculture's (USDA) Animal Damage Control (ADC) program participated in this study (Fig. 1). Personnel were selected on the basis of their trapping experience and geographic location so that trapping would be conducted in a variety of soil types and weather conditions. All Soft Catch traps were set according to procedures recommended by Woodstream Corporation, which Linhart and Dasch (1992) described in detail. As traplines were established, a trapping specialist accompanied each ADCS to provide additional instruction on Soft Catch trap-setting procedures and to monitor the early phases of data collection.

Trap types

Four types of traps were evaluated: (1) No. 3 Soft Catch padded jaw trap equipped with double coil springs and a 15-cm center-mounted chain attached to a coil spring; (2) standard unpadded No. 4 Newhouse® double-long spring trap with offset malleable jaws and a 1-m kinkless chain (routinely used by the USDA ADC program in Texas and Oklahoma); (3) standard unpadded Victor 3NM® double-long spring trap with offset malleable jaws and a 1-m kinkless chain (routinely used by the USDA ADC program in the western United States); and (4) Sterling MJ600® trap equipped with 4 coil springs and a 74-cm kinkless end-mounted chain (used by New Mexico, Montana, and Oregon ADC programs). Manufacturers of the traps are: No. 4

Newhouse and Victor 3NM, Woodstream Corp. (Lititz, Pa.) and Sterling MJ600, Glen Sterling (Faith, S.D.).

Each study participant was supplied with 36 Soft Catch traps to be tested in conjunction with traps regularly used in coyote depredation management. Trapping was conducted in 2 phases. During the first phase, traplines were established along unimproved ranch roads in all test states except Wyoming between 26 September and 9 December 1991. Up to 36 trapping locations were established with 2 traps set at each location (1 Soft Catch and 1 unpadded trap approximately 10–30 m apart) with the same lure used with both trap types. Each paired set was staked and checked daily for 10 consecutive days. Each participant began the second phase following completion of a 10-day trapline. During this phase, participants from all 7 test states used the Soft Catch traps in combination with the unpadded traps regularly used. This phase was considered "operational use" and ended in October 1992. Traps were monitored using ADC procedures, and either stakes or drags were used as anchors.

Data analysis

Study participants recorded the following data each day as traps were checked: coyotes caught and held, trap sprung, and coyote caught but pulled out of the trap. The position of the trap jaws on the limb (toes, foot pads, or above foot pads) was also recorded.

Capture rate was defined as the number of coyote captures/trap type divided by the number of capture opportunities or potential captures (Skinner and Todd 1990). Potential captures occurred when coyotes sprung traps, were caught but pulled out, or were caught and held. For example, the capture rate for the No. 3 Soft Catch during the 10-day traplines was calculated by dividing the actual captures (81) by all potential captures ($81 + 4 = 85$) or 95%. Fisher's exact test (Snedecor and Cochran 1980) for a 2×4 contingency table was used to test the null hypothesis (no difference among the 4 trap types in the proportion of coyotes that stepped on the trap and were caught).

Results and discussion

One hundred sixty-four coyotes were caught on the 10-day traplines run in the fall of 1991; 9 animals escaped from traps. During the operational use phase of our study, 248 coyotes were caught; 23 in-

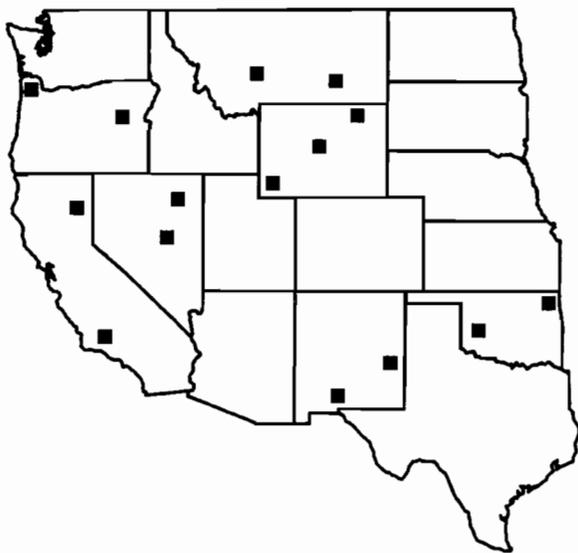


Fig. 1. Geographic areas where coyote traps were tested, September 1991–October 1992.

Table 1. Capture rates for 4 types of foothold traps calculated from coyotes trapped in California, Montana, New Mexico, Nevada, Oklahoma, Oregon, and Wyoming from September 1991 to October 1992.

Trap type	10-day trapline		Operational use	
	No. captured	Capture rate (%)	No. captured	Capture rate (%)
No. 3 Soft Catch®	81 (4) ^a	95	113 (11)	91
Unpadded No. 4 Newhouse®	16 (2)	89	10 (2)	83
Unpadded Victor 3NM®	56 (3)	95	103 (10)	91
Sterling MJ600®	11 (0)	100	22 (0)	100

^a Numbers in parentheses indicate the number of animals that escaped.

dividuals escaped from traps. The number of coyotes taken per state ranged from 121 (California) to 28 (Montana). Capture rates ranged from 83% (No. 4 Newhouse) to 100% (Sterling MJ600) but did not differ statistically among the 4 trap types for either the 10-day trapline ($P = 0.57$) or in operational use ($P = 0.33$; Table 1). These rates were similar to those reported previously for trap studies in southern Texas (Linhart and Dasch 1992, Phillips et al. 1992).

Capture rates for all test traps, except the Sterling MJ600, dropped slightly during the operational use phase. The reduced capture rates probably reflect trapping in more marginal conditions than those that occurred during the 10-day fall traplines, as well as longer intervals between checking traps.

Participants recorded trap-jaw locations on the limbs of 404 of the 412 coyotes captured. Of all the captures, 274 (68%) were above the foot pads, 75 (19%) were across the pads, and 55 (14%) were by the toes (Table 2). There were no differences among the 4 trap types in percent of capture above pads ($P = 0.21$) or across pads ($P = 0.83$). How-

Table 2. Distribution of trap jaw location on the feet of coyotes trapped in California, Montana, New Mexico, Nevada, Oklahoma, Oregon, and Wyoming from September 1991 to October 1992.

Trap type	Location on foot		
	Above pad No. (%)	Across pad No. (%)	Toe(s) No. (%)
No. 3 Soft Catch®	121 (64)	34 (18)	33 (18)
Unpadded #4 Newhouse®	20 (71)	7 (25)	1 (4)
Unpadded Victor 3NM®	108 (68)	29 (18)	21 (13)
Sterling MJ600®	25 (83)	5 (17)	0
Overall	274 (68)	75 (19)	55 (14)

ever, the MJ600 had significantly fewer toe captures than the Soft Catch ($P = 0.01$) or the Victor 3NM ($P = 0.03$).

We found that the No. 3 Victor Soft Catch trap was as effective as other unpadded traps used for capturing coyotes under a variety of trapping conditions in the western United States. However, we did not evaluate all of the adverse trapping conditions that could occur and therefore cannot state that the Soft Catch trap will perform

well in all soil and weather conditions. We believe the Soft Catch trap performed well in this study because the participants followed recommended trap-setting procedures. We suggest that wildlife managers consider the results of this study in making decisions on the use of various types of traps.

Acknowledgments. We thank K. Gruver for data tabulation and assistance in preparing the manuscript. H. Krupa reviewed the study protocol and assisted with data analysis. We are especially grateful to S. Blom, G. Dasch, and W. Askins, the trapping specialists who provided guidance and instruction to study participants on proper setting procedures for the Soft Catch traps. ADC regional, state, and district supervisors arranged priorities so that their staff could participate in this study. We are especially indebted to the following individuals for collecting data: V. Anglin, D. Biggs, D. Blakeman, L. Crabb, D. DeLong, W. Derrick, B. Fletcher, F. Frankenfield, V. Fullerton, M. Hoggan, S. Miller, G. Morris, K. Officer, J. Pitts, W. Robertson, and B. Weaver. Thanks to W. Andelt, L. Brennan, M. Fall, and J. Scrivner for review and editorial improvement of the manuscript.

Literature cited

- LINHART, S. B., AND G. J. DASCH. 1992. Improved performance of padded jaw traps for capturing coyotes. *Wildl. Soc. Bull.* 20:63-66.
- PHILLIPS, R. L., F. S. BLOM, G. J. DASCH, AND J. W. GUTHRIE. 1992. Field evaluation of three types of coyote traps. *Proc. Vertebr. Pest Conf.* 15:393-395.
- SKINNER, D. L., AND A. W. TODD. 1990. Evaluating efficiency of footholding devices for coyote capture. *Wildl. Soc. Bull.* 18:166-175.
- SNEDECOR, G. W., AND W. G. COCHRAN. 1980. *Statistical methods* (Seventh ed.). Iowa State Univ. Press, Ames. 507 pp.



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Associate Editor: Brennan

