Habitat Preference

CHAPTER 2

HABITAT PREFERENCE OF FLAMINGOS

Birds are extremely mobile and wide-ranging in distribution. Of the range of habitats they pass through or over, only specific ones are used for breeding or foraging or wintering (Cody, 1985). The evolution of habitat preference is determined by; and determines, the birds morphological structure and behavioral functions of birds and their ability to obtain food and shelter (Cody, 1985).

The flamingos are waterbirds. Jadhav and Parasharya (2004) have thrown some light on their habitat preference. However, the habitat preference of flamingos has not been studied in detail, in India. In this chapter, efforts are made to study the habitat preference by flamingos in detail based on the counts done during non-breeding, breeding and post-breeding periods.

Materials and Methods:

The Flamingo Count was done in the non-breeding, breeding and post-breeding periods (Chapter 1.1). Both the species of flamingos were recorded according to the different types of habitats in which they were found.

For convenience, all the aquatic habitats were broadly classified into two categories, *viz.*, (A) Coastal Wetlands and (B) Inland Wetlands. The Coastal Wetlands were further classified into three categories.

Classification of Habitats:

(A) Coastal Wetlands

I. <u>Sea Coast/Mudflats</u>:

The inter-tidal area inundated with water and covered with loose mud was included under this category.

The mudflats and coastal areas of Gujarat are totally different from the Rann of Kachchh Hence, it was further divided into

i. **Sea Coast of Gujarat State:** The coastal and mudflat areas from Lakhpat to Mandvi, entire Gulf of Kachchh, coastal areas from Okha to Nikol, entire Gulf of Khambhat and the southern coast of Gujarat form the sea coast of Gujarat state.

The mudflats were covered with sparsely distributed mangrove plants at some sites (Dholera) while at most of the other sites, mudflats were just an open area (Khambhat). Total area of the mudflats exposed during low tide, varied at different sites. Thin, green-brown film on the mudflats contained diatoms and algae. The mudskipper, *Boleopthalmus spp.* was a common inhabitant of the mudflats.

ii. **Rann of Kachchh:** This included the Great Rann and the Little Rann of Kachchh. The Rann of Kachchh is a unique, true saline desert-cum-wetland; however after inundation, the dry salty desert is converted into a vast mudflat.

II. Salt pans:

The salt pans are land inundated by shallow sea water near the sea coast, used for extracting salt. The size of the salt pans varied at different coastal sites.

III. Coastal Fresh Water Wetlands:

This included the wetlands within 10 km range from the sea coast having some influence of marine water. The village ponds, irrigation ponds, tidal regulators, sewage ponds and estuaries were included under this category. The fresh water of such wetlands may get mixed up with the sea water during high tide or due to flooding after excessive rain and become saline or alkaline.

Coastal Fresh Water Wetlands were classified further into four categories:

a) **Fresh Water Ponds**: The village/irrigation ponds were basically having fresh water and located close to salt pans/coast. Their water may become saline due to excessive evaporation or mixing up with the sea water during monsoon flooding.

b) **Sewage Ponds:** The sewage ponds of Porbandar, Bhavnagar and Jamnagar were <10 km range from the coastal site. The Chhaya Rann, a sewage pond at Porbandar receives industrial effluents, including soda ash, besides urban sewage.

c) **Tidal Regulators:** Tidal regulators near sea coast, generally prevent mixing of sea water with the fresh water.

d) **River/Estuary:** This included Mahi River of Vadodara district and Sabarmati River of Ahmedabad district.

(B) Inland Wetlands

The Fresh Water Wetlands, ≥ 10 km distance from the sea coast and/or salt pans were considered under this category. Several village ponds, irrigation tanks and sewage ponds were surveyed.

Results:

2.1 Habitat Preference of Flamingos during Non-breeding Season (January 2003):

The flamingos were largely concentrated at the Coastal Wetlands (99.84%). Very small number of flamingos was recorded in Inland Wetlands (0.16%). The flamingos were absent at Rann of Kachchh. Rann of Kachchh was dry because of insufficient rain fall. Hence no flamingo was recorded from all the sites of Great Rann and the Little Rann of Kachchh (Table 2.1).

