

USE OF DROP NET AND COLLARS IN STUDY OF DALL SHEEP

by

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A drop net similar to that used by Glazener, et al. (J. Wildl. Mgmt. 28: 280-287, 1964) to capture turkeys (*Meleagris gallopavo*), and by Ramsey (J. Wildl. Mgmt., 32:187-190, 1968) on deer (*Odocoileus*), has been used to capture Dall sheep in Alaska. Twenty drops of a 60 x 60-foot, 3.5-inch-square mesh net of No. 72 knotless nylon dyed black (\$420 from Nichols Net & Twine, East St. Louis, Ill.) caught 68 sheep at a natural mineral lick in 8 days, 30 May - 7 June 1969.

The 200-pound net was hung from 13-foot corner poles of 2-inch pipe and propped up in the center with a 15-foot post of 1-inch pipe. Boat winches on the corner posts were used to raise the net. Blasting caps were inserted in the 3/4 inch polypropylene supporting ropes at each corner and the center, and were connected in parallel with No. 18 copper wire to a 12-volt lantern battery about 100 meters away in a blind. A push-button switch was used to close the circuit.

Sheep usually fell and could not get up again when the net dropped on their backs. Most sheep struggled for about one minute, and then lay still. Violent struggling was rare. Rapid heart beats, audible several meters away, were characteristic of captured sheep. Despite the lack of continual struggling, sheep were fatigued when released. They appeared to recover rapidly. Only 1 of 75 sheep caught to date was injured seriously, the femur of a 6-year old ram was broken, probably from falling against a sharp rock in the trap zone. The mean time required to reset the net, including measuring, collaring, and ear tagging sheep, was 77.8 minutes for the 19 resets in 1969. Two men have dropped and reset the net four times in one day. Trapping activities did not appear to disrupt the sheep's mineral lick use patterns and trapping success remained high throughout the operation.

Collars of 6-inch wide "aurora pink" "Saflag" (Safety Flag Company of America, Pawtucket, R.I.) backed with canvas and numbered in three locations with 4-inch black "Saflag" numerals were placed on captured sheep. The numerals

were sewed to the collars. Cost of materials and labor was about \$4.50 per collar. The collar ends were fastened together with two metal clips through grommets arranged to allow 23-inch maximum neck girth for females and 25-inch for males. Most males and some females had sufficient head and horn size at 12 months of age for collars to stay on. Apparently most collars were still functional after one year on the sheep. After 10 months of use at least one numeral and one metal clip were known to be missing. The collars do not appear to cause any lasting change in behavior of other sheep toward collared sheep.

The collars were visible to an unaided eye about one mile away. The numbers could be read at that distance with a 48X telescope. Larger numerals and stiffer backing materials should improve the readability from aircraft. Several factors, including folded collars, smallness of numbers, the evasiveness of sheep, and pilot's lack of skill in mountain flying have prevented the positive identification of 64 of 106 (60%) numbers seen from a PA-18-150 aircraft. A modified collar design, using 6-inch numerals, backed with vinyl stiffening material (about \$8.00 each) will be tried in 1970. The success in reading collar numbers from the air depends to a great extent on the survey pilot's ability.