

## Avian fauna of village pond of Mote Majra, Punjab, India

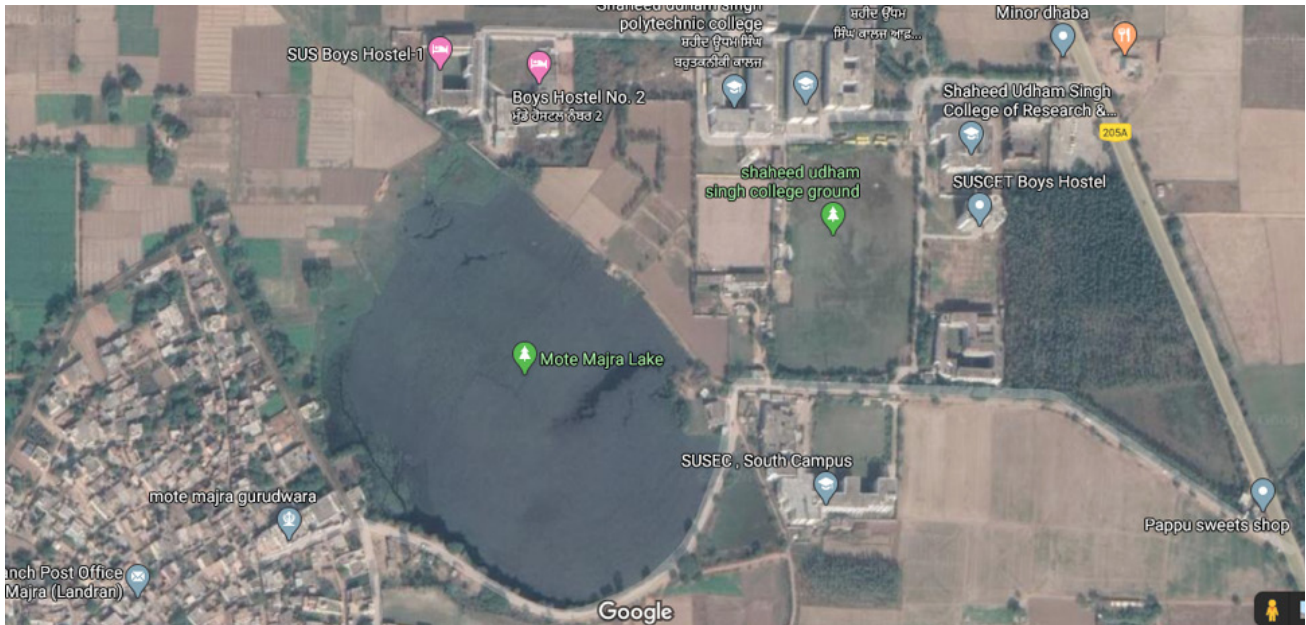


Image 1. Study area.

From the beginning of civilization, humans have had an important relation with water bodies. Most of the cities are situated around water bodies whether, a lake, river or an ocean. Even villages are established around ponds to meet the daily needs of humans. One-thousand-three-hundred-and-forty (1340) bird species are reported in India, out of which 310 species are known to depend on different water bodies (Kumar & Gupta 2009). From last few years, local people use ponds for the production of Water Chestnut *Trapa natans* commonly known as Singhara. Ponds, whether natural or manmade, sustain their ecological properties and these are hubs of biodiversity (Karakaş 2017). Wetland birds assemble at these sites due to plenty of food and habitat accessibility (Paracuellos 2006; Cereghino et al. 2014).

Ponds also channelize the migratory birds from one place to another as flock of birds use these ponds as stopover and refueling destinations for few days during their migration before moving towards their final destination (Hassall 2014). Most of the earlier studies in Punjab mainly focuses on avian diversity of the wetlands (Bal & Dua 2010) but with this study authors acknowledge the importance of village ponds in context to avian diversity.

The present study site, Mote Majra (Image 1) is located in between longitude 30.5873°N to 76.7010°E latitude near Banur, S.A.S Nagar, Mohali having area of 32 acres and is one of the biggest ponds of Punjab. This pond is also known as Kalyanpur Dhaab by the locals. It is named after the famous saint

“Kalyan Ji” and Dhaab word is used for water body which is larger than a pond but smaller than a lake.

