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Poaching of water fowl at different water bodies of Nalgonda district of Telangana State

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Abstract
Perennial and non-perennial water bodies attract large number of waterfowls during winter season. Due to over exploitation of these water bodies the winter visitors are facing several threats. Among the threats poaching activity is the main reason for decline of water birds in many wetland areas. The present study highlighted poaching activity at 8 different Perennial and non-perennial tanks of Nalgonda district of Telangana state. The techniques adopted by the local people for trapping the birds vary significantly. The mortality of the water birds in both the tanks showed high for Ducks (3644) followed by waders (2805) during the study period. Among the ducks Lesser Whistling Teal mortality was predominantly high (26.3) followed by Pintail (24.12), Gargany, (19.54), Pochard (10.2) Spotbilled duck (7.30), Comb duck (6.92) and Shovellor (5.87) while in non-perennial tanks mortality high in Pintails (29.83) followed by Garganey (22.40), Lesser whistling teal (22.08), Pochard (8.63), Spotted billed duck (7.06), Comb duck (6.92) and Shovellor (4.87). The other birds such as Coots were also significantly found in the catches which ranged between 106 - 154 birds. The percentage of birds killed showed increasing trends in all the years of study and ranges between 4.2 to 71.9%. The overall percent catches were significantly high for coots in both perennial and non-perennial tanks.

Keywords: Poaching, waterfowl, different water bodies, Nalgonda, Telangana.

1. Introduction
India contains a large number of internationally significant wetland sites (Anjaneyulu, 1991) [1]. Wetlands occur in different geographical regions as varied as the cold arid Ladakh, the wet Imphal, warm arid zones of Gujarat & Rajasthan, the tropical Monsoon zones of Central India and the wet lands humid zones in Southern India (Trisal, 1993) [2] . These wetlands support a bewildering array of bird species. Many human cultures have lived among and even depended upon wetlands for centuries. These ecosystems were maintained over hundreds of years for a variety of purposes and are a lasting tribute to the enlightened attitudes to wildlife enshrined within the Hindhu Philosophical traditions. Countless marshes and lakes in India have until recently been famous for their rich bird size, but the most recent information available suggests that bird populations are beginning to seriously decline (Anjaneyulu, 1991) [1].

The total wetland area of the country is about 4.1 million hectares of which natural wetlands occupy an area of 1.5 million hectares and the rest is occupied by man-made wetlands (Table 1.1). Over 1500 large and medium sized dams have been constructed in Indian science 1947. In 1984-85, 176 large and 447 medium sized projects were in progress (Goel, 1993) [3]. These manmade reservoirs now cover about two hectares in total. In addition, there are innumerable minor irrigation projects, percolating tanks and village ponds. Man-made wetlands may also include canal seepage areas; water logged areas, settling tanks, sewage treatment ponds and inundated cultivation like paddy fields, all of which are used by waterfowl.

Many of these areas are severely subjected to human population pressure resulting millions of acres of wetlands been destroyed by drainage, expansion of agriculture and local demand for fuel and fodder, but the quality of the millions of acres has deteriorated from siltation or other forms of population.

In Telangana over 291 large and medium sized natural wetlands consists of 100,457 hectares of have been identified. Apart from these, about 19,020 man made and smaller size wetlands with water spread area of 425,892 hectares were recorded. Most of the wetlands in Telangana are directly or indirectly connected with major river systems like Krishna, Godhavari and its

tributaries. These areas sustain number of migratory and resident water bird populations. The status of many important wetlands is not fully known in Telangana state.

These wetlands are rapidly degrading due to natural and human factors. About 75% of the wetland areas are presently under some form of agriculture use. Siltation and eutrophication are main increasing problems in these wetlands. This is largely due to soil discharge from the agricultural fields and absence of adequate forest cover. In addition, the construction of roads and bridges ignoring water flow adds to the wetlands, resulting in the decrease of their productivity. The main reasons for fall in fish production could be decreased fishing area, increased human population pressure on habitat, competition from agriculture and encroachments in the area for culture fisheries. A number of wetlands have been converted into fisheries and aquaculture ponds, which leads to the loss of basic natural wetland characteristics and an alarming reduction of biodiversity. Many wetlands have been lost due to the urbanization and development of embankments in the areas leading to adverse effects. Large scale shooting, netting and trapping of waterfowl has been further affecting wetlands. The present study highlights extent of poaching of different waterfowl at various perennial and non-perennial tanks of the Nalgonda district of Telangana state and remedial measures for long term conservation of waterfowl in the region.

Study Area

Nalgonda district lies in the southern part of Telangana state, between longitudes 78° 40' - 86° 5' E and latitudes 16° 25' - 17° 5' N (Fig. 1). Rivers Kshina, Musi, Aler, Dhindihallia, Kangal and Pedda Vagu and their interconnecting channels account for a large number of reservoirs, lakes and tanks in this region. Four tanks of both perennial and non-perennial nature were selected for the present study. Salient features of the study tanks given in table 1.

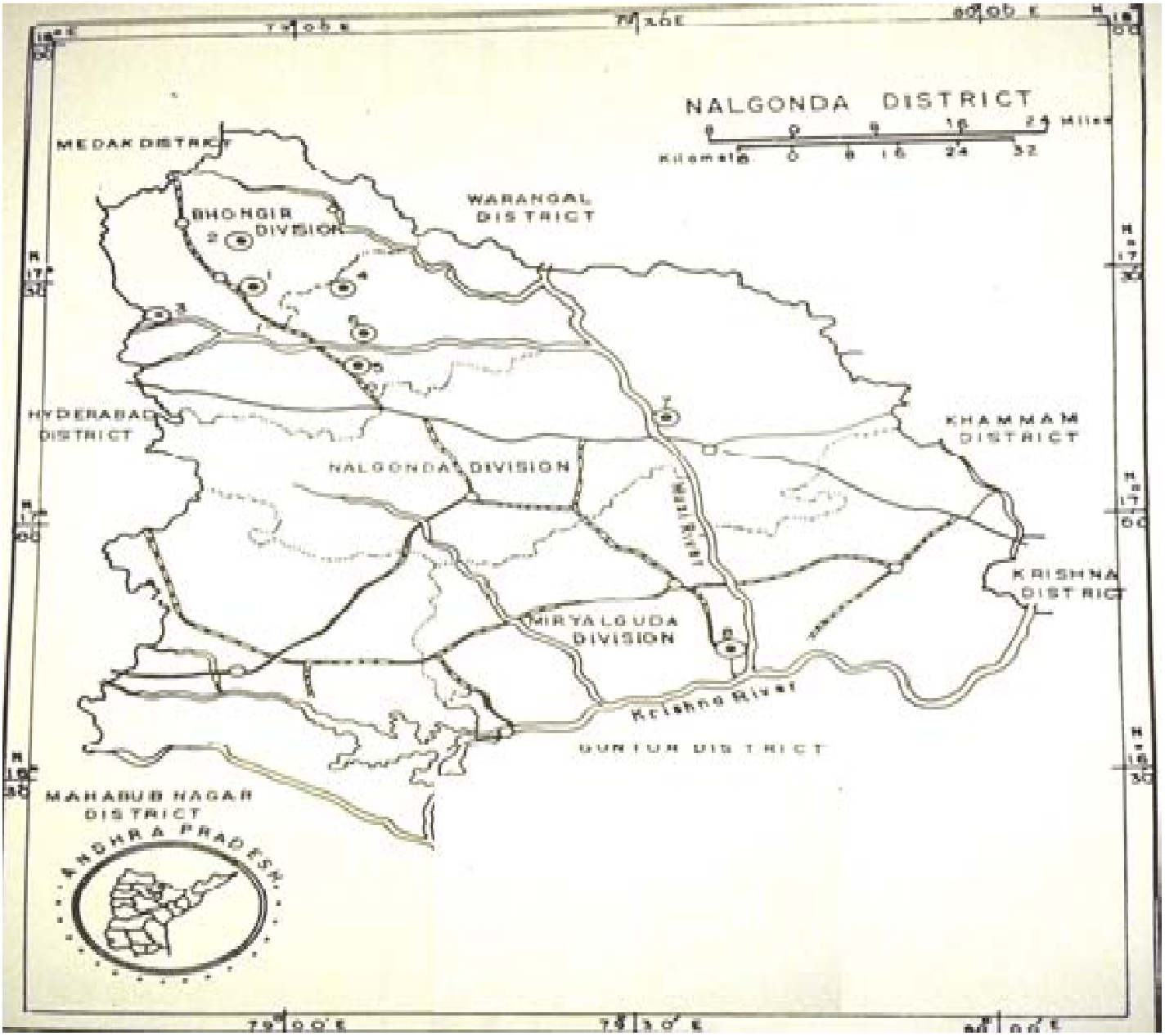

Fig 1: Location of the study site

Nalgonda district enjoys semi-arid type of climate, characterized particularly by hot summer and a low degree of humidity except during the southwest monsoon between June-September (Average rainfall 598.7 mm) and the northeast monsoon between October-February (Average rainfall 123.72 mm) with an average maximum and minimum of 43 ^{0}C during the month of May and drops to the minimum of 10 ^{0}C in the month of December. The average relative humidity recorded at 8.30 A.M. ranged between 31% to 77% during the study period.

Four tanks of both perennial and non-perennial categories were taken up for the investigation and monitored during the study period spanning from November 2008 to March 2011. These tanks are Thummalaguda tank (5), Vemulakonda tank (6), Dameracherla tank (8) and Solipet tank (7) of the former category, and Raigir tank (2), Bhongir tank (1), Atmakur tank (4) and Anantharam tank (3) of the study tanks are dealt elsewhere (Vadudeva Rao *et al.*, 1997) [8].

Methods

The bird population was surveyed by line transect method followed by imaginary grid method (Gaston, 1973, Stewart and Kantrud, 1972). During each observation along with the free bird number, the traps and the birds trapped in these at various places were counted and recorded throughout the season. Different bird species were identified and the percentage frequency of poaching of major waterfowl was calculated. Local inhabitants and traditional fishermen at all the areas were interviewed to get an idea about the type of traps and their skills and also the aquatic bird populations (Anjaneyulu *et al*, 1996) [6].

Results and Discussion

Poaching of waterfowl

Poaching of wild birds is a regular practice in perennial and non- perennial tanks during the season. The villagers are mostly involved in this activity. Among the waterfowl, especially the migratory waterfowl are extensively hunted in these tanks. Though, it is quite clear that bird hunting is banned, the hunting of wild ducks still continues illegally in these areas. Different methods of poaching are adapted to trap various species of birds. Birds are mostly killed by using mist nets, shooting and occasionally with leg nooses. Trapped birds are generally marketed at nearby towns. During migratory seasons major wild duck like Shovellers, Pintails and Teals are trapped with the mist nets (Nagulu *et al.*, 1982) [7]. Poaching figures recorded during the study period at perennial and non-perennial tanks showed a significant variation in number of birds killed each year (Table 2 and 3).

Table 1: Salient features of perennial and non-perennial tanks selected for the study

S. No	Name	Location	Water spread area (in Ha)	Depth (in Mts.)	Nature of the tank
1	Thummalaguda	17º20'-17º25' N 79º-79º51' E	135.2	3.88	Shallow, Perennial
2	Vemulakonda	17º20'-17º24' N 79º5'-79º40' E	115.5	3.65	Shallow, Perennial
3	Dameracharla	16º42'-16º45' N 79º37'-79º40' E	62.35	3.73	Shallow, Perennial
4	Solipet	17º15' N & 79º32' E	2526.8	24.99	Deep, Perennial
5	Raigir	17º30'-17º35' N 78º55'-79º E	62.35	3.65	Shallow, Non-Perennial
6	Bhongir	17º31'-17º35' N 78º50'-78º55' E	104.32	7.01	Deep, Non-Perennial
7	Athmakur	17º25'-17º35' N 79º-79º15' E	60.25	2.74	Shallow, Non-Perennial
8	Anantaram	17º30'-17º35' N 78º50'-78º55' E	48.37	2.43	Shallow, Non-Perennial

Table 2: Poaching figures of ducks in perennial tanks during the study period

Name of the species	No. of birds killed											
	Thirumalaguda			Vemulakonda			Dameracherla			Solipet		
	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11
Pintail	42(19.5)	54(18.4)	114(32.1)	82(27.0)	63(21.4)	94(28.9)	53(15.8)	74(21.8)	83(27.4)	64(19.0)	82(33.2)	74(25.2)
Pochard	14(6.5)	23(7.8)	35(9.9)	24(7.9)	35(11.9)	25(7.7)	48(14.3)	63(18.5)	16(5.3)	38(11.3)	16(6.5)	28(9.5)
Lesser Whistling Teal	64(29.8)	94(32.0)	92(25.9)	98(32.2)	85(28.9)	74(22.8)	74(22.0)	74(21.8)	80(26.4)	92(27.3)	71(28.7)	58(19.7)
Gargany Teal	38(17.7)	63(21.4)	64(18.0)	42(13.8)	53(18.0)	82(25.2)	59(17.6)	53(15.6)	75(24.8)	74(22.0)	42(17.0)	67(22.8)
Comb Duck	16(7.4)	18(6.1)	23(6.5)	14(4.6)	22(7.5)	16(4.9)	28(8.3)	32(9.4)	18(5.9)	18(5.3)	1(6.5)6	31(10.5)
Spot Bill	23(10.7)	20(6.8)	18(5.1)	23(7.6)	25(8.5)	22(6.8)	33(9.8)	28(8.2)	21(6.9)	23(6.8)	8(3.2)	22(7.5)
Shovellor	18(8.4)	22(7.5)	9(2.5)	21(6.9)	11(3.7)	12(3.7)	41(12.2)	16(4.7)	10 (3.3)	28(8.3)	12 (4.9)	14 (4.8)
Total	215	294	355	304	294	325	336	340	303	337	247	294

Table 3: Poaching figures of ducks in non-perennial tanks during the study period

Name of the species	No. of birds killed											
	Raigir			Bhongir			Atmakur			Anantharam		
	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11
Pintail	34(26.2)	30(25.0)	55(32.0)	20(21.3)	21(20.4)	62(29.0)	53(30.6)	63(36.0)	53(32.1)	74(32.5)	57(32.9)	48(29.3)
Pochard	10(7.7)	8(6.7)	16(9.3)	8(8.5)	10(9.7)	12(5.6)	12(6.9)	14(8.0)	18(10.9)	20(8.8)	25(14.5)	12(7.3)
Lesser Whistling Teal	25(19.2)	25(20.8)	35(20.3)	22(23.4)	29(28.2)	42(19.6)	36(20.8)	35(20.0)	41(24.8)	55(24.1)	39(22.5)	38(23.2)
Gargany Teal	32(24.6)	28(23.3)	34(19.8)	28(29.8)	25(24.3)	63(29.4)	43(24.9)	41(23.4)	29(17.6)	42(18.4)	31(17.9)	32(19.5)
Comb Duck	5(3.8)	7(5.8)	9(5.2)	4(4.3)	7(6.8)	14(6.5)	9(5.2)	9(5.1)	7(4.2)	12(5.3)	6(3.5)	9(5.5)
Spot Bill	16(12 3)	12(10.0)	16(9.3)	8(8.5)	8(7.8)	12(5.6)	12(6.9)	7(4.0)	9(5.5)	16(7.0)	7(4.0)	12(7.3)
Shovellor	8(6.2)	10(8.3)	7(4.1)	4(4.3)	3(2.9)	9(4.2)	8(4.6)	6(3.4)	8(4.8)	9(3.9)	8(4.6)	13(7.9)
Total	130	120	172	94	103	214	173	175	165	228	173	164

Table 4: Poaching figures of Birds in perennial tanks during the study period

Name of the species	No. of birds killed											
	Thirumalaguda			Vemulakonda			Dameracherla			Solipet		
	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11
Coots	94 (46.8)	78 (48.8)	98 (56)	64 (39)	64 (42.1)	112 (65.1)	78 (39.8)	92 (48.7)	114 (63.3)	74 (36.5)	48 (42.1)	74 (67.3)
Purple moorhens	75 (37.3)	64 (40)	67 (38.3)	82 (50)	72 (47.4)	48 (27.9)	94 (48)	78 (41.3)	53 (29.4)	115 (56.7)	54 (47.4)	24 (21.8)
Whitebreasted waterhens	32 (15.9)	18 (11.3)	10 (5.7)	18 (11)	16 (10.5)	12 (7.0)	24 (12.2)	19 (10.1)	13 (7.2)	14 (6.9)	12 (10.5)	12 (10.9)
Total	201	160	175	164	152	172	196	189	180	203	114	110

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Table 5: Poaching figures of Birds in non -perennial tanks during the study period

Name of the species	No. of birds killed											
	Raigir			Bhongir			Atmakur			Anantharam		
	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11
Coots	53 (64.6)	45 (67.2)	44 (64.7)	31 (68.9)	26 (65.0)	52 (61.9)	45 (62.5)	32 (61.5)	29 (63.0)	56 (58.9)	57 (70.4)	41 (71.9)
Purple moorhens	21 (25.6)	14 (20.9)	15 (22.1)	10 (22.2)	10 (25.0)	24 (28.6)	24 (33.3)	12 (23.1)	10 (21.7)	29 (30.5)	16 (19.8)	12 (21.1)
Whitebreasted waterhens	8 (9.8)	8 (11.9)	9 (13.2)	4 (8.9)	4 (10.0)	8 (9.5)	3 (4.2)	8 (15.4)	7 (15.2)	10 (10.5)	8 (9.9)	4 (7.0)
Total	82	67	68	45	40	84	72	52	46	95	81	57

At perennial tanks the maximum number of ducks were killed at Dameracharla (979) followed by Vemulakonda (923), Solipet (878) and Thummalaguda (864) during the study period. Among the ducks, the Lesser Whistling Teals showed significantly high catches (19.5-32.2%), followed by Pintails (15.8-38.2%) and Garganey Teals (13.8-25.2%. Table 2). The remaining ducks showed low percent catches ranging between 3.2% - 18.5% (Fig. 2). The overall poaching figures among the ducks showed predominantly high for Lesser Whistling Teal (26.23%) fallowed by Pintails (24.12%), Gargany Teal (19.54%), Poachard (10.02%), Spot bill (7.30%), Comb duck (6.92%) and Shovellor (5.87%) at perennial tanks during study period (Fig. 2). Where as in non-perennial tanks, the poaching was high for Pintails (29.83%) followed by Gargany (22.40), Lesser Whistling Teal (22.08%), Pochard (8.63%), Spot billed duck (7.06%), Combduck (5.13%) and Shovellor (4.87%) (Fig. 3).

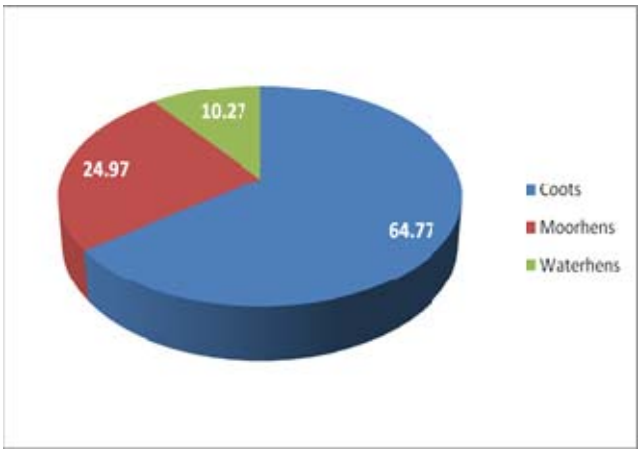

Fig 2: Overall Poaching figures of Birds in non -perennial tanks during the study period

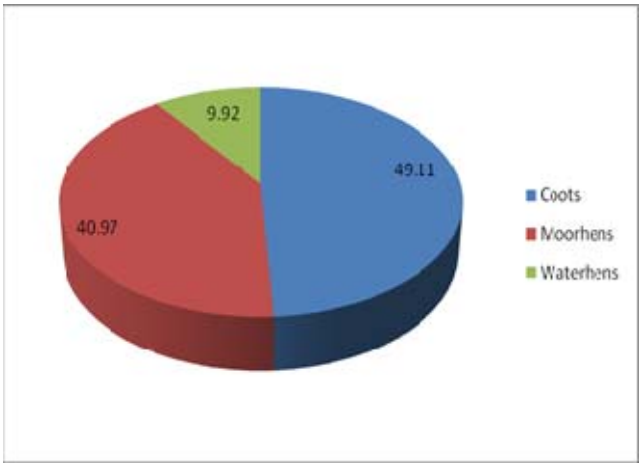

Fig 3: Overall Poaching figures of Birds in perennial tanks during the study period

The other birds such as Coots, Moorhens and Waterhens were also trapped in large numbers which ranged between 427-565 birds at different perennial tanks. The birds killed during the period are given in Fig 3 and Table 4. It is evident from the table that Coots constituted maximum percentage (36.5 to 67.3%) of deaths followed by Moorhens (21.8-56.7%) whereas, Water hen constituted only 5.7-15.9%. However at non-perennial tanks, the percentage of Pintails was high (l5.8-36%) among the catches, followed by Garganey (17.9-29.8%), Whistling Teals (19.6-28.2%) and Pochards (7.3-10.9%) (Table 3). The other birds such as Coots were also significantly found in the catches which ranged between 106 - 154 birds (Table 5). The percentage of birds killed showed increasing trends in all the years of study and ranges between 4.2 to 71.9%. The overall percent catches were significantly high for coots in both perennial and non-perennial tank (Fig 4 & 5)

Hunting of any kind disturbs the feeding, roosting and breeding birds of the habitat, as they are very sensitive to sound and physical disturbance. At Kolleru, different poaching methods caused significant difference in the population of birds (Anjaneyulu, 1991) [1]. The migrating ducks generally spent most of the day feeding on plankton and fish in different aquatic habitats such as open waters, reed areas and fish tanks. During night, they raid nearby crop fields which make them more vulnerable for poaching (Elton, 1960). It has been argued that shooting is not the most significant factor in water birds mortality (Lampio, 1982), but the scale at which shooting, netting and trapping practices are prevalent in the region, coupled with the phenomenon of habitat shrinkage leading to trapping, has become a factor of predominance in stressing the aquatic bird population (Raj *et al.*, 1992) [11], Obviously, hunting of any kind needs to be stopped. Existing laws for the Preservation of wild life which includes waterfowl should be given more publicity on a large scale using the media for the purpose. On a local scale, display boards with appropriate warnings and the benefits of having water birds visiting the area could be put up. Monitoring of selected tanks which hold potential should be taken up. Such sites should be declared as protected habitats. Parallel efforts must be made to improve habitats ecologically to attract and sustain large number of waterfowl.

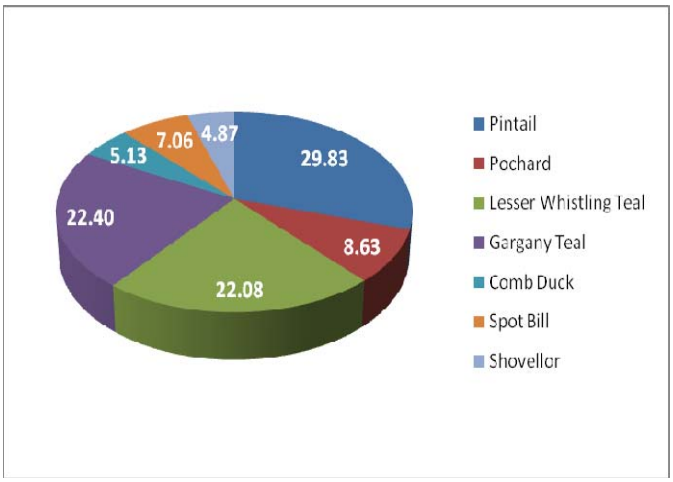

Fig 4: Overall Poaching figures of ducks in non-perennial tanks during the study period

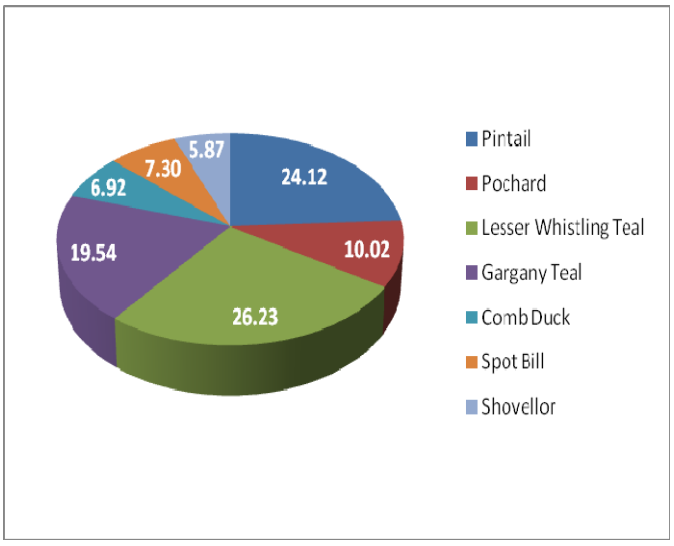

Fig 5: Overall Poaching figures of ducks in perennial tanks during the study period

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