

PRONGHORN ANTELOPE USE OF THE INEL NATIONAL ENVIRONMENTAL RESEARCH PARK

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ABSTRACT

Winter aerial and ground surveys indicate that between 4500 and 6000 pronghorn antelope (*Antilocapra americana*) used the Idaho National Engineering Laboratory (INEL) Site during the 1977 - 1978 winter. Antelope wintered in four separate areas for varying lengths of time. A radiotelemetry study has been initiated to (1) document pronghorn migration routes and timing to and from mountain valleys adjacent to the Site (2) locate winter ranges, and (3) determine seasonal use of the INEL Site by resident and migratory pronghorn. Radio-tracking will continue through December, 1979. The vegetal composition of winter ranges will be determined, and the similarities and differences of the plant communities among winter ranges on the INEL Site will be compared.

INTRODUCTION

Pronghorn antelope (*Antilocapra americana*) are common year round residents on the Idaho National Engineering Laboratory (INEL) Site. In addition to the resident population, large numbers of migratory pronghorn winter on, or very near to, the INEL Site. These migrating animals come down onto the Snake River Plain from the Little Lost and Birch Creek valleys in east-central Idaho, and from the Crooked Creek Medicine Lodge drainage on the Idaho-Montana border (Hoskinson, 1977). The number of pronghorn on the INEL Site at different times of the year is unknown. Bruns (1977) has suggested that pronghorn winter ranges are not traditional locations, but areas of optimum environmental conditions. Thus, pronghorn use of the INEL Site may vary from year to year.

The pronghorn antelope is a highly sought after game species in both Idaho and Montana. A large percentage of the pronghorn wintering on the Site are members of hunted populations (Hoskinson, 1977). Increased agricultural activities around the INEL Site, and the proposed development of nearly 2500 ha of the Site recently made available to victims of the Teton Flood, may affect the migration and wintering patterns of antelope. Thus, documenting the winter range(s) of pronghorn on and near the INEL Site, the migration routes and times, and the number of migratory antelope is critical for cooperative management decisions by the Idaho and Montana Departments of Fish and Game. A vegetal analysis of wintering range(s) on the INEL Site will help establish the ecological relationship between the Site and the surrounding mountain valleys, and will be consistent with National Environmental Research Park objectives. Documenting the number of resident pronghorn and their patterns of use on the INEL Site will be useful in fully interpreting the radionuclide data collected from pronghorn tissues (Markham and Autenreith, 1976).

Therefore, the objectives of this study are to determine: (1) the number of pronghorn that are year round residents on the Site: their seasonal locations and patterns of movement, (2) the number of migratory pronghorn wintering on the Site: their migration routes and time of migrations, (3) the location of the summer ranges of these migrating pronghorn, and (4) the plant community composition of the winter range(s) of pronghorn on the Site.

MATERIALS AND METHODS

Meeting these objectives will involve radio-telemetry tracking in conjunction with a color marking system for visual recognition of individual animals. Solar powered radio transmitter collars and plastic ear flags will be placed on pronghorn. To do this, antelope will be captured in a wing trap (Hoskinson, 1977) or by the use of immobilizing drugs (M-99 etorphine or succinylcholine chloride) administered with a tranquilizer-dart gun. Darting attempts will be conducted at 1-3 day intervals starting in the spring of 1978 and continuing throughout the study. A trapping operation, in conjunction with the Idaho Department of Fish and Game, is scheduled for the Little Lost Valley in the early fall, 1978. We hope that as many as 50 pronghorn will be fitted with radio transmitters and ear flags, with an additional 50 animals ear flagged only. These animals will be monitored from the ground and from the air using a scanning radio receiver and a null-peak Yagi double antenna system. Attempts will be made to visually verify all radio transmissions received.

The vegetal composition of heavily used wintering areas will be described during the summers of 1978 and 1979 using the canopy coverage methods outlined by Daubenmire (1959). Identification of shrubs to subspecies will be done by the Idaho Fish and Game State Laboratory in Boise, Idaho.

RESULTS

Ground and aerial surveys for pronghorn were conducted weekly on and near the INEL Site from mid-January to mid-April. Results indicated that at least 20 to 38 pronghorn radio-collared and/or ear flagged by the Idaho Department of Fish and Game in the Birch Creek valley in 1977 wintered on the Site.

During January to March, 1978, our fixed wing air flights over the INEL Site indicated a pronghorn population of 4500 to 6000 animals. The Idaho Department of Fish and Game (1975) has estimated the number of pronghorn on summer range in Idaho to be 13,250 animals. While the number of antelope from Montana included in our estimate is unknown, it is possible that 30 to 40% of the total Idaho pronghorn population wintered on the INEL Site.

