RESULTS AND DISCUSSIONS

CHAPTER – FOUR

RESULTS AND DISCUSSIONS

A brief discussion is made in connection with different birds, their specific habitat, specificity of food, nesting sites and the courtship behaviour etc. the discussion is made according to different groups of birds and their habitat viz;

1. Local passerine birds and migratory passerines.
2. Insectivorous birds in and around the sugarcane fields in Krishna basin, live stock sheds and horticulture gardens (Grape, Mango and Guava gardens).
3. Frugivorous birds.
4. Carnivorous birds.
5. Local and distant migratory birds in Krishna and Yerala River beds.
6. A case study of Indira Gandhi bird Sanctuary at Mayani and presently built lake at Alsand on north-east border of Palus Tahsil.

Even due to severe pollution threat, the population of local birds has been depleted, therefore at first time; the survey of local birds and their conservation have taken into consideration.

A) Passerine birds -

The passerine birds include a vast majority of birds, inhabited in vicinity of human beings. The population of domestic house sparrows is rapidly depleting in metropolitan cities viz; Bangalore, Pune, Mumbai and other newly built cement jungles (Rajashekar and Venkatesha, 2008). Where they lack facility of nesting and watering, however, the population

of house sparrows has been increased in villages of rural drought prone zones where facility of crumbling building, wall crevices and traditional hanging water hoppers available. Due to thick vegetation of thorny *Prosopis*, the hiding place have had increased in semi arid regions.

Indian baya weaver is most common bird of Krishna River basin in a Palus Tahsil. It is a seasonally migratory bird. During monsoon it descends down in River basins. A nest at inaccessible branches of tree freely over hanging on the aquatic reservoirs. Due to agricultural encroaching in Krishna basin, the thorny trees of *A. nilotica* have been considerably reduced in number. Therefore, a maximum number of nests are found on a single tree or birds may be forced to built up nest on telephonic wires (Betts, 1953), often multi-deckered nests were noticed because of polygamous grid in the males. Sometime, a single skilled male can built several nests on the same tree meant for the attraction of more females.

After the active breeding period, the weaver birds form a flint and they practically left the nests. At the same time, rice paddies are harvested in the valley, the young generations vigorously attack the panicles of rice.

Common Indian myna (*Acridotheres tristis*) inhabits in close vicinity of human and is very common. So the study of its mixed roosting, population fluctuations, nesting sites (Anil and Bastawade, 1991; 1990; Bai et.al, 2003; Panicker, 1978; Perrins, 1976; Pogue, 1994; Sengupta, 1982; Weddle, 2000).

It is clear that availability of a variety of food sources for both adults and nestlings and essential nesting sites around the food sources primarily play an important role in abundance of house sparrow populations.

B) Insectivorous birds -

Many more passerine birds and other birds are basically insectivorous viz; Red vented bulbul, Indian robin, *Pica pica*, different flycatchers, seven sisters, common myna, Grey shrike, Bay-backed shrike and so on (Bhalla et.al, 1989; Sharma, 1979). It is found that warblers, Ashy prinia, Indian robins hours together endovoured in the fronds of sugarcane blades, they remove black aphids, young ones of white wooly aphids, nymphs, ants and the termites. They build up the nest either in fronds of sugarcane field or *Cesbania indica*, so that the young generation also could attack the insect pests of sugarcane climbers and other grasses.

A noteworthy example of Fantail flycatcher is dynamic. It is not only removing the insect pests from the dung live-stock forms but also dives the insects on the wings in fronds of fruit plants. It scoops out insects around the mango inflorescences. Formerly this species had reported from the foot hills of Himalaya and the lower Godavari basin in Andhra Pradesh (Grewal, 1993) but recently, it has been invaded in vegetation of upper Krishna River basin and found to be much promising in the control of varied insect pests.

Primarily, Indian common myna, brahminy myna and red vented bulbuls take heavy tall of insects on electrical poles in towns, agricultural fields, and horticultural farms of grapes, guava and mangoes, but they can also enjoy berries and figs as a sweet dish.

Author had observed that the birds fed on raw intoxicated grapes had experienced anxiety and death. It had been reported by Prof. Bakre (1993). A grape fruit intoxication in Indian cuckoo had observed in Palus Tahsil (Mote, 1996).

C) Frugivorous birds

Among frugivorous birds the presence of Parakeets, barbets, common myna, red vented bulbul, brahminy myna, rosy passer, common grey hornbills are common in Palus Tahsil. The family of rose ringed Parakeet generally recide in hollow tree trunks of old mangoes. They commonly feed on oily seeds of sunflower, so they help in pollination which is necessary. Pigeons are indicator of air pollution (Bakre, 1993). They are considered as the messengers in early times.

a. Temporary migration in Parakeets

In every year, in the month of December and January, the young parrots gather together and form the flint. The flint includes about 500-700 number of individuals. They stay on a single tree, during next 3-4 days they disperse in deme of 5-7. In such a way new couples are formed. They follow their usual routine remote habitat. This type of facultative or temporary migration might be for the genetical differentiation which could avoid sexual pairing between brothers and sisters.

b. Seasonal migration in Rosy Passer

Regularly at every year in the month of February and March thousands of Rosy Passers visit Krishna River basin in Palus Tahsil. They show Parabolic swarms in the sky. They basically use to feed figs of Ficus bengalensis but due to deforestation of Baniyan tree along the newly built roadside, they have had built pressure on harvested Jawar seed grains in Palus and adjoining Tasgaon and Miraj Tahsils.

c. Common grey hornbills

About hundreds of grey hornbills are recided on the old silver oak trees in protective premise of Kirloskar steel industry at Ramanand nagar. Generally 5-6 individuals of family use to play on the dried trees. Hornbills are also found on dried trees at Krishna River bank proper. Due to deforestation, there are no suitable nesting sites, revealed by Ranga, M.M. in 2004.

d. The barbets

The barbets are found in tunnels, on dried trunks of *Melia azadirachta* and *Ficus retusa*. They basically feed on termites, mites and figs. The barbets breeds during February – March, both partners take part in feeding process. The barbets felt to casualty by consuming the beads of grapes. As the grape gardens spreaded with contact poisons, fumigants etc (Anon, 2003).

e. Carnivorous birds

The black Kite shikra (*Accipiter badius*), white necked storks, Kestrel (*Falco tinnunculus*), spotted owlets and several other species of birds. Sagareshwar hill range (Sathe, 2001). The birds feed on wild rats, moles, wild hare, lizards and snakes. About 10-12 families of white necked storks have reported from Palus Tahsil. They built a nest in crown of tamarind. They experience double breeding period in a year, one in October – November and other in March - April. The population of storks is dependent on the density of catfishes in reciding water levels of River and the lakes.

Brahminy kite (*Haliustur indus*) is local migratory bird. It is found on the western coast-line. They drift during monsoon and stay in dried regions of Deccan, built nest high up in the crowns of *Eucalyptus* trees, in

existed closed protective premises of S.T. Stand, Tahsil and PWD offices. They perform soaring flight and explore the different aquatic resources for the cat fishes (Grewal, 1993). Crow- pheasant or coucal (*Centropus sinensis*) most common in gardens and vegetations in nalas and streams. It is also carnivorous. It feeds on lizards, frogs and small snakes. It also recovers the insect pests.

The spotted owlets (*Athene brama*) found at several spaces like building crevices and trees on River bank often sits on telephonic wires. It feeds on small rodents, lizards and birds. During dusky time, eventually it is attracted towards human faeces. Author observed 2-3 casualties along the road sides. The study of red jungle fowl reveals that it is the ancestor of all domestic poultry and may be regarded as beneficial to mankind (Kaul, et.al, 2004; West, et.al, 1989). The continuous decline in the white backed vultures (*Gyps bengalensis*) due to poisoning, viral infections and the pollution (Chhangani and Mohnot, 2004).

f. Local and distant migratory birds in Krishna and Yerala River beds

A vast majority of aquatic/ semi-aquatic and wadding birds have existed both in Yerala and Krishna River beds. Since Yerala river is rejuvenated with cyclic freshwater discharge from the underground 'Arphal' tunnel. The fresh water habitat of Yerala is also flourished due to built of Baliraja, Wazar, Nimani and Vasagade bandhs, beside to this, jackwells are also found in the River. This makes the habitat quite suitable to local wadding birds and migratory aquatic birds.

The population of little cormorant, Green heron, pond heron, cattle egret, large egret white breasted water hen, coots, black winged stilt, pied kingfisher, small blue kingfisher, white breasted kingfisher are common in Yerala River marshes.

The Jackwells in the Yerala River form an ideal habitat to little cormorant. They glide over water in the bandhs, but when water level is recided, they take shelter in the jackwell. After feeding on catfishes, they spread over the cement embankment of the wells. In a deme of little cormorants there may be 1-25 individuals (Grewal, 1993; Saxena, 1986).

The account of birds in Keoladeo Ghana has given by Krishan in 1984. The breeding of painted storks and herons have been reported in the Bharatpur Sanctuary. A film on monsoon birds in Keoladeo Ghana had been produced by Stanley, thus Bharatpur Sanctuary is a birds paradise on the earth.

A variety of bird species were also present in that flooded swampy area of Krishna River, like the large population of resident birds like coots, little grebes, little cormorants, little egrets, and cattle egrets. Additionally various types of migratory birds were also noticed like Northern shoveller, Ruddy shelduck and while wagtails along with other waders. These copious migratory birds were first visitors to the area. The subterranean habitat of these aquatic birds clearly implies that the water is still 8-10 ft. in depth (Rawat et.al, 2008).

Every year the flamingoes migrate towards the Indira Gandhi bird Sanctuary at Mayani in huge number but since last decade the number is tremendously reduced. Most of population is suffered from the avian diseases like cynobacterial toxins, avian cholera or tuberculosis and man made pollutants. The report is noticed from the vital feeding site at Kenya's Lake, Bogoria.

The burning problem is the water pollution which impacts on the migration of birds like common cranes, geese, herons, pelicans, ducks,

gulls and terns (Yadava and kumari, 1993). The migration at Bharatpur had been affected by 'Gulfwar'.

As a case study, the Alsand lake and famous lake at Mayani are also studied. The lake at Alsand is recently built in 2002. It has occupied 4 sq. km. area and receives the surface runoff from adjoining Khambale village. About 100-200 cattle egrets, spoonbills (70 in numbers) and a number of Ibises retreat the habitat at every year during winter. The painted storks visit the Alsand lake and can also exploit adjoining habitat of Baliraja and Wazar weir. About one or two families of painted storks visited the lake. After feeding in morning time they roost in frond of *Acacia nilotica* located in back water (Ali and Futehally, 2004; Kothari, A, 2007).

The breeding of painted storks had observed in Keoladeo Ghana at Bharatpur during the monsoon (August – September) (Kothari A, 2007). The painted storks migrates from Iran, breeds at Bharatpur and are radiate in different flints in dry parts of India. They avoid overlapping of niche. They also help in feeding mechanism of spoonbills by sturring the stagnant water for the capture of catfishes.

The Mayani is main landing ground of migratory cranes, storks, flamingoes and grebes. The migration of siberian crane and flamingoes was first noticed by Prof. Gaikwad early in 1980. He has also reviewed a metallic ring from the leg tagged by ornithological research center at Tehran. The Sancturary is established during 1984. The flamingoes feed on aquatic *ottolia*, seeds of other aquatic plants, detritus, worms etc. Later on in compass of 10-20 kms. from the Mayani about 15-20 lakes have been constructed. The similar type of habitat was also noticed at Yeralawadi tank, Jambhulni tank, lake at Pingali and series of percolating tanks in Man and Atpadi Tahsils could also support the equal number of

fauna of migratory birds. The demoiselle crane prefers still dryer zone at the Mayani viz. the Solapur district and part of Bijapur state.

Among the migratory birds, the painted storks, herons, the little cormorants and Ruddy shellducks feed voraciously on catfishes (*Rita rita*) and top minnows which would be abundant during the winter season with the recided water levels.