Distribution of Greater Flamingo:

A total of 32,943 Greater Flamingos were recorded. They were found largely in the Salt Pans (70.66%) followed by the Coastal Fresh Water Wetlands (19.38%), Sea Coast/Mudflats (8.33%) and Inland Fresh Water Wetland (1.63%). Highest numbers of flamingos was in the Coastal/ Mudflat areas of Gujarat (71.16%). Nearly equal number was present at Salt Pans (16.25%) and Coastal Fresh Water Wetlands (12.43%) (Table 2.1).

Major concentration was at salt pans of Bhavnagar and Charakala followed by salt pans around Jamnagar, Dholera and Porbandar (Table 2.1a).

They were absent at the mudflats of Dholera and present in very small number on the sea coast and mudflats of Jafrabad, Amreli, Khambhat, Anand, Nikol, Bhavnagar; Narara-Pindhara, Jamnagar, creek areas of Kachchh, and from Navsari (Table 2.1b).

Considerably good number of Greater Flamingos was recorded from Coastal Fresh Water Wetlands of 7 districts (Table 2.1, c-1). Highest concentration (95.89%) was found at the tidal regulators, *viz.* Nikol, Gosa-Karli, Karli bridge, Meedha and Kaj. The number of Greater Flamingos at fresh water ponds was 22 (0.34%) birds only. A small number of Greater Flamingos (1.35%) was recorded at the sewage ponds with influence of sea water at Porbandar and Jamnagar. They were absent in the sewage pond of Bhavnagar. The number of Greater Flamingos was very low (0.16%) at the sewage pond receiving industrial effluents. At Sabarmati estuary, 144 birds were found, however they were absent at the Mahi estuary (Table 2.1, c-2).

Amongst the Inland Fresh Water Wetlands, only 535 Greater Flamingos were recorded from 18 sites, mainly village ponds, irrigation ponds and sewage ponds of 10 districts (Table 2.1d).

Distribution of Lesser Flamingo:

A total of 3,72,778 Lesser Flamingos were recorded from different habitats. The Lesser Flamingos were more concentrated at the Sea Coast/Mudflats (76.71%). They were

equally distributed at the Salt Pans (11.44%) and Coastal Fresh Water Wetlands (11.82%). The Lesser Flamingos were negligible at the Inland Fresh Water Wetlands (0.03%) (Table 2.1).

Amongst the Sea Coast and Mudflats, highest number of Lesser Flamingos was recorded from Dholera of Ahmedabad district, Khambhat-Dhuwaran of Anand and Gopnath and Sartanpur of Bhavnagar (Table 2.1b).

Amongst the Salt Pans, major concentration was at the salt pans of Charakala. Considerably good number was recorded from Bhavnagar followed by Porbandar and Jamnagar. The salt pans of Dholera had comparatively less flamingos (Table 2.1a).

Amongst the Coastal Fresh Water Wetlands, the Lesser Flamingos were totally absent in fresh water village ponds but were present in the rest of the categories (Table 2.1,c-1). The highest concentration (70.18%) was recorded at the tidal regulators followed by sewage ponds (28.91%). The sewage pond of Porbandar (Chhaya Rann) receiving industrial effluents of soda ash had a very high concentration of the birds (17.63%). Considerable number of Lesser Flamingos (11.28%) was recorded at sewage pond with the influence of sea water at Porbandar, Bhavnagar and Jamnagar. A negligible number of 400 birds (0.91%) was found at the Mahi estuary (Table 2.1c-2).

Lesser Flamingos were recorded from Dholidhaja and Nayaka dam of Surendranagar and absent at the rest of the Inland Fresh Water Wetlands (Table 2.1d).

