

Nelson, O.C. 1955. A field study of Sage Grouse in southeastern Oregon with special reference to reproduction and survival. M.S. Thesis, Oregon State College, Corvallis.

This thesis presents the information collected on various phases of the life history of the sage grouse in the Hart Mountain area of southeastern Oregon during the period of April 8 to September 12, 1951. The material was gathered in an attempt to compile information on reproduction, survival, and other life history data that might aid in the management of this species. The various phases of the study are summarized as follows. Two strutting grounds were located for study. These were rocky situations located on the sagebrush flats with there having been no apparent selection by the birds for barrenness or exposure as had been observed in previous studies. The peak of mating was past upon arrival in the study area and no matings were observed after April 19. Strutting activities had ceased completely after May. The collection of nesting data followed the strutting observations. Seven plant species were utilized for nesting cover with the average height being 19 inches. Clutch sizes varied from six to nine eggs with the average being 7.13 eggs. Laying began about April 1 with the earliest hatching date recorded being May 8 and the peak of hatching occurring about May 15. Incubation experiments provided information on the hens attendance on the nest. An incubation period of 29 days was recorded. Weather and infertility were of little or no detriment to nesting success. Nesting data showed a loss of 9.8 per cent to desertion, 51 per cent to destruction by predators as badgers, ravens and ground squirrels, and a hatching success of 39.2 per cent. Known or suspected predation accounted for approximately 50 per cent of all known chick, juvenile and adult losses. No losses were attributed to weather, parasites, or disease factors. Brood survival was determined by taking monthly brood counts. The average brood size for May, June, July, and August was 6.7, 5.3, 4.0, and 3.3 chicks respectively. An average loss of 3.4 chicks or slightly more than one-half of each brood was realized from May 13 to August 23. Information on drift or vertical migration that occurred in the study area was as follows: The migration began about mid-June. It occurred in a gradual manner with an orderly progression of sexes and age classes appearing at the summit. The males arrived first and the hens with broods arrived last. This vertical migration appeared to occur only in those populations located in close proximity to the mountain proper. A calculation of population increase by August 23 indicated that there were 133 chicks per each 200 adult sage grouse or an increase of 66.5 per cent at that time. The paper is concluded with a presentation of the food habits of the sage grouse and is summarized here as follows: Seventeen adult stomachs and 93. Adult droppings were analyzed and showed that plant foods made up 93 per cent of the volume of the total foods eaten by adults. Sagebrush was the most important item and comprised 9.9 per cent of the total volumetric percentage. Fourteen plant foods were recorded in all. Animal foods contributed 6.18 per cent of the volume in the adult diet. Analysis of 222 droppings from chicks estimated to be under six weeks in age showed that they eat many food items in common with the adults with the exception of the buds and leaves of sagebrush which were not yet being utilized by these very young birds.