HIMALAYAN SNOWCOCKS - NEVADA'S NEWEST UPLAND GAME

San J. Stiver
Nevada Department of Wildlife
P. O. Box 10678
Reno, NV 89520

ABSTRACT.

The Himalayan snowcock was stocked both from wild trapped birds from Hunza and game farm birds in Nevada from 1963 through 1979. During this period 2,025 birds were released in 5 mountain ranges in the state. The major release efforts were centered in the Ruby and East Humboldt mountains of Northeastern Nevada, where the bird has become established in an alpine niche that is typically glacial and topographically steep and diverse.

The first three hunts for snowcocks were 9 days long for resident hunters with limits of one bird daily and one in possession. The 1983 season allowed nonresident hunters and extended the season to one month. To date, 91 hunters have participated in the hunt and have harvested 12 birds. Hunting for the species has been very difficult because the bird is extremely wary and the preferred habitat is very precipitous. Hunter interest has been growing annually and the species is expected to attain the status of a trophy upland game bird in the near future.

INTRODUCTION

Nevada is the most arid state in the United States. This harsh environment has produced vegetative communities lacking in species diversity and with low plant density. Only six endemic upland game species historically occurred in the State, and more than 75,000 square miles were unoccupied by any native upland game birds.

The Europeans that settled this region desired more upland game birds and began transplanting wildlife at an early date. The first reported transplant occurred on May 17, 1862 when 22 California quail (*Callipepla californica*) were released in the Reno area. Since then, 17 species of upland game have been introduced into the State to increase the diversity and distribution of huntable upland bird populations. The chukar (*Alectoris graeca*) and Hungarian partridge (*Perdix perdix*), ringnecked and Afghan whitewinged pheasants (*Phasianus colchicus*), California quail, scaled quail (*Callipepla squamata*), ruffed grouse (*Bonasa umbellus*), Merriam's turkey (*Meleagris gallopavo*), and the Himalayan snowcock (*Tetraogallus himalayensis*) have all been successfully established and hunted in Nevada.

The successful introduction of the ringnecked pheasant and the chukar into Nevada raised the public's interest in game transplanting, and probably inflated expectations of the total amount of habitat that could sustain huntable densities of game birds. The Fish and Game Commission spent considerable effort evaluating, importing, raising, and releasing upland game birds while hoping to find species that would live in the extensive waterless expanses of the State. In addition, unique species were sought. It was hoped the Himalayan snowcock would fill both requirements.

BIOLOGY

DESCRIPTION

The snowcocks, *Tetraogallus spp.*, are in the order Galliformes, family Phasianidae (Baker 1928, Dement'ev et al 1933). The genus *Tetraogallus* is represented by five species found in the mountainous regions of Asia Minor through central Asia to Western China (Dement'ev et al

1933). The snowcocks are among the largest members of their family. The average game farm weight for the Himalayan snowcock is 4.3 lbs for females and 5.5 lbs for males. The Himalayan snowcock is a large, grey partridge that superficially resembles a chukar. Baker (1928) gives a detailed description of the species.

The Himalayan snowcock occupies the Himalaya, Hindu Kush, Karkoram, and Pamir ranges of southern Russia, Afghanistan, Pakistan, India, and China (Baker 1928, Dement'ev et al 1933). The source of the Nevada birds was the state of Hunza in northern Pakistan.

Baker (1928) reported that snowcocks occupy high elevation alpine and subalpine habitats. On native ranges, the bird summers at elevations near 17,000 feet and winters as low as 7,000 feet. They prefer open areas near rocky, precipitous hillsides with scanty vegetation and are often found near high basins with mountain meadows. Bland (in press), studying snowcocks in the Ruby Mountains, reported heavy use in well vegetated alpine turf and alpine tundra habitat types, usually in glacial cirques.

In the winter, snowcocks in their native range are reported to descend to lower elevations, especially if snowfall is heavy. The birds descend to tree line, but they do not enter the forest. Also, snowcocks are reported to prefer big game concentration areas during the winter. In Nevada, winter observations have been limited, but most birds observed have remained above 10,000 feet on the mountain crest.