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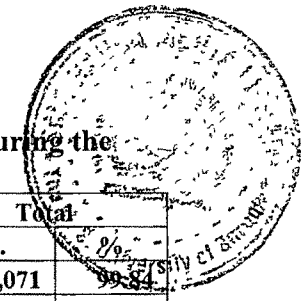

Table 2.1: Distribution of Flamingos in Different Habitats of Gujarat during the Non-breeding Season

Habitat	Greater Flamingo		Lesser Flamingo		Total	
	No.	%	No.	%	No.	%
(A) Coastal Wetlands	**32,406**	**98.37**	**3,72,665**	**99.97**	**4,05,071**	**99.84**
(I) Salt Pans	23,277	70 66	42,629	11 44	65,906	16 25
(II) Coastal/Mudflat Area						
(i) Sea Coast	2,744	08 33	2,85,973	76.71	2,88,717	71 16
(ii) Rann of Kachchh	0	00.00	0	00 00	0	00 00
(III) Coastal Fresh Water	6,385	19 38	44,063	11 82	50,448	12 43
(B) Inland Wetland	**537**	**01.63**	**113**	**00.03**	**650**	**00.16**
Total	**32,943**	**100**	**3,72,778**	**100**	**4,05,721**	**100**
%	**08.12**		**91.88**		**100**	

Table 2.1a: Distribution of Flamingos in Salt Pans during the Non-breeding Season

Site	Greater Flamingo	Lesser Flamingo	Total
1. Ahmedabad			
Dholera-GHCL	**1,425**	**500**	**1,925**
2. Amreli			
Jafrabad	105	55	160
Port Victor	318	0	318
Patvagam	57	0	57
Total	**480**	**55**	**535**
3. Bhavnagar			
Kumbharwada IPCL	200	3,000	3,200
Nirma	2,678	196	2,874
New Port	3,646	5,570	9,216
High Way to Nirma	5	0	5
Avania	61	0	61
Total	**6,590**	**8,766**	**15,356**
4. Jamnagar			
(i) Charakala	5,945	28,610	34,555
(ii) Jamnagar			
Birla	305	13	318
Valsura	496	1,466	1,962
Halar	94	264	358
Rozi Bet	26	0	26
Rozi Pier	231	25	256
Sanctuary	1,063	73	1,136
Khijadia	901	0	901
(iii) Okha			
Dalda Bundar	160	0	160
Aarambhada	8	0	8
Vadinar	1,000	147	1,147
Total	**10,229**	**30,598**	**40,827**
5. Porbandar			
Jawar	**4,553**	**2,710**	**7,263**
Total	**23,277**	**42,629**	**65,906**

Table 2.1b: Distribution of Flamingos in Coastal/Mudflat Areas during the Non-breeding Season

Site	Greater Flamingo	Lesser Flamingo	Total
(A) Sea Coast			
1. Ahmedabad			
Dholera, GHCL	0	1,62,000	1,62,000
Dholera, Rah Talav	0	3,000	3,000
Total	**0**	**1,65,000**	**1,65,000**
2. Amreli			
Jafrabad Kharapat	**500**	**50**	**550**
3. Anand			
Dhuwaran	0	1,000	1,000
Khambhat	0	40,150	40,150
Tada Talav	0	20,000	20,000
Vadgam	200	1,267	1,467
Total	**200**	**62,417**	**62,617**
4. Bhavnagar			
(i) New Port Creek	0	1,083	1,083
(ii) Ghogha-Hathab Bunglow	0	110	110
(iii) Nikol Bandhara	300	1,200	1,500
(iv) Shetruanji Estuary			
Gopnath	0	50,000	50,000
Sartanpur	0	5,000	5,000
Total	**300**	**57,393**	**57,693**
5. Jamnagar			
Meethapur Fatak	97	0	97
Dwarka to Charakala Road	8	0	8
Pindhara	320	0	320
Narara	96	14	110
Total	**521**	**14**	**535**
6. Kachchh			
Bhadreshwar Creek	35	74	109
Rukmavati Creek	16	0	16
Ratnal Creek	2	0	2
Nakti Creek	800	1,000	1,800
Total	**853**	**1,074**	**1,927**
7. Navsari			
Nani Kakarad	355	0	355
Onjal	15	25	40
Total	**370**	**25**	**395**
Total	**2,744**	**2,85,973**	**2,88,717**
(B) Rann of Kachchh			
Entire Rann	**0**	**0**	**0**
Total	**2,744**	**2,85,973**	**2,88,717**