Data was collected from November 2018 to December 2019 once a week and twice a day. For the summer season, the survey was conducted from 06.00 to 09.00 h and 17.00 to 19.30 h and for winter season from 07.00 to 10.00 h and 16.00 to 18.30 h. Observations were made while walking slowly along the shore of the pond or by sitting at vantage points. Point count and direct observation was used for counting of birds during the field survey (Bibby et al. 2000).

Bird identification was done with the aid of binoculars (Olympus 8-16\*40 zoom DPS-I) and using field guides (Ali 1996; Grimmet et al. 2003). Photography was done with DSLR camera (Canon 7D with 100–400mm zoom lens and 1200D 75–300mm lens). Photographic documentation and a checklist of birds visiting the site were prepared with standard common and scientific names (Manakadan & Pittie 2001).

The major aspect of the survey was to evaluate the bird diversity of this village pond. During the survey, a total of 160 bird species were found belonging to 18 orders and 53 families (Table 1). Maximum numbers of birds were found during the winter season, as aqua cultural practices were done in summers, therefore, it poses minimum hindrance to the occurrence of birds during the winters.

Most of the birds found at Mote Majra were herbivorous as they feed on residues of Water chestnut crop in winter season. Spot-

billed Duck, Ruddy Shelduck, Northern Shoveler, Lesser Whistling Duck, Gadwall, Common Pochard, Bar-headed Goose, Common Moorhen, Common Coot, Red-wattled Lapwing, White-breasted Kingfisher, Purple Moorhen, Common Moorhen, Little Cormorant, Large Cormorant, Tree Pie, and Plain Prinia are the most common birds found in this region. Vegetation around the pond comprises of *Abutilon indicum* (Country mallow), *Leucaena leucocephala* (Horse tamarind), *Cucumis melo var. agrestis* (Wild melon), *Parthenium hysterophorus* (Congress grass), *Trianthema portulacastrum* (Giant pigweed), *Cynodon dactylon* (Bermuda grass), *Calotropis procera* (Rubber bush), *Ipomoea aquatic* (Swamp cabbage), *Spirodela polyrhiza* (Great duck weed), *Cannabis sativa* (Hump), *Ricinus communis* (Arand, Castor-oil plant), *Prosopis juliflora* (Mesquite), *Azadirachta indica* (Neem), *Melia azedarach* (Dek), *Morus alba* (Mulberry), *Eucalyptus oblique* (Eucalyptus), *Acacia nilotica Indica* (Babul Acacia), *Ficus virens* (Pilkhan or White fig), *Ficus religiosa* (Peepal), and *Ficus benghalensis* (Banyan) which provide different habitats and unique structures for many bird species. Booted eagle, Greater spotted eagle, Eurasian marsh harrier, Steppe Eagle, Common shelduck, Dunlin, Greater white-fronted goose, Mallard, Eurasian spoonbill, Eurasian wryneck, Oriental darter, Greater flamingo were rare in this area as seen once or twice during the survey.

Maximum numbers of migratory birds belong to waterfowl's category which included highest number of Bar-headed Goose, Northern Shoveler, Common Coot, Gadwall and Ruddy Shelduck. It provides breeding sites for Cattle Egret, Pheasant-tailed Jacana,

**Table 1. Showing scientific and common names of birds as well as their conservation status.**

	Common name	Scientific name	Family	Order	IUCN RL status
Accipitriformes: Accipitridae					
1.	Black Kite	<i>Milvus migrans</i>	Accipitridae	Accipitriformes	LC
2.	Black-shouldered Kite	<i>Elanus caeruleus</i>			LC
3.	Booted Eagle	<i>Hieraaetus pennatus</i>			LC
4.	Greater Spotted Eagle	<i>Aquila clanga</i>			VU
5.	Western Marsh-Harrier	<i>Circus aeruginosus</i>			LC
6.	Shikra	<i>Accipiter badius</i>			LC
7.	Steppe Eagle	<i>Aquila nipalensis</i>			EN
Anseriformes: Anatidae					
8.	Bar-headed Goose	<i>Anser indicus</i>	Anatidae	Anseriformes	LC
9.	Comb Duck	<i>Sarkidiornis melanotos</i>			LC
10.	Common Pochard	<i>Aythya ferina</i>			VU
11.	Common Shelduck	<i>Tadorna tadorna</i>			LC
12.	Common Teal	<i>Anas crecca</i>			LC
13.	Cotton Teal	<i>Nettapus coromandelianus</i>			LC
14.	Ferruginous Pochard	<i>Aythya nyroca</i>			NT
15.	Gadwall	<i>Anas strepera</i>			LC
16.	Garganey	<i>Anas querquedula</i>			LC
17.	Greater White-fronted Goose	<i>Anser albifrons</i>			LC
18.	Greylag Goose	<i>Anser anser</i>			LC
19.	Lesser Whistling-Duck	<i>Dendrocygna javanica</i>			LC
20.	Mallard	<i>Anas platyrhynchos</i>			LC
21.	Northern Shoveller	<i>Anas clypeata</i>			LC
22.	Northern Pintail	<i>Anas acuta</i>			LC
23.	Red-crested Pochard	<i>Netta rufina</i>			LC
24.	Brahminy Shelduck	<i>Tadorna ferruginea</i>			LC
25.	Spot-billed Duck	<i>Anas poecilorhyncha</i>			LC
26.	Eurasian Wigeon	<i>Anas penelope</i>	LC		
27.	House Swift	<i>Apus affinis</i>	Apodidae	Apodiformes	LC
28.	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae	Charadriiformes	LC
29.	Red-wattled Lapwing	<i>Vanellus indicus</i>			LC
30.	White-tailed Lapwing	<i>Vanellus leucurus</i>			LC
31.	Small Pratincole	<i>Glareola lacteal</i>	Glareolidae	LC	
32.	Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	Jacaniidae	LC	
33.	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	LC	
34.	Pied Avocet	<i>Recurvirostra avosetta</i>		LC	