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Pronghorn wintered on four distinct areas of the Site. Area I (Fig. 1), north and east of the Naval Reactor Facility, supported over 1000 pronghorn (at times nearly 2500 animals) through the winter, while Areas II, III, IV (Fig. 1) were each used for shorter periods of time. Area II and Area III, near the Lost River Sinks and North of Test Area North respectively, each contained over 1000 pronghorn during most of January and early February. In mid-February, many of the pronghorn from Area II moved into Area I, while animals from Area III moved to both Area I and II. Just prior to the spring migration (late-March/early-April) most of the pronghorn on the Site were in Area I or had moved to Area IV (Fig. 1) near the Auxillary Reactor Area. By late-April almost all of the pronghorn wintering on the Site had returned to summer ranges.

DISCUSSION

Preliminary results indicate that 4500 - 6000 pronghorn antelope winter on the INEL Site. There appear to be at least four areas of concentrated winter use. Three of these areas are used for about a month each, while the fourth is used through the winter. Vegetal analysis will demonstrate the similarities and differences of the plant species composition among these four wintering areas.

Monitoring radio-collared and/or ear flagged animals will be continued to document the changes in winter range(s) next year, and to determine the variability in the timing and routes of migration. Ground and aerial surveys will be conducted in an attempt to improve the estimates of the populations of antelope wintering on and resident to the INEL Site.

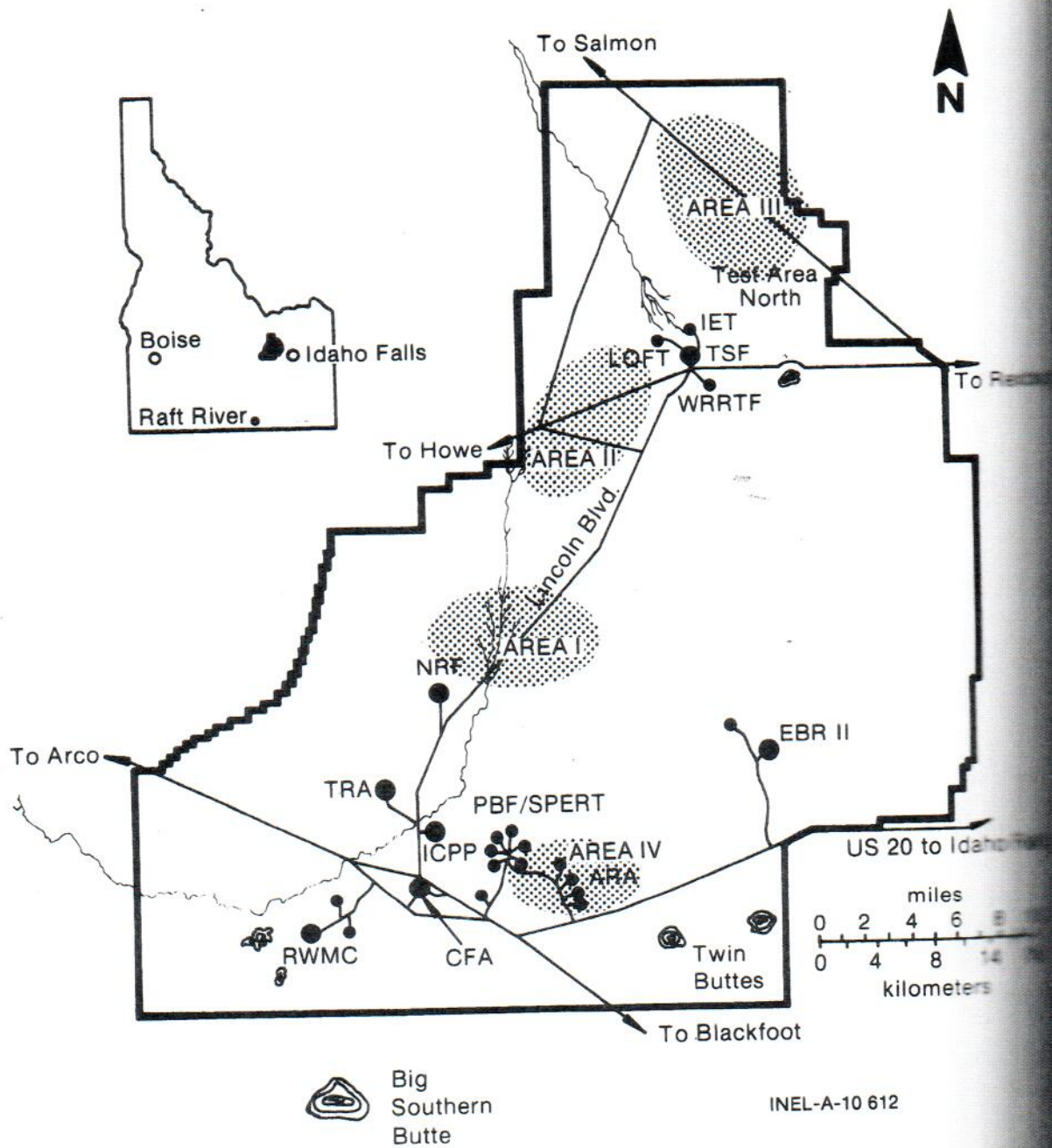


Fig. 1. Four areas of heavy pronghorn antelope use on the Idaho National Engineering Laboratory Site, winter 1977-78.

LITERATURE CITED

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