Table 2.1 (c-1): Distribution of Flamingos in Coastal Fresh Water Wetlands during the Non-breeding Season

Site	Greater Flamingo	Lesser Flamingo	Total
1. Ahmedabad			
Tarakpur-Sabarmati Est.	**144**	**0**	**144**
2. Amreli			
Pipri (FWP)	10	0	10
Patvagam (FWP)	12	0	12
Total	**22**	**0**	**22**
3. Bhavnagar			
Kumbharwada (Sw. P)	0	4,200	4,200
Nikol Bandar (TR)	177	0	177
Total	**177**	**4,200**	**4,377**
4. Jamnagar			
B/H Railway Station (Sw. P)	**6**	**769**	**775**
5. Junagadh			
Kaj Wetland-TR	**2,000**	**250**	**2,250**
6. Porbandar			
Bird Sanctuary (Sw. P)	80	0	80
Chhaya Rann (Sw. P)	10	7,769	7,779
Gosa Karli (TR)	2,916	28,515	31,431
Karli Bridge (TR)	0	250	250
Meedha Creek (TR)	1,030	1,910	2,940
Total	**4,036**	**38,444**	**42,480**
7. Vadodara			
Mahi-Gambhira Bridge	**0**	**400**	**400**
Total	**6,385**	**44,063**	**50,448**

Sw P- Sewage Pond; TR-Tidal Regulator; FWP-Fresh Water Pond; B/H- Behind; Est.-Estuary

Table 2.1 (c-2): Distribution of Flamingos in Coastal Fresh Water Wetlands during the Non-breeding Season

	Greater Flamingo		Lesser Flamingo		Total	
Wetlands	**No.**	**%**	**No.**	**%**	**No.**	**%**
(a) Fresh Water Pond	22	00.34	0	0	22	00.04
(b) Sewage Pond mixed with						
(i) Industrial Effluents	10	00.16	7,769	17.63	7,779	15.42
(ii) Influence of Sea Water	86	01.35	4,969	11.28	5,055	10.02
(c) Tidal Regulator	6,123	95.89	30,925	70.18	37,048	73.44
(d) River/Estuary	144	02.26	400	00.91	544	01.08
Total	**6,385**	**100**	**44,063**	**100**	**50,448**	**100**

Table 2.1d: Distribution of Flamingos in Inland Wetlands during the Non-breeding Season

Site	Greater Flamingo	Lesser Flamingo	Total
1. Ahmedabad			
Jetalpur (VP)	4	0	4
Sarkhej (Sw P)	93	0	93
Total	**97**	**0**	**97**
2. Anand			
Lambhvel (Sw P)	**96**	**0**	**96**
3. Bhavnagar			
Kareda (VP)	10	0	10
Odarka (VP)	70	0	70
Total	**80**	**0**	**80**
4. Jamnagar			
Kuranga (VP)	**14**	**0**	**14**
5. Kachchh			
Hamirsar Tank (IP)	1	0	1
Rudramata Dam (IP)	72	0	72
Vijay Sagar Reservoir	2	0	2
Total	**75**	**0**	**75**
6. Mehsana			
Thol Bird Sanctuary	**13**	**0**	**13**
7. Rajkot			
Aji-II (IP)	10	0	10
Nyari-I (IP)	39	0	39
Fad Dang Beti (IP)	31	0	31
Lunivav (IP)	6	0	6
Total	**86**	**0**	**86**
8. Sabarkantha			
Limbhoi (IP)	**1**	**0**	**1**
9. Surendranagar			
Dholidhaja Dam	0	13	13
Nayaka Dam (IP)	70	100	170
Total	**70**	**113**	**183**
10. Vadodara			
Muval (VP)	**5**	**0**	**5**
Total	**537**	**113**	**650**

VP-Village Pond; IP- Irrigation Pond; Sw P-Sewage Pond

Conclusions:

1. Habitat preference of both the species of flamingos during the non-breeding season was very apparent. They were largely concentrated at the Coastal Wetlands and negligible at the Inland Wetlands.

2. The Rann of Kachchh was dry and no flamingo was recorded from the Rann. The flamingos were distributed in rest of the habitats and showed their preference among the different types (Fig. 2).