	Common name	Scientific name	Family	Order	IUCN RL status
35.	Black-tailed Godwit	<i>Limosa limosa</i>	Scolopacidae	Charadriiformes	NT
36.	Common Redshank	<i>Tringa tetanus</i>			LC
37.	Common Sandpiper	<i>Actitis hypoleucos</i>			LC
38.	Common Snipe	<i>Gallinago gallinago</i>			LC
39.	Dunlin	<i>Calidris alpina</i>			LC
40.	Eurasian Curlew	<i>Numenius arquata</i>			NT
41.	Green Sandpiper	<i>Tringa ochropus</i>			LC
42.	Common Greenshank	<i>Tringa nebularia</i>			LC
43.	Marsh Sandpiper	<i>Tringa stagnatilis</i>			LC
44.	Little Stint	<i>Calidris minuta</i>			LC
45.	Ruff	<i>Philomachus pugnax</i>			LC
46.	Spotted Redshank	<i>Tringa erythropus</i>			LC
47.	Temminck's Stint	<i>Calidris temminckii</i>			LC
48.	Wood Sandpiper	<i>Tringa glareola</i>			LC
49.	Asian Openbill Stork	<i>Anastomus oscitans</i>	Ciconiidae	Ciconiiformes	LC
50.	Painted Stork	<i>Mycteria eucocephala</i>			NT
51.	White-necked Stork	<i>Ciconia episcopus</i>			VU
52.	Blue Rock Pigeon	<i>Columba livia</i>	Columbidae	Columbiformes	LC
53.	Yellow-legged Green-Pigeon	<i>Treron phoenicoptera</i>			LC
54.	Laughing Dove	<i>Streptopelia senegalensis</i>			LC
55.	Red Collared-Dove	<i>Streptopelia tranquebarica</i>			LC
56.	Eurasian Collared-Dove	<i>Streptopelia decaocto</i>			LC
57.	Spotted Dove	<i>Streptopelia chinensis</i>			LC
58.	Common Kingfisher	<i>Alcedo atthis</i>	Alcedinidae	Coraciiformes	LC
59.	White-breasted Kingfisher	<i>Halcyon smyrnensis</i>	LC		
60.	Indian Grey Hornbill	<i>Ocyroceros birostris</i>	Bucerotidae		LC
61.	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae		LC
62.	Blue-tailed Bee-eater	<i>Merops philippinus</i>	Meropidae		LC
63.	Small Bee-eater	<i>Merops orientalis</i>			LC
64.	Common Hoopoe	<i>Upupa epops</i>	Upupidae		LC
65.	Greater Coucal	<i>Centropus sinensis</i>	Cuculidae	Cuculiformes	LC
66.	Pied Crested Cuckoo	<i>Clamator jacobinus</i>			LC
67.	Asian Koel	<i>Eudynamys scolopacea</i>			LC
68.	Grey Francolin	<i>Francolinus pondicerianus</i>	Phasinidae	Galliformes	LC
69.	Indian Peafowl	<i>Pavo cristatus</i>			LC
70.	Common Moorhen	<i>Gallinula chloropus</i>	Rallidae	Gruiformes	LC
71.	Common Coot	<i>Fulica atra</i>			LC
72.	Purple Moorhen	<i>Porphyrio porphyrio</i>			LC
73.	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>			LC

	Common name	Scientific name	Family	Order	IUCN RL status
74.	Blyth's Reed-Warbler	<i>Acrocephalus dumetorum</i>	Acrocephalidae	Passeriformes	LC
75.	Booted Warbler	<i>Hippolais caligata</i>			LC
76.	Sykes's Warbler	<i>Iduna rama</i>			LC
77.	Common Crested Lark	<i>Galerida cristata</i>	Alaudidae		LC
78.	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae		LC
79.	Plain Prinia	<i>Prinia inornata</i>			LC
80.	Streaked Fantail Warbler	<i>Zitting cisticola</i>			LC
81.	Common Tailorbird	<i>Orthotomus sutorius</i>			LC
82.	House Crow	<i>Corvus splendens</i>	Corvidae		LC
83.	Jungle Crow	<i>Corvus macrorhynchos</i>			LC
84.	Indian Treepie	<i>Dendrocitta vagabunda</i>			LC
85.	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	LC	
86.	Black-headed Bunting	<i>Emberiza melanocephala</i>	Emberizidae	LC	
87.	Rock Bunting	<i>Emberiza cia</i>		LC	
88.	Red Munia	<i>Amandava amandava</i>	Estrildidae	LC	
89.	Spotted Munia	<i>Lonchura punctulata</i>		LC	
90.	White-throated Munia	<i>Lonchura malabarica</i>		LC	
91.	Red-rumped Swallow	<i>Hirundo daurica</i>	Hirundinidae	LC	
92.	Common Swallow	<i>Hirundo rustica</i>		LC	
93.	Grey-throated Martin	<i>Riparia chinensis</i>		LC	
94.	Wire-tailed Swallow	<i>Hirundo smithii</i>		LC	
95.	Bay-backed Shrike	<i>Lanius vittatus</i>	Laniidae	LC	
96.	Brown Shrike	<i>Lanius cristatus</i>		LC	
97.	Long-tailed Minivet	<i>Pericrocotus ethologus</i>		LC	
98.	Common Babbler	<i>Turdoides caudatus</i>	Leiothrichidae	LC	
99.	Jungle Babbler	<i>Turdoides striatus</i>		LC	
100.	Large Grey Babbler	<i>Turdoides malcolmi</i>		LC	
101.	Citrine Wagtail	<i>Motacilla citreola</i>	Motacillidae	LC	
102.	Grey Wagtail	<i>Motacilla cinerea</i>		LC	
103.	Paddyfield Pipit	<i>Anthus rufulus</i>		LC	
104.	Richard's Pipit	<i>Anthus richardi</i>		LC	
105.	Rosy Pipit	<i>Anthus roseatus</i>		LC	
106.	Eurasian Tree Pipit	<i>Anthus trivialis</i>		LC	
107.	White Wagtail	<i>Motacilla alba</i>		LC	
108.	Yellow Wagtail	<i>Motacilla flava</i>		LC	
109.	Black Redstart	<i>Phoenicurus ochruros</i>	Muscicapidae	LC	
110.	Blue Rock-Thrush	<i>Monticola solitarius</i>		LC	
111.	Bluethroat	<i>Luscinia svecica</i>		LC	

	Common name	Scientific name	Family	Order	IUCN RL status
112.	Indian Chat	<i>Cercomela fusca</i>	Muscicapidae	Passeriformes	LC
113.	Siberian Stonechat	<i>Saxicola maurus</i>			LC
114.	Indian Robin	<i>Saxicoloides fulicata</i>			LC
115.	Oriental Magpie-Robin	<i>Copsychus saularis</i>			LC
116.	Pied Bushchat	<i>Saxicola caprata</i>			LC
117.	Verditer Flycatcher	<i>Eumyias thalassina</i>			LC
118.	White-tailed Stonechat	<i>Saxicola leucurus</i>			LC
119.	Purple Sunbird	<i>Nectarinia asiatica</i>	Nectariniidae		LC
120.	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	Oriolidae		LC
121.	Yellow-eyed Babbler	<i>Chrysomma sinense</i>	Paradoxornithidae		LC
122.	Cinereous Tit	<i>Parus cinereus</i>	Paridae		LC
123.	Sind Sparrow	<i>Passer pyrrhonotus</i>	Passeridae		LC
124.	Common Chiffchaff	<i>Phylloscopus collybita</i>	Phylloscopidae		LC
125.	Siberian Chiffchaff	<i>Phylloscopus tristis</i>			LC
126.	Baya Weaver	<i>Ploceus philippinus</i>	Ploceidae		LC
127.	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae		LC
128.	Asian Pied Starling	<i>Sturnus contra</i>	Sturnidae		LC
129.	Bank Myna	<i>Acridotheres ginginianus</i>			LC
130.	Brahminy Starling	<i>Sturnus pagodarum</i>			LC
131.	Common Myna	<i>Acridotheres tristis</i>		LC	
132.	Greater Whitethroat	<i>Sylvia communis</i>	Sylviidae	LC	
133.	Common Lesser Whitethroat	<i>Sylvia curruca</i>		LC	
134.	Scaly Thrush	<i>Zosterops dauma</i>	Turdidae	LC	
135.	Indian White-eye	<i>Zosterops palpebrosus</i>	Zosteropidae	LC	
136.	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Pelecaniformes	LC
137.	Grey Heron	<i>Ardea cinerea</i>			LC
138.	Indian Pond Heron	<i>Ardeola grayii</i>			LC
139.	Large Egret	<i>Casmerodius albus</i>			LC
140.	Little Egret	<i>Egretta garzetta</i>			LC
141.	Intermediate Egret	<i>Ardea intermedia</i>			LC
142.	Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>			LC
143.	Purple Heron	<i>Ardea purpurea</i>			LC
144.	Yellow Bittern	<i>Ixobrychus sinensis</i>			LC
145.	Black Ibis	<i>Pseudibis papillosa</i>			Threskiornithidae
146.	Eurasian Spoonbill	<i>Platalea leucorodia</i>	LC		
147.	Black Headed White Ibis/ Oriental White Ibis	<i>Threskiornis melanocephalus</i>	NT		
148.	Greater Flamingo	<i>Phoenicopterus ruber</i>	Phoenicopteridae	Phoenicopteriformes	LC
149.	Coppersmith Barbet	<i>Megalaima haemacephala</i>	Megalaimidae	Piciformes	LC

	Common name	Scientific name	Family	Order	IUCN RL status
150.	Brown-headed Barbet	<i>Megalaima zeylanica</i>	Megalaimidae	Piciformes	LC
151.	Lesser Golden-backed Woodpecker	<i>Dinopium benghalense</i>	Picidae		LC
152.	Eurasian Wryneck	<i>Jynx torquilla</i>	Picidae		LC
153.	Great Crested Grebe	<i>Podiceps cristatus</i>	Podicipedidae	Podicipediformes	LC
154.	Little Grebe	<i>Tachybaptus ruficollis</i>			LC
155.	Alexandrine Parakeet	<i>Psittacula eupatria</i>	Psittaculidae	Psittaciformes	NT
156.	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittacidae		LC
157.	Spotted Owlet	<i>Athene brama</i>	Strigidae	Strigiformes	LC
158.	Great Cormorant	<i>Phalacrocorax carbo</i>	Phalacrocoracidae	Suliformes	LC
159.	Little Cormorant	<i>Phalacrocorax niger</i>			LC
160.	Darter	<i>Anhinga melanogaster</i>	Anhingidae		NT

