

MIGRATORY BIRDS DATA AND CLIMATIC EFFECTS ON THEIR LIFE AT TELINELELAPURAM BIRD SANCTUARY IN SRIKAKULAM-A.P

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Abstract

Telineelapuram bird sanctuary is located near 5km to tekkali 65 km from srikakulam. The migratory birds pelicanus philippinensis (pelicans), mycteria leucocephalus (painted storks) are have been reaching to here every year the time between September to November for the shelter and breeding. According to my last four (2021-2024) years studies large number will come to here but some number only sustain the remaining birds were left from here by the more problems like lack of the natural shelter, ichthyofaunal diversity is decrease by the different water pollutants, enemies like civet cat and loss of the natural habitat. This migratory birds has been reaching to here by the two periods as groups. I was calculated birds number difference between immigrate to emigrate of the two periods with the help of 7x50 Binoculars by the method of average median. I was collected the information weekly once (4-times per month) the year period between September to May from last four years. I was counted the number of trees in the habitat of bird sanctuary with the help of village people and calculate the ratio of birds and trees, what is the problem of immigrate all birds why not stable here. Every year pelicans were died by the helmentic parasites, its dissected and identified intestinal parasites with the help of forest department which were died.

Key words: pelicans and painted storks average survey, Disaster problems, water infections.



Introduction

Telineelapuram bird sanctuary is located in small village at Telineelapura near 5km to tekkali 65km from srikakulam in the district of srikakulam in A.P. Its a tourism unique place in the srikakulam. Different types of migratory birds are reaching to here from the European and Asia countries like Siberia from Russia, Indonesia, Germany, Australia..etc the time between middle of September to starting of the November as a groups in the two phases for the breeding, sustain from the climatic temperature changes in their own habitats, that is first phase September middle to - October middle, the second phase October last week to November first week. The birds reaching time depends upon the climatic disasters like cyclones that is the north Andhra facing any cyclonic effect in the September the birds will reach to here last week of this month instead of the middle of the September. The birds making the nests after selection of the paring, according to my observation the painted storks are maintain the monogamy (male select one female) but the pelicans maintain more pairing (male maintain with more than one female) for the breeding on tree branches in the natural habitat.

This bird sanctuary is occupied more or less 500-600 meters that is 1.65 hectares as a circle including village and around the village. Almost all birds or making their habitat on the natural trees. Before 20 years back more than (700-800) were come to here for their life sustain (According to Andhra University studies) but today the immigrated birds population is more or less below thousand (850- 950), number calculation is up to 2020. According to above information every year the number is randomly little bit increase or stable why because the surrounding of this bird sanctuary more aquatic area is present for their feed that is ponds ,canals, especially 3000-3500 hectors natural wet lands are major food resource.

This bird sanctuary is a eco-friendly with the village people and their surrounding people. The village people think about them as God gift, why because their visiting is indicates to the estimate to their crop productivity. When the birds were came the time between September to November the tourists visit will start. Painted storks are short distance migratory birds, mostly present in the south Asian courtiers especially located in south Himalaya regions. They are collected the feed from the more or less 7-8 cm depth ,shaking muddy water with the beak and legs and capturing the feed. They will not sustain in heat areas especially desert areas, high hill areas. Ramana Rao, J.V., 1986., Murugesan M. (2011), Ramamohan and Kameswara Rao (2017). Spot-Billed Pelicans are distributed more than 25 sites in south India especially the states of Andhrapradesh, Tamilanadu, Karnataka. (Subrahmanya, 2005 and Urfi, 2011). . They will mostly occupied around the natural wetland areas and catch the feed more than one meter depth, catch fish and swallowing. Telineelapuram Bird sanctuary was recognized as a IBA site (No. 229) and belongs to A1 category and support breeding of Spot-Billed Pelicans and Painted strokes.

METHODS AND MATERIAL

Telineelapuram is a natural habitat to the migratory birds, its located 5km distance to tekkali and 65km from srikakulam. All most now pelicans and painted storks only came to here the time between Septembers to November by the two phases for the shelter, adopt to temperatures and breeding. After the completion of breeding according to climatic cycles they will Emigrate to orison places along with their young once the time between middle of April to middle of May.