3. Greater Flamingos preferred Salt Pans and Lesser Flamingos preferred Coastal Mudflats.

4. Since Lesser Flamingos were negligible at the Inland Wetlands and not found on fresh water village ponds amongst the Coastal Fresh Water Wetlands, it seems that they avoided the fresh water wetlands. The Lesser Flamingos were recorded at rest of the categories of Coastal Fresh Water Wetlands (*i e.* tidal regulators and sewage ponds) as well as at the Salt Pans. Since both the habitats had saline/alkaline water, Lesser Flamingo's specificity for saline/alkaline wetland is apparent.

5. The Greater Flamingos were found at all the categories of wetlands, which indicated their adaptability. Ability of the Greater Flamingos to exploit all types of wetlands might be the basis for its wider distribution in the state (Present Study) as well as its cosmopolitan distribution (Ogilvie and Ogilvie, 1986).

2.2 Habitat Preference of Flamingos during Breeding Season (October 2003):

All the flamingos were concentrated at the Coastal Wetlands (100%) and absent at the Inland wetland of Gujarat during the breeding season. Highest concentration of flamingos was at the mudflats of Rann of Kachchh (94.09%). Negligible number was at the mudflat of sea coast of Gujarat (5.24%), salt pans (0.43%) and Coastal Fresh Water (0.24%) (Table 2.2).

Distribution of Greater Flamingo:

A total of 1,73,130 Greater Flamingos were recorded during the breeding season. Highest number was recorded from the mudflats of Rann of Kachchh (99.42%). Negligible number was recorded from the Salt Pans (0.58%), which included salt pans of Dholera, Ahmedabad and Bhavnagar (Table 2.2a). The Greater Flamingos were absent at Other Coastal Sites of Gujarat and Coastal Fresh Water Wetlands (Table 2.2).

The Greater Flamingos were largely concentrated at the inundated Great Rann of Kachchh and absent at the Little Rann of Kachchh. Major concentration in Great Rann was around Flamingo City-their traditional breeding ground. They were absent in north-west part of Great Rann. Considerably good population of Greater Flamingos was recorded in the inundated Rann areas of Amarapar and Shivgadh (Table 2.2b).

Distribution of Lesser Flamingo:

A total of 6,65,920 Lesser Flamingos were recorded during the breeding season. Highest concentration of Lesser Flamingo was recorded from the Rann of Kachchh (92.70%). A small number was also recorded from the Mudflats and Sea Coast of Gujarat. Negligible number was recorded from Coastal Fresh Water Wetland (0.3%) and Salt Pans (0.09%) (Table 2.2). They were absent at Inland Wetlands.

Lesser Flamingos were recorded from the salt pans around Bhavnagar and Charakala (Table 2.2a).

Considerably good number was recorded from the mudflats and sea coast of Dholera, followed by Bhavnagar. Major concentration of Lesser Flamingos was in the inundated Great Rann of Kachchh (92.7%). In the Great Rann, very large number was recorded at Shiranivandh and the Rann of Bela (Table 2.2b).

Among the Coastal Fresh Water Wetlands, Lesser Flamingos were recorded only from the Chhaya Rann-a sewage pond of Porbandar city (Table 2.2c).

Table 2.2: Distribution of Flamingos in Different Habitats of Gujarat during the Breeding Season

Habitat	Greater Flamingo		Lesser Flamingo		Total	
	No.	%	No.	%	No.	%
(A) Coastal Wetlands	**1,73,130**	**100**	**6,65,920**	**100**	**8,39,050**	**100**
(I) Salt Pan	1,000	00.58	2,600	00 39	3,600	00 43
(II) Coastal/mudflats Area						
(i) Gujarat Coast	0	00 00	44,000	06.61	44,000	05.24
(ii) Rann of Kachchh	1,72,130	99.42	6,17,320	92.70	7,89,450	94.09
(III) Coastal Fresh Water	0	00 00	2,000	00 30	2,000	00.24
(B) Inland Wetland	**0**	**00.00**	**0**	**00.00**	**0**	**00.00**
Total	**1,73,130**	**100**	**6,65,920**	**100**	**8,39,050**	**100**
%	**20.64**		**79.36**		**100**	

