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Unusual variations in climates and production of food grains of Bihar have an effect of the gonadal cycles of avian fauna

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Abstract

The present work is mainly concerned with the ecological aspect of certain swamps (Lal Nikunj) of Madhubani and its view throwing some light on the effect on the gonadal cycles of a avian fauna reside in the said swamp of Madhubani.

This study shows eco-physiological variations of swamp water due to the climate of different seasons particularly in the north region of bihar average value taken from water and temperature are akin with the changing pattern of physico-chemical conditions of the selected swamp & reveals a sharp and different brooding phase depending upon their geographical location & adaptation in the climate of different seasons.

Keywords: avian fauna, gonadal cycles, geographical

Introduction

Unusual variations in the climates and Production of food grains of Bihar have an effect on the gonadal cycles of avian fauna due to the changeable irregular eco-physiological climate of different seasons particularly in the N. region of Bihar shore avian fauna of N. Bihar exhibit a variable range of gonadal cycles.

Swamps of N. Bihar are common habitat for important wild life fauna which have adjusted nicely and akin with the changing pattern of physico-chemical conditions of swamp. Indian avis reveals a sharp and different brooding phase depending upon their geological location and adaptation in the climate of different seasons (Bubo Corvus Passer Psittacula, Gull mallard, Snipe Jacan, Flamingo etc.).

Material and methods

Whether condition of Madhubani shown in the Table (1) and geographical location also shown in fig (1):- shows adaptations usually occur due to variations in the unusual environment leading to have a better basis four adaptation consequently survival.

Seasonal variations in air temperature; seasonal and diurnal variations of rainfall, water depth and temperature of swamps were taken and recorded.

Jacan's main sources of food are insects and macro – invertebrates picked-up from the floating vegetations of swamps.

Result and Discussion

Temperature: It is one of the most important factor of aquatic system. In fact, it the single most important factor which was profound effect on the productivity of nutrient foods. It has got multi sided effect on both living and non-living organisms. Temperature regulates the physico-chemical respiration, feeding, growth, survival, reproduction and geographical distributions of animals and plants. Atmospheric temperature, rainfall were the main factor for water depth and water temperature.

Water Depth: Besides rainfall, the water depth depends upon temperature, wind velocity and flow of water from their adjoining catchment areas, due to the thick aquatic vegetation in selected swamps water depth did not very much.

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Water Temperature: Atmospheric temperature was the main factor for water temperature regulation of the swamp. It is shown that smaller the body of water, it more quickly reacts to changes in the air temperature. As the smaller masses of water (swamps) involved during investigations, so the water temperature was directly effected by the rise and fall of atmospheric temperature. As in summer the surface of water gets rapidly heated during the day time. Hence the water temperature increased at the surface but in winter warming effect was slow in the swamp in rainy season. There was frequent intermixing of water hence no clear thermal stratification was noticed. Water temperature of tropic region in rainy months suits best for a rich growth of aquatic nutrients.

In the selected swamp temperature fluctuated from 15° C to 34° C in winter and summer months (table-1). During investigation higher temperature fluctuations were found in selected swamp.

Aquatic animals live throughout or partly of their life in water. They get themselves adopted accordingly to the local climatic aquatic and geographical conditions.

It is therefore imperative to study biotic and abiotic factors and their effects on the gonadal cycles of a swamp birds.

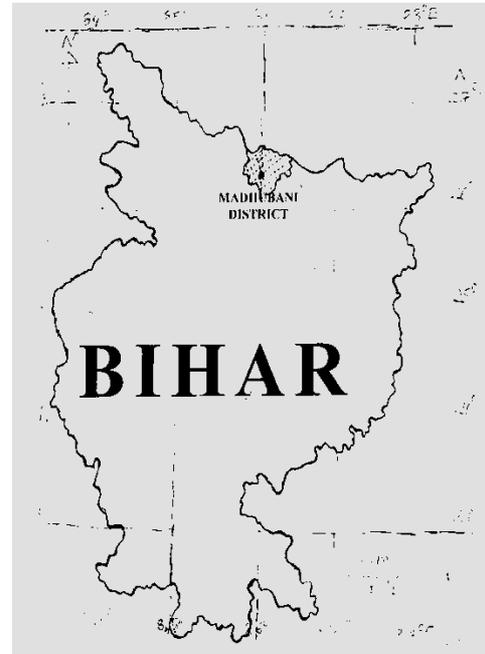


Fig 1: Geographical Location of Madhubani in Bihar

Table 1: seasonal variations in swamp physical parameter relationship with anatomical changes in gonads

Months	Diurnal Temperature (0°)	Rainfall (mm)	Water Depth (cm)	Water Temperature (0°)	Ovary Weight (mg)	Ovary Diameter (µm)	Oviduct (mg)
JAN.	18	DORMANT PHASE	70	15	160	170	85
FEB.	20	18	70	20	DORMANT	195	150
MARCH	25	19.3	75	22	190	680	2505
APRIL	27.2	35.25	90	23	400	693	2800
MAY	37.8	42	70	25.5	ACCELERATION	702	3000
JUNE	43	45	80	34	510	725	3010
JULY	40	430.3	170	29	624	994	3500
AUGUST	35	225.25	150	27	LOGRITHMIC	350	200
SEPT.	28	150	152	20	690	244	90
OCT.	26	27.05	155	21	PHASE	300	75
NOV.	23		140	18	750	190	50
DEC.	20	Dormant Phase	135	17	730		
					LAG		
					300		
					PHASE		
					205	100	60
					225		
					DORMANT		
					110		
					PHASE		
					100		

Conclusion

Swamps has great nutrient value. The size and weight of the gonads varies and also regulated by external factors. The physical factor are influenced by environmental factors.

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