

Evaluation of Annual Body Weight Cycle of Certain bird species in Dachigam National Park, India

Junaid A. Malik, Gangaram Masar, R.D Ahirwar, R.C. Saxena

Abstract: Dachigam National Park is located 22 kms. from Srinagar, Jammu and Kashmir - covering an area of 141 square kilometers. The altitudinal variation is ranging from 5500 - 14000 ft. above msl. Here lies a big category of different bird species. The study deals with the change and impact of bird mess from time to time due to some habitat factors. Ecological niche and nutrition also have a great effect on the changing weight of birds. The present study reveals a gradual change in the annual body weight cycle of *Lophophorus impejanus* (herbivorous), *Hypsipetes leucocephalus* (omnivorous), *Passer rutilans* (Omnivorous) and *Gypaetus barbatus* (Carnivorous) the four birds of Dachigam National Park, Kashmir, India.

Keywords: Cinnamon sparrow, Ecological niche, KBWA, *Lophophorus impejanus*, *Passer rutilans*



INTRODUCTION :-

The body weight cycle among a few migratory and endemic birds have been described by many workers. However, a review of literature shows that no work has been done on the annual body weight cycle of hill-birds of Dachigam National Park (Jammu and Kashmir). Therefore, the present study was undertaken. An attempt was made to find out a correlation, if any, between the annual body weight cycle in carnivorous, herbivorous and omnivorous hill birds.

MATERIALS AND METHODS:-

The four species of birds selected for this study were *Lophophorus impejanus* (Himalayan Monal), *Hypsipetes leucocephalus* (Black bulbul), *Passer rutilans* (Cinnamon sparrow) and *Gypaetus barbatus* (Bearded vulture).

Normally *Lophophorus impejanus* breeds between April to August, *Hypsipetes leucocephalus* breeds during April to July, *Passer rutilans* breeds during April to August and *Gypaetus barbatus* breeds between December to February. The birds were collected prior to their breeding seasons from Dachigam National Park hills by the permission of KBWA (Kashmir Bird watching wildlife Authority) with the help of animal catchers and were kept

in eight open aviaries according to their groups and sexes. The birds were provided plenty of suitable food and good lining conditions. To study the annual body weight cycle in both the sexes of carnivorous, herbivorous and omnivorous birds, the body weight of 4 males and 4 females were recorded on 15th of each month round the year table.

RESULTS AND DISCUSSION:-

Lophophorus impejanus:

In herbivorous *Lophophorus impejanus* the body weight was minimum in June in both the sexes, which was found to increase during August to November and March to May and decrease during June to July and December to February, which reaches a minimum in June (summer) and December (winter).

Hypsipetes leucocephalus:

The body weight in omnivorous *Hypsipetes leucocephalus* was found minimum in July in both the sexes. A sharp increase of weight in both the sexes was noticed during September to December. Decrease in the body weight of both sexes was observed during January to June.

Passer rutilans:

In omnivorous *Passer rutilans* the minimum body weight of both the sexes was recorded in March. In both sexes it was found to increase during May to August whereas a decrease in body weight in both the sexes was recorded during the months of January to May.

- Junaid A. Malik, Research Scholar at Pest Control and Ayurvedic Drug Research Laboratory, SSL Jain PG College, Vidisha-464001
- E-mail: malik.junaidahmad@gmail.com

Gypaetus barbatus :

In carnivorous *Gypaetus barbatus* the body weight of both the sexes was minimum in November, which was found to increase during December to June and decrease during July to November which reached a minimum in November (winter) and July (summer) (Table).

Nice¹ and Saxena & Saxena⁶ reported that few species of birds show increase in their body weight during winter while many species did not show any major variation in the body weight. Kirkpatrick¹⁰ observed an increase in the body weight of female birds in spring whereas no corresponding increase was found in the male birds. Saxena¹¹ reported that there is no consistent difference in the body weight of male and female rain quail. Thapliyal and Garg in male weaver bird and Saxena & Saxena⁶ in Grey quail observed that the two sexes differ in their body weight.

In this study a gradual change in the annual body weight cycle of the two sexes of carnivorous, herbivorous and omnivorous hill birds was recorded which was more conspicuous in the *Gypaetus barbatus*.

The present study also reveals that the body weight of the birds is directly proportional to the period of availability of the food.

ACKNOWLEDGEMENT :-

Financial assistance received by one of the authors Mr. Gangaram Masar from UGC with thanks under MH-96/103030/11-12, India is gratefully acknowledged with thanks. We are thankful to the Kashmir Bird Wildlife Department which provide us a platform and specimen organisms for the present study. We are also thankful to Regional Wildlife Warden of Dachigam National Park, for encouragement, support and help.

REFERENCES :-

- [1] Nice, M.M. (1946). *Condor*, 48:41.
- [2] Fleming, R.L. Sr. et al. (1984) *Birds of Nepal : with reference to Kashmir and Sikkim, Nepal : Nature Himalayas*.
- [3] Wolfson, A (1945). *Condor*, 47:95.
- [4] Kaul, S.C. (1939) *Birds of Kashmir, Srinagar: The normal press*.
- [5] Thapliyal, J.P. (1968). *Proc Nat. Inst. Sci.*, 36: 154.
- [6] Saxena, A & Saxena, A.K. (1975). *Ind. Jour. Zool.*, XVI (2) : 117
- [7] Baldwin, S.P. and Kendeigh S.C. (1938). *Auk*, 55:416
- [8] Chandola, A. & Thapliyal, J.P. (1968). *Gen. Comp. Endo.*, 11:272.
- [9] Ali, S. & Laeeq. A. (1975). In : *Common Birds*, National Book Trust, Delhi, pp. 46.
- [10] Kirkpatrick, C.M. (1944). *Anat. Rec.*, 89:175.
- [11] Saxena, A.K. (1973). In : *Avian Endocrinology*. A Ph.D. thesis at Kanpur Univ., Kanpur, India.
- [12] Thapliyal, J.P., Garg P.K. (1968). *Archives*, 51:689

Table : Average body weight (gms. \pm S.E.) of adult birds.

Dates	Name of the bird							
	L. impejanus		H. Peucocephalus		P. rutilans		G. barbatus	
	Male	Female	Male	Female	Male	Female	Male	Female
15.06.2010	1980.6 \pm 2.65	1800.5 \pm 2.80	35.5 \pm 1.70	37.5 \pm 1.20	20.5 \pm 1.20	18.6 \pm 1.25	5000.5 \pm 1.10	7200.6 \pm 1.35
15.07.2010	1980.2 \pm 2.05	1800.2 \pm 2.50	35.0 \pm 1.50	37.0 \pm 1.50	20.8 \pm 1.15	18.6 \pm 1.85	5000.2 \pm 1.25	7185.3 \pm 1.35
15.08.2010	1995.5 \pm 2.00	1825.5 \pm 1.80	35.0 \pm 1.75	37.2 \pm 1.25	20.8 \pm 1.50	18.8 \pm 1.35	4895.3 \pm 1.90	7173.2 \pm 1.45
15.09.2010	2010.3 \pm 1.80	1855.2 \pm 1.50	35.8 \pm 1.22	37.8 \pm 1.20	21.0 \pm 1.25	19.3 \pm 1.25	4882.2 \pm 1.20	7133.6 \pm 1.45
15.10.2010	2015.2 \pm 1.50	1855.0 \pm 1.25	35.9 \pm 1.15	38.2 \pm 1.15	21.5 \pm 1.45	19.7 \pm 1.20	4806.3 \pm 1.15	7115.8 \pm 1.80
15.11.2010	2000.6 \pm 2.50	1855.2 \pm 1.25	36.5 \pm 1.10	38.3 \pm 1.75	21.8 \pm 1.35	19.6 \pm 1.15	4705.2 \pm 1.85	7105.2 \pm 1.25
15.12.2010	2015.5 \pm 1.20	1875.3 \pm 1.20	36.2 \pm 1.20	38.7 \pm 1.45	21.8 \pm 1.25	19.0 \pm 1.50	4760.2 \pm 1.75	7103.2 \pm 1.35
15.01.2011	1995.5 \pm 2.00	1870.2 \pm 1.35	36.2 \pm 1.00	38.3 \pm 1.15	21.6 \pm 1.75	19.0 \pm 1.35	4780.2 \pm 1.25	7134.6 \pm 1.45
15.02.2011	1980.3 \pm 1.25	1865.3 \pm 1.80	35.0 \pm 1.20	37.8 \pm 1.85	20.3 \pm 1.85	18.8 \pm 1.20	4785.3 \pm 1.20	7166.2 \pm 1.35
15.03.2011	1985.2 \pm 1.15	1862.2 \pm 2.00	35.5 \pm 1.50	37.3 \pm 1.55	20.2 \pm 1.20	18.8 \pm 1.25	4780.3 \pm 1.15	7150.6 \pm 1.85
15.04.2011	1982.2 \pm 1.20	1825.5 \pm 1.95	35.3 \pm 1.20	37.3 \pm 1.15	20.2 \pm 1.35	18.6 \pm 1.15	4806.2 \pm 1.20	7150.2 \pm 1.25
15.05.2011	1980.4 \pm 1.15	1800.2 \pm 1.25	35.6 \pm 1.15	37.4 \pm 1.25	20.4 \pm 1.30	18.5 \pm 1.35	4895.3 \pm 1.85	7175.6 \pm 1.48
Breeding	April - August		April - July		April - August		December - February	