Table 2.2a: Distribution of Flamingos in Salt Pans during the Breeding Season

Site	Greater Flamingo	Lesser Flamingo	Total
1. Ahmedabad			
Dholera, GHCL	**200**	**0**	**200**
2. Bhavnagar			
New Port	600	300	900
Kumbharwada	200	2000	2200
Total	**800**	**2300**	**3100**
3. Jamnagar			
Charakala	**0**	**300**	**300**
Total	**1000**	**2,600**	**3600**

Table 2.2b: Distribution of Flamingos in Coastal/Mudflat Areas during the Breeding Season

Site	Greater Flamingo	Lesser Flamingo	Total
(A) Sea Coast			
1. Ahmedabad			
Dholera, GHCL	0	38,000	38,000
2. Anand	0	0	0
Khambhat-Dhuwaran	0	0	0
3. Bhavnagar			
Adhelai Port	0	6,000	6,000
3. Gandhidham			
Kandala Port	0	0	0
5. Porbandar			
Kuchadi	0	0	0
Meedha Creek	0	0	0
Total	**0**	**44,000**	**44,000**
(B) Rann of Kachchh			
Great Rann of Kachchh			
Amarapar	20,000	0	20,000
Bela Post	0	14,320	14,320
Chhapper Bet	303	0	303
Flamingo City	1,00,000	0	1,00,000
Kanthvandh	1,729	0	1,729
Nirweri to Nirwandh	98	0	98
Shiranivandh	0	6,00,000	6,00,000
Shivgadh	50,000	3,000	53,000
Total	**1,72,130**	**6,17,320**	**7,89,450**
Total (A) + (B)	**1,72,130**	**6,61,320**	**8,33,450**

Table 2.2c: Distribution of Flamingos in Coastal Fresh Water Wetlands during the Breeding Season

Site	Greater Flamingo	Lesser Flamingo	Total
1. Porbandar			
Chhaya Rann	**0**	**2000**	**2000**

Conclusions:

1. During the breeding season, both the species of flamingos showed highest preference for the mudflats (Fig. 2). All the flamingos had moved to the mudflats of Rann of Kachchh.

2. Their absence at Inland Wetlands suggested that they avoided these wetlands totally during breeding season.

3. Very low concentration in other types of wetlands *i e.* Salt Pans, Coastal Fresh Water Wetlands and Mudflats of other Sea Coast of Gujarat, suggested that they rarely preferred the remaining habitats during the breeding season.

2.3 Habitat Preference of Flamingos during Post-breeding Season (May-June, 2004):

The flamingos were recorded in all different types of habitats during the post-breeding season. Both the species were more concentrated at Coastal Wetlands (87.73%) but a considerable population was also found at Inland Wetland (12.23%). Within the Coastal Wetlands, major concentration was at the Salt Pans (62.88%) followed by Sea Coast of Gujarat (19.77%) and Mudflats of Rann of Kachchh (4.58%). Negligible number of flamingos was recorded from the Coastal Fresh Water Wetlands (0.50%) (Table 2.3).

Distribution of Greater Flamingo:

A total of 71,667 Greater Flamingos were recorded during the post-breeding season. Greater Flamingos were found largely at the Salt Pans (62.71%) followed by Inland Wetland (18.98%) and Mudflats of Rann of Kachchh (14.20%). Small number of Greater Flamingos was recorded from the Sea Coast and Mudflats of Gujarat (4.11%). The Greater Flamingos were absent at the Coastal Fresh Water Wetlands.

Good number of Greater Flamingos was recorded from the Salt Pans of Bhavnagar followed by the Salt Pans of Jamnagar, Amreli, Porbandar, Dholera and Kachchh (Table 2.3a).

Along the Sea Coasts of Gujarat, they were absent at Dholera and Bhavnagar, and were recorded from Khambhat of Anand in considerably good number. Larger concentration was still present at Flamingo City in the Great Rann (Table 2.3b).

Greater Flamingos showed wide distribution amongst the Inland Wