

CANNON-NETTING MOUNTAIN GOATS

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Abstract: A portable cannon net was used to capture mountain goats during June - August, 1979 in the Sawtooth Range, Montana. The trap site was an artificial salt lick established on an open ridge saddle at an elevation of 1,926 meters. The net was fired 4 times at 11 goats, capturing 8 during 8 trap-days. Groups of 1-4 goats were easily handled without injury and without the use of drugs.

A cannon-projected net trap (Dill and Thornsberry 1950, Hawkins et al. 1968) was used to capture mountain goats (*Oreamnos americanus*) during June - August 1979 in the Sawtooth Range of western Montana. Rideout (1974) discussed the use of Clover traps, dropnets, pen traps, and certain drugs for capturing goats in Montana and referred to other studies where similar techniques were employed. Kuck (1977) captured goats in Idaho by dropnetting and by chemical immobilization. Stevens and Driver (1978) used snares successfully in Olympic National Park, Washington. Steel traps, body snares, and nets have also been used on a trial basis for trapping goats in Montana (Casebeer et al. 1950). However, the use of a cannon net for capturing mountain goats has not been previously documented.

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METHODS

The trap site was a long-established artificial salt lick habitually used by goats and provided a large, flat, unobstructed surface for trapping. The lick was on an open ridge saddle at an elevation of 6,320 feet (1,926 m) and was accessible via trail from the nearest road, roughly 2 miles (3.2 km) distant.

The cannon net apparatus was transported to the trap site on 2 pack horses. The trap set generally followed that of Hawkins et al. (1968), using a 60 x 40 ft (18.3 x 12.2 m) net attached to 4 (rather than 3) recoilless cannons. Each cannon was loaded with a charge, sealed in a plastic sack, consisting of 1 electrical blasting cap surrounded by approximately 5 oz (142 g) of pelletized artillery powder. Bait was not required to draw goats to the lick or to concentrate them near the net. Scattered coniferous cover around the site made it possible to fire the net manually from a distance of approximately 20 m, using a blasting machine.

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RESULTS AND DISCUSSION

Eight trap-days were spent at the site when the trap was operational. The net was fired 4 times at 11 goats, capturing 8 (Table 1). Group sizes of captured goats ranged from 1 to 4. On one occasion, only 1 of the 4 charges fired, causing the net to miss the 2 goats present. On another occasion, 1 kid was able to free itself from the net and escape while another goat was being handled. No injuries were sustained by goats or field personnel during the trapping operation.

Table 1. Results of Cannon-netting goats in 1979.

Date	Trap Discharges	Goats captured				Kid sex not determined
		Adult male	Adult female	Two-year old male	Kid male	
6/19	0					
6/20	0					
6/27	1					
7/13	0					
7/14	1	1		2		
7/23	1	1				
8/17	0					
8/27	1		2		1	1*
Total	4	2	2	2	1	1

* Kid escaped during handling

Hawkins et al. (1968) noted 4 main advantages of the cannon-netting method as modified for trapping deer (*Odocoileus virginianus* and *Dama dama*): (1) multiple captures were common, (2) injury rates were low, (3) restraint of animals after capture was easy, and (4) the net apparatus was portable and easily set. These advantages were also evident while trapping mountain goats. In addition the cannon-netting method allowed considerable freedom in allocating field time. Once the net was set, it could be monitored at the convenience of the researchers. Daily checks were not required.

Goats moved in and out of trapping range as they wandered over the lick, thereby providing us with some opportunity to select desired individuals and group sizes for capture. Once the net was fired, the animals became entangled in the mesh thus reducing their capability to injure each other with their horns, a problem reported by Casebeer et al. (1950) and Lentfer (1955) for

pen-trapping. As Casebeer et al (1950) observed, once the goats were thrown on their sides they generally became quite passive and were marked, measured, and released within several minutes of capture without the use of drugs. After the animals were released, 2 men could easily reset the net within 1 hour and resume trapping.

The presence and periodic operation of the cannon net on the lick did not appear to seriously alter the established movement patterns of the goats. A band of 30 goats were observed on the lick on 25 June, 11 days after the trap was set. On 27 June, the net was fired at a nanny and kid, missing them both, but they remained on the lick and resumed eating soil. On 28 June, 6 goats were observed on the lick despite the disturbance the previous day. Further, 2 goats captured with the net on 14 July were re-observed on the lick on 31 July. Sporadic use of the lick continued throughout the summer until mid-September. Singer (1978) also reported habituation of mountain goats to human and vehicular disturbances at Walton Goat Lick in Glacier National Park.

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QUESTIONS - RESPONSES

Malcolm Ramsey: What is the cost of the system?

Mike Thompson: I can't tell you; we didn't figure it out. We had the materials on hand, it's used for deer, so it was easy to adapt it for goats. Most of the stuff was hand made.

Wayne Heimer: I am curious about the return rate of those that you had caught. Did they come back to the salt lick after you put a collar on them?

Mike Thompson: Yes, as a matter of fact I'm glad you brought that up. Of course, I wasn't there all the time, but we did see a pair of 2 year olds come back to the lick within 2 weeks after we caught them. The general pattern of their use is to come to this lick, stay for less than a week at a time, and move back to the regular portion of their summer range which may be 5 to 10 miles away and stay there. So it was interesting to me that they do come back. We did see other radioed goats on Macadale Mountain which I referred to as a staging area for use on that lick so I don't feel that we hindered their coming back to the lick.

Kurt Becker: You alluded to the use of sucostrine. I'm just wondering how affective was that and what dosages you used?

Mike Thompson: That's quite a story; basically we used 24 mg on an adult. I probably should tell you about that afterwards, it's quite a long story. We did get the goat and it was released without mortality, but I can't tell you that 24 mg is the way to go because there are some extenuating circumstances.