1. Calculated the average number of birds which were come to here and left from here after the lack of the shelter. The number was collected between the difference of first phase and second phase pelicans and painted storks with the help of 7x50 Binocular and gathered the information from the village warden and village people. (Bibby et al., (1992), Nichols et al., (2000), Bart and Earnst (2002), Thompson(2002).
2. Calculate the Death rate of the pelicans by the effect of helminthes and natural death rate of chicks and counted the habitat trees based on the mean value between used and unused trees.
Subramanya S. (2005).
3. Water samples and fish samples were collected randomly based the mean calculations' and values also taken by average.

RESULTS

Telineelapuram is a natural habitat to the migratory birds, its located 5km distance to tekkali and 65km from srikakulam. Two type of birds pelicans and painted storks only came to here the time between Septembers to November by the two phases for the shelter, adopt to temperatures and breeding. I was studied last four years the time between 2020 september-2024 April on this bird sanctuary and calculate the number based on the number of nests with the help of 7x50 Binocular. The pelicans pair(female) is mostly laying 2 eggs rarely one egg that is one nest have the mostly two young ones rarely one young one but painted storks each pair (female) mostly three eggs rarely two eggs that is one nest is have the mostly three young once rarely two young once. The immigrate birds are calculate based on the year. In the year 2020-2021 The first phase more are less 630 birds are reached here, pelicans are 190, and painted storks are 440. second phase more are less 212 birds are reached here, pelicans are 80, and painted storks are 132, The total percentage between pelicans and painted storks (25.17%-74.32%),that is pelicans(12-80=42), painted storks (150-132=18) were left lack of habitat , percentage is 60/272=22.00%. following the years 2021-2022 The first phase more are less 656 birds are reached here ,pelicans are 196,painted storks are 460. second phase more are less 278 birds are reached here ,pelicans are 94,painted storks are 184. The total percentage between pelicans and painted storks (29.76%-70.23%) , that is pelicans(124-94=30), painted storks (198-184=14) were left lack of habitat , percentage is 54/322=16.77%. the years 2022-2023 The first phase more are less 612 birds are reached here ,pelicans are 192,painted storks are 420. second phase more are less 323 birds are reached here ,pelicans are 108,painted storks are 215. The total percentage between pelicans and painted storks (34.54%-65.45%), that is pelicans (134-108=26), painted storks (226-215=11) were left lack of habitat, percentage is 37/360=10.27%. the years 2023-2024 The first phase more are less 640 birds are reached here ,pelicans are 202,painted storks are 438. second phase more are less 306 birds are reached here ,pelicans are 82,painted storks are 224. The total percentage between pelicans and painted storks (32.34%-67.65%), that is pelicans (98-82=16), painted storks (236-224=12) were left lack of habitat, percentage is 30/334=8.98%.

After complete the duration period from September to April the birds will start the emigration as a two phases. I was calculate as year wise in the year 2020-2021 The first phase more are less 1369 birds are emigrate from here, pelicans are 373, and painted storks are 996. second phase more are less 464 birds are left from here, pelicans are 156, and painted storks are 308, The total percentage between pelicans and painted storks (28.79%-70.98%),the total birds are 1837, following the years 2021-2022 The first phase more are less 1404 birds are emigrate from here, pelicans are 385, and painted storks are 1019. second phase more are less 572 birds are left from here, pelicans are 183, and painted storks are 389, The total percentage between pelicans and painted storks (28.74%-71.25%), the total birds are 1976, 2022-2023 The first phase more are less 1306 birds are emigrate from here, pelicans are 376, and painted storks are 930. second phase more are less 633 birds are left from here, pelicans are 209, and painted storks are 424, The total percentage between pelicans and painted storks (30.17%-69.82%), the total birds are 1939, 2023-2024 The first phase more are less 1346 birds are emigrate from here, pelicans are 394, and painted storks are 952. second phase more are less 619 birds are left from here, pelicans are 160, and painted storks are 459, The total percentage between pelicans and painted storks (28.19%-71.80%), the total birds are 1965. According to my observation in last four years the number is little bit changes that is slowly increase , If we will develop the natural habitat the number will be increase why because total immigrate birds not sustain lack of the natural habitat.

The chick death rate also high why because the birds making their nests on the open natural trees and most of nests are located side by side. Sometimes the birds quarreling each other for their outside shelter. At this time the nests will disturbed and chicks will fall down. The down of the trees land is heard and open without protection of the net support. when the bird was fall down all most it will die or rarely live with disable. So according to study the chick deaths are the year 2020-21 deaths of pelican chicks 7 out of 259 and painted storks are 8 out of 732.(2.70%-1.09%) The following years 2021-222 deaths of pelican chicks 8 out of 278 and painted storks are 10 out of 764.(2.87%-1.30%),2021-222 deaths of pelican chicks 8 out of 285 and painted storks are 10 out of 720.(2.80%-1.38%)2021-222 deaths of pelican chicks 8 out of 270 and painted storks are 9 out of 751.(2.96%-1.19%) comparison to painted stork pelican chick death rate is increase.



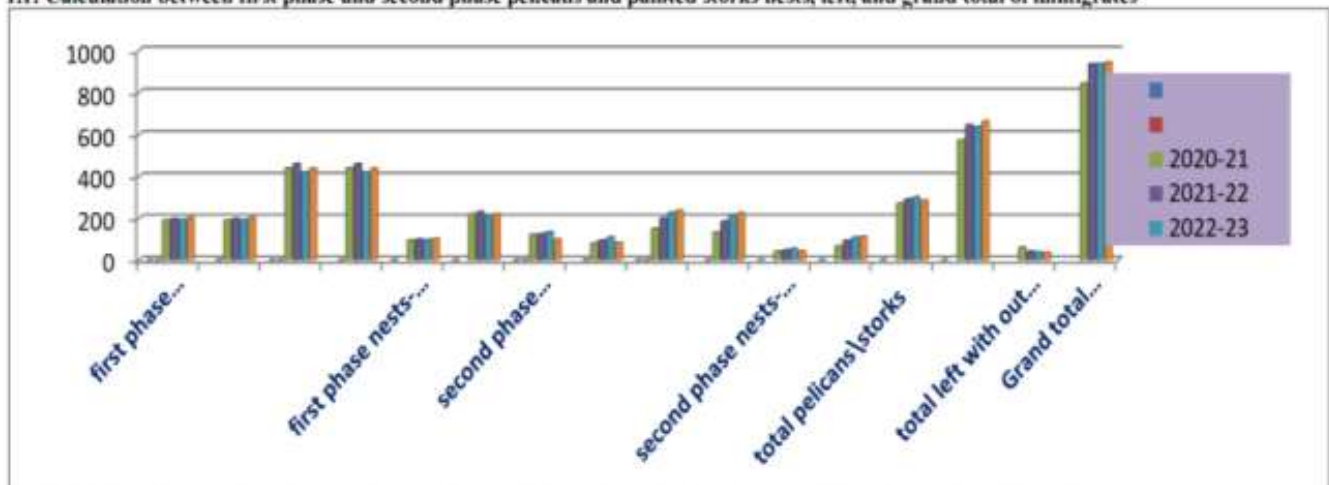
1.1: Calculation between first phase and second phase pelicans and painted storks nests, left, and grand total of immigrates

ours	year	first phase immigrate birds				first phase nests- pelicans/storks		second phase immigrate birds				second phase nests- pelicans/storks		total pelicans/storks		total left without shelter	Grand total immigrate birds arrival
		pelicans		painted storks		pelican	p- stork	pelicans		painted storks		pelican	p- stork	pelican	p- stork		
		arrival	stable	arrival	stable			arrival	stable	arrival	stable						
1	2020-21	190	190	440	440	95	220	122	80	150	132	40	66	270	572	60	842
2	2021-22	196	196	460	460	98	230	124	94	198	184	47	92	290	644	40	934
3	2022-23	192	192	420	420	96	210	134	108	226	215	54	107	300	635	37	935
4	2023-24	202	202	438	438	101	220	98	82	236	224	41	112	284	662	34	942

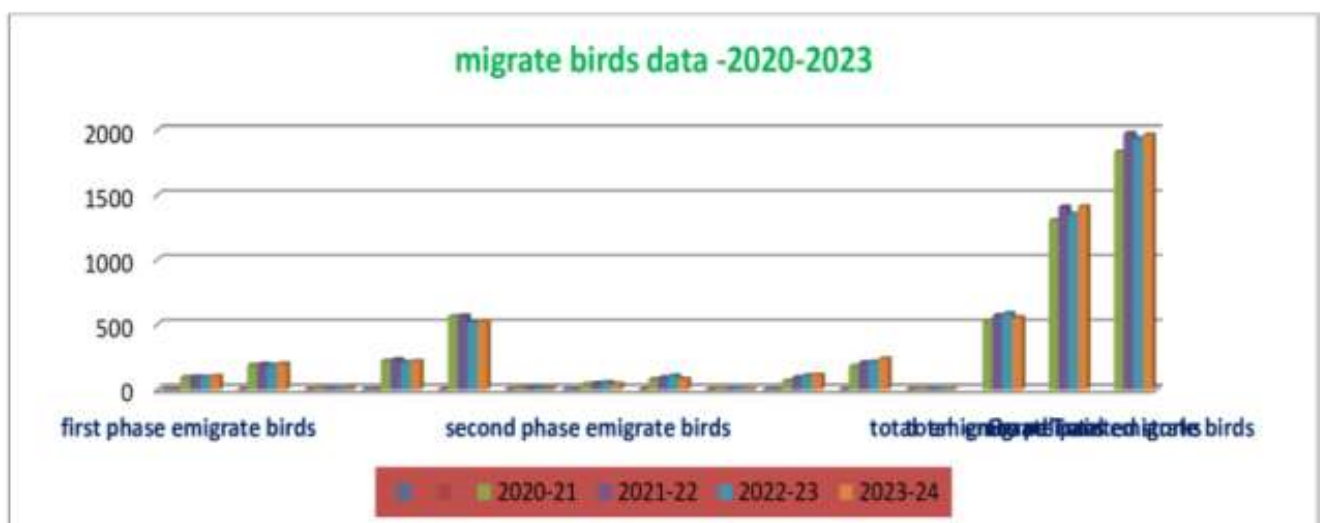
1.2: Calculation between first phase and second phase pelicans and painted storks nests, left, and grand total of emigrates

	year	first phase emigrate birds						second phase emigrate birds						total emigrate pelicans	total emigrate painted storks	Grand Total emigrate birds
		pelicans			painted storks			pelicans			painted storks					
		no-nests	no-chicks	chick deaths	no-nests	no-chicks	chick deaths	no-nests	no-chicks	chick deaths	no-nests	no-chicks	chick deaths			
1	2020-21	95	188	5	220	562	6	40	78	2	66	178	2	529	1304	1833
2	2021-22	98	194	5	230	566	7	47	92	3	92	208	3	568	1408	1976
3	2022-23	96	188	4	210	518	8	54	104	3	107	212	2	585	1354	1939
4	2023-24	101	198	6	218	522	6	41	80	2	112	238	3	554	1411	1965

1.1: Calculation between first phase and second phase pelicans and painted storks nests, left, and grand total of immigrates

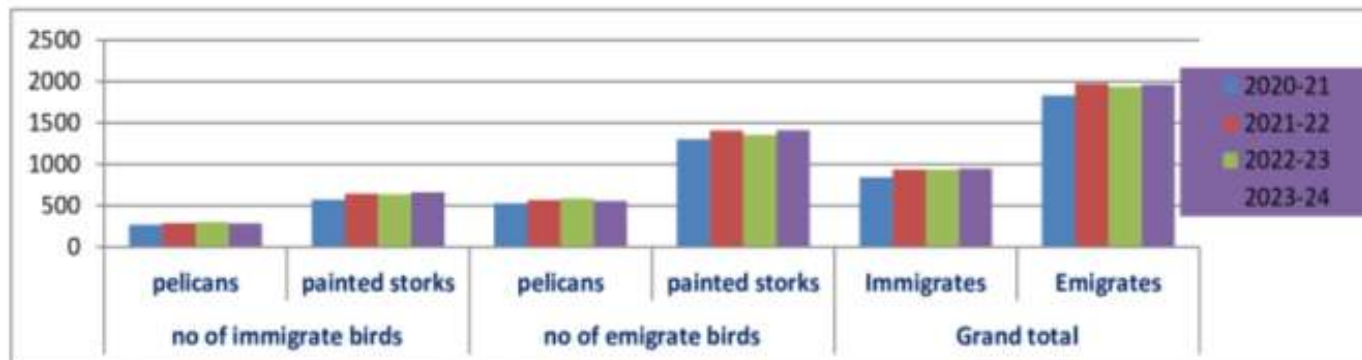


1.2: Calculation between first phase and second phase pelicans and painted storks nests, left, and grand total of emigrates



1.3: The difference between immigrants and emigrant total birds based on year

	Year	no of immigrate birds		no of emigrate birds		Grand total	
		pelicans	painted storks	pelicans	painted storks	Immigrates	Emigrates
1	2020-21	270	572	529	1304	842	1833
2	2021-22	290	644	568	1408	934	1976
3	2022-23	300	635	585	1354	935	1939
4	2023-24	284	662	554	1411	946	1965



1.4: Chick deaths between pelicans and painted storks based on year:

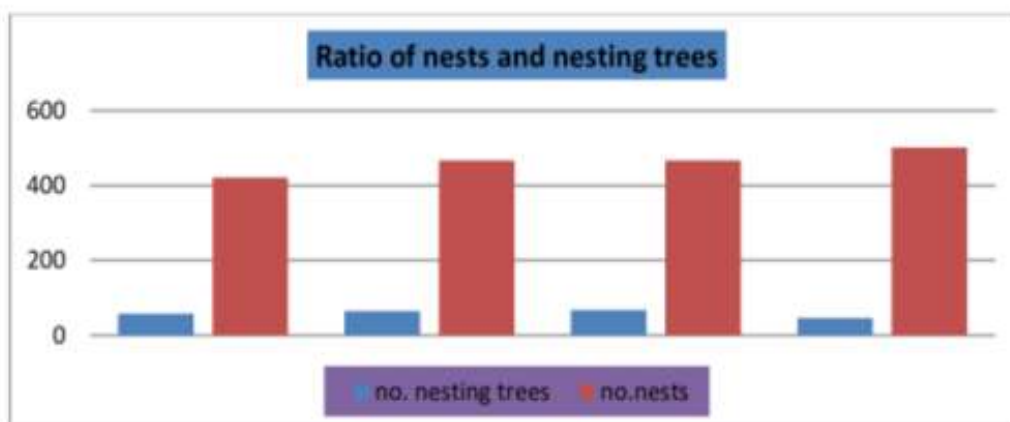
S.No	Year	no.of chicks		pelicans chick deaths	percentage%	painted storks chick deaths	percentage%	Total deaths	Total percentage%
		pelicans	painted storks						
1	2020-21	259	732	7	2.70%	8	1.09%	15	1.51%
2	2021-22	278	764	8	2.87%	10	1.30%	18	1.79%
3	2022-23	285	720	8	2.80%	10	1.38%	18	1.79%
4	2023-24	270	751	8	2.96%	9	1.19%	17	1.66%



In this bird sanctuary the migratory birds are facing more problems in the present climatic changes like pollution, natural disasters, decreasing of ichthyofauna etc. This bird sanctuary is occupied more or less 1.65 hectares belongs to the 60-90 trees including village houses. The all trees not comfortable to the pelicans and painted storks why because most of them delicate(low strength),55-65 trees only comfortable to birds out of 90 and the same time present tree surface volume is decrease by the use of the birds stool ,standing and making nests. The second reason is trees are fall down and damaging by the natural disasters like big cyclones and over rain. The government not conducting any plantation programs in this area. So some of the is again left from hear lack of proper natural habitat.

2.1: Difference between nests and nesting trees based on the year:

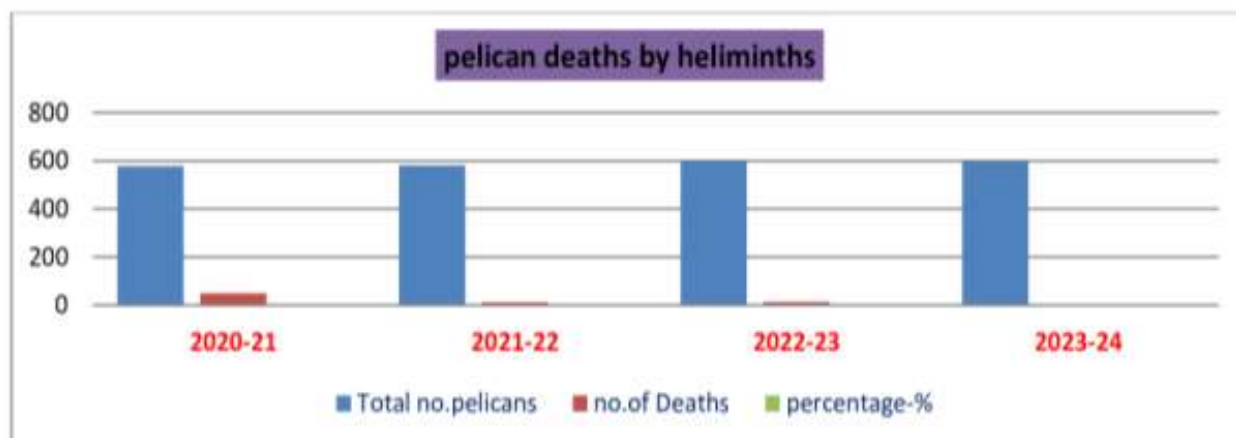
s.no	Year	no. nesting trees	no. nests
1	2020-21	58	421
2	2021-22	65	467
3	2022-23	67	467
4	2023-24	46	501



Most of aquatic ecosystems occupied around the bird sanctuary including one of the largest natural wet lands. This water hubs are mostly connecting with agriculture crop lands. Pollutants, fertilizers and insecticides are entering in to the water, so the water and land is increase the pollution. SO micro organisms and parasite pollution is increase, This pollution effect directly and indirectly effect on the birds. Most of the pelicans are infecting by this helminthes and some are died . The helminthes infect fishes and other aquatic organisms like frogs, snakes, crabs, prawns etc. This Ichthyofauna is the feed of the migratory birds. According to my studies helmenthic parasites are entering in to the birds intestine through the aquatic feed. I was collected the random fish samples with the help of fisher mans with use of the drag nets and fish traps in the wetland area and other ponds. I was identified the helmenthic parasites in my collected fish samples after the dissection. We are identified helminthic parasites in the diseased pelicans when we are dissected with the help of forest department which was died. I was counted death pelican population as per based on the year. The year 2020-2021 death number is 49 out of total population 578, the death percentage is 8.52%. The following years 2021-2022 death number is 13 out of total population 578, the death percentage is 2.23%, 2022-2023 death number is 14 out of total population 599, the death percentage is 2.23%, 2023-2024 death number is 0 out of total population 596, the death percentage is 0%.

3.1: Pelicans deaths by the helminthes based on the year:

s.no	Year	Total no. Pelicans	no. of Deaths	percentage-%
1	2020-21	578	49	8.52%
2	2021-22	581	13	2.23%
3	2022-23	599	14	2.23%
4	2023-24	596	0	0.00%



Discussions

last 30 years data was studied and analyses after sharing my studies. I was collected the data about the migratory birds and study the surroundings water, feed, Natural habitat recourses from last 4 years consent of Telineelapuram bird sanctuary. I was identified the major information on migratory birds, some percentage of birds are left from here at the time of arrival lack of the natural habitat habitat, discussed about the difference between nests and young once ratio, the percentage of pelicans and painted storks life habitat and mortality rate of the young once. The information about the variations of the two times arrival and difference between their number counting selecting of the trees and making their nests. I was discussed here study on the environmental factors and their effect on the migratory birds normal life and natural habitat. Identified the parasitic problems effected by the helminthes. Pelicans and Painted storks nesting behavior was studied and provided data by Adesh Kumar and Amita Kanaujia (2015). Vaithianathan and Jeganathan (2012) studied intensive studies were carried out in four colonies two colonies with 746 nests in 60 trees. Desai, J.H., (1971), Findholt, and Anderson, (1995), Kannan, and Manakadan, (2005).

Conclusions

Migratory birds are come to here the period between September -November in every year as cyclic process, but some birds are go back to other places from here, why because the proper natural habitat is not present and year to year the trees number and surface volume is decrease, if the government will take proper care on this new plantation and increase the strengthen., The major acknowledgement is the immigrated bird population is little bit increase but we can increase the plantation and natural habitat the number will increase more. Second reason is increase the chick mortality lack of the proper net specialty, if proper net system will making properly under the trees physical chick mortality is decrease.

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