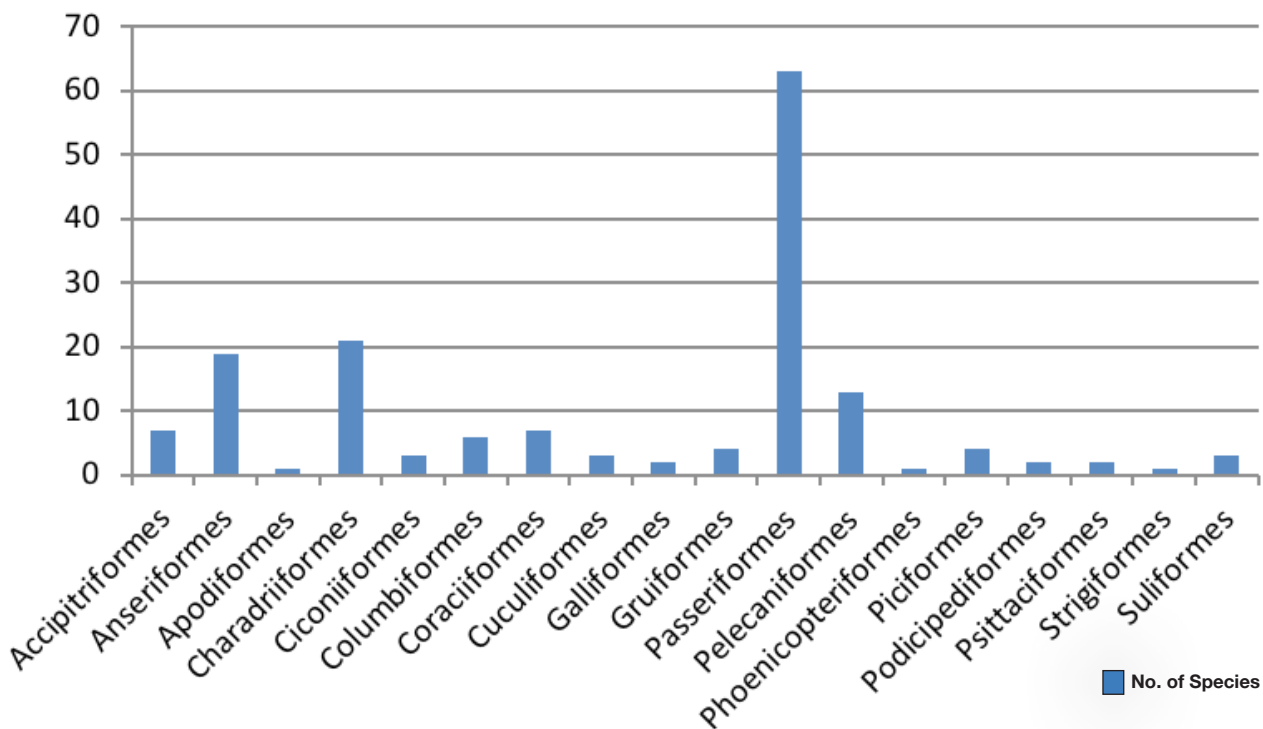


Figure 1. Number of bird species under different orders.

Rose-ringed Parakeet, Little Grebe, Little Egret, Night Heron, Spotted Munia, Baya Weaver, Common Moorhen, Purple Moorhen, and Blue

Rock Pigeon as their nests and occurrence of juveniles were also documented. Similar observations have been recorded near water

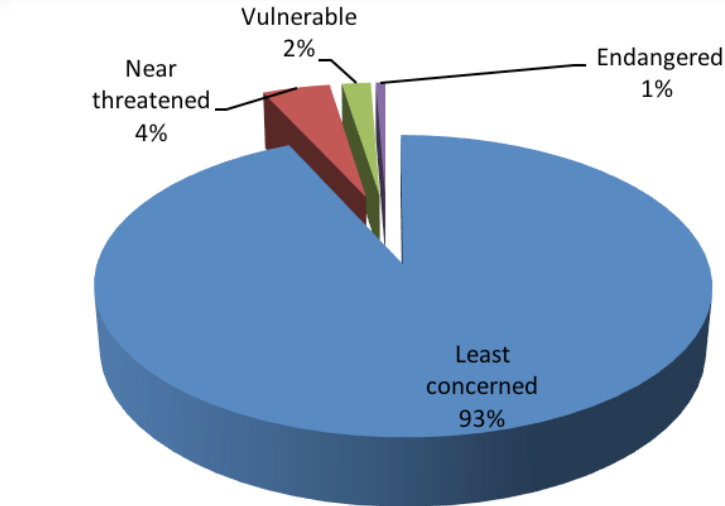
bodies in Tehsil, Kharar Ropar District, Punjab (Singh & Sodhi 1985).

**Threat:** This habitat is facing

threat from urbanization as this pond is surrounded by human habitation and agricultural fields. Half of the pond has a well-defined boundary marked by road and the other part is surrounded by agricultural fields. The fellow area between the agricultural land and pond provides breeding and resting sites for birds, but it is observed that the pond size is reducing every year due to encroachment and reclamation by farmers to enhance their agricultural practices and use of crackers to control birds invading in agricultural fields which affect the behavior of the birds. Resultantly, decline in the number of migratory birds have been observed in the last few years as explained by the villagers and reported in local newspapers. The sewage waste from village adversely affects the water quality. During the course of present investigations, serious efforts have been made to generate the awareness regarding importance of pond and its conservation measures amongst the villagers.

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**Figure 2. Percentage occurrence of birds which comes under IUCN Threatened categories at pond of village Mote majra.**

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