REPRODUCTIVE BIOLOGY

The reproductive biology of wild snowcocks has not been extensively studied in Nevada, although the species has been studied in captivity at the Mason Valley Game Farm. Captive birds began breeding activity during the month of February and probably peaked in early April. Egg laying usually began in mid to late March, and egg production usually peaked in early May. Most breeding activities concluded in late June (Abbott and Christensen 1971).

Game farm hens usually did not breed until two years of age. Egg production per hen ranged from 3.0 to 15.6 from 1963 through 1972 (Christensen 1970, Hussey 1972, Hussey 1973). The average egg production was 11.3 eggs per hen. The incubation period was documented to be 25 days. The average brood of wild snowcocks in Nevada is 5.7 chicks per hen based on a small sample of 7 broods.

MANAGEMENT

INTRODUCTIONS AND PROPAGATION

The Himalayan snowcock was identified for transplanting to Nevada in 1961 when Nevada sheep hunter Hamilton McCaughey noted the habitat similarities between Nevada and northern India, and made arrangements to obtain birds from the President of Pakistan. Only one bird was delivered to the Nevada Fish and Game Commission; however, the Commission was impressed with the species' potential, and the Department was directed to obtain more birds for release.

The Department made considerable efforts to obtain an annual supply of wild birds from Hunza for release, but this program encountered significant problems, because of diseases and transportation losses. The first shipment of wild birds in 1963 suffered a 63% loss in transit. Emphasis was shifted to rearing birds in Nevada rather than importing wild birds for release. By 1965, the Department had obtained a total of 107 wild birds from Hunza, of which only 19 were released into the Ruby Mountains.

Snowcock propagation was initiated at the Mason Valley game farm in 1965, and production occurred over a 15 year period (1965-1979) from an original nucleus of 13 hens. Initial projections of game farm production were optimistic, and the Department estimated that it would be releasing 1400-1900 birds annually by 1972. However, the species proved to be very difficult to raise, and a total of only 2,025 birds were eventually released into the wild.

Snowcocks were released into five Nevada mountain ranges from 1963 through 1979. The Ruby Mountains have the greatest potential as snowcock habitat, and subsequently received the most birds. The largest total release outside of the Ruby Mountains was 142 birds released into the Toiyabe Range between 1972 and 1975. A total of 1,717 birds were released in the Ruby Mountains, with some releases exceeding 200 birds. Spring releases of yearling birds accounted for 49% of the releases, and fall releases of young of the year accounting for 51%. Viable populations have become established only in the Ruby and East Humboldt ranges.

The total cost of the Himalayan snowcock program is approximately $750,000.00, or about $370.00 per bird released. In the original agreement with the Mir of Hunza, the Department of Wildlife paid $50.00 per bird delivered to the point of transport.

POPULATION STATUS

Himalayan snowcocks appear to be well established in the Ruby and East Humboldt ranges of Elko County, Nevada and those populations do not appear to have fully occupied all suitable habitat. The Department of Wildlife estimates that approximately 30 square miles of suitable habitat is located in the Ruby Mountains and about 65% of that range is currently occupied. The East Humboldt Range has about 10 square miles of snowcock habitat and about 50% of that habitat is occupied (Foree, pers. comm.). The combined population estimate for the two mountain ranges is 250-500 birds.

Elko County experienced extremely severe winters in 1981-82 and 1982-83, and a summer drought in 1981. While chukar and other wildlife populations were severely reduced, the snowcock population appears to have remained stable, or decreased only slightly. Reproduction has been observed frequently during the 1980's and the population should now consist mainly of birds that were hatched in the wild. Of the twelve birds shot during the last 4 hunting seasons, only one was banded, indicating that it was a game farm bird.

Population assessment is difficult because of the inaccessibility of preferred habitat. Several days are spent each summer looking for broods, checking distribution, and counting birds from the ground. Also, birds are censused each August by helicopter during mountain goat surveys. Data are collected from each hunter to help solidify information on density and distribution.

HUNTING SEASONS AND HARVEST

The Board of Wildlife Commissioners established the first snowcock season in 1980 with a September season of nine days and a bag and possession limit of one bird. Only residents of Nevada were permitted to hunt. In 1980, three hunters reported that 2 birds were harvested. The 1981 season was identical to the previous season, and a total of seven hunters reported harvesting 3 snowcocks. Hunters were asked to check in and report their hunting activities to the Department during the first two years; however, only a small percentage of the hunters did so, and in 1982 the Department developed a free use permit that was required to hunt the species. The 1982 season followed the same format as the first two seasons, but 56 use permits were issued and 22 hunters reported taking 3 birds. The low hunter success and difficulty of hunting prompted the Commission in 1983 to establish a 30 day season with 1 bird daily and in possession, and to allow nonresidents to participate in the hunt. A total of 108 use permits were issued in 1983, and 65 hunters reported harvesting 4 snowcocks.

HUNTING THE SNOWCOCK

British and Asian literature (Baker 1928, Dement'ev 1933) varies considerably on the degree of difficulty ascribed to hunting this species. However, the majority of the accounts indicate that the bird is extremely wary, and usually flees when a hunter is within several hundred yards. Snowcocks will attempt escape by walking uphill to the mountain crest if a hunter is below, and taking flight downhill if the hunter is approaching from above. Usually birds will fly across the canyons or valleys and land at about the same elevation on the next slope. Nevada experiences parallel those descriptions.

Nevada hunters have found some success by listening for calling birds, and then using a spotting scope to locate the birds while they feed or loaf on mountain meadows. The birds are then stalked by the hunter using rocks and the topography for cover. Most hunters have reported killing birds at ranges in excess of 40 yards with 2 or 4 shot.

Several alternative hunting techniques are also possible. Pass shooting birds moving to and from their roosting sites on the cliffs might require the hunter to spend several nights on the mountain to be successful. Hunters might also opt for the traditional method of hunting snowcocks in Asia, and hire a large number of local "Sherpas" to drive the birds over a well concealed blind.

CONCLUSIONS

From an initial release of 19 wild trapped birds in 1963 and the release of an additional 1700 game farm reared birds in the 1970's, the Himalayan snowcock has become established in the Ruby Mountains of Elko County, Nevada. The future of the species appears at this time to be secure in the Ruby Mountains. The establishment of this species in other mountain ranges of Nevada has been disappointing, and only limited potential habitat may exist for further range expansion.

Hunting of the species under current regulation and intensity does not appear to have any impact on the population. Hunting interest and harvest are expected to increase.

LITERATURE CITED

Abbott, U. and G. Christensen. 1971. Hatching and rearing the Himalayan snow partridge in captivity. J. Wildl. Manage. 35: 301-306.

Baker, E. O. Stuart. 1928. The fauna of British India, including Ceylon and Burma. Vol. 5. Taylor and Francis. 469 p.

Bland, J. D. In press. Patterns of summer habitat use by Himalayan snowcock (*Tetraogallus himalayensis*) in Nevada, USA. Proc. Second Int. Symp. on Pheasants. Srinagar, Kashmir.

Christensen. G. C. 1970. Exotic game birds propagation. Job Comp. Rpt., Nevada Dept. of Fish and Game, Project W-44-R-2. Reno. 19 p. (mimeo.).

Dement'ev, G. P., N. A. Gladkov. 1933. The birds of the Soviet Union. Vol. IV. Translation available from USDC, Clearinghouse Fed. Sci. and Tech. Info. Springfield, Va. 22151. 683 p.

Houghton, J. G., C. M. Sakamoto and R. O. Gifford. 1975. Nevada's weather and climate. Spec. Pub. 2, Nevada Bureau of Mines and Geology. University of Nevada, Reno. 78 p.

Hussey, R. 1972. Exotic game bird propagation. Nevada Dept. Fish and Game, Project W-48-2, Study R-XIII, Jobs 13.1, 13.2, 13.3. Reno. 15 p. (mimeo.).

Hussey, R. 1973. Exotic game bird propagation. Nevada Dept. Fish and Game, Project W-48-3, Study R-XIII, Jobs 13.1, 13.2, 13.3. Reno. 19 p. (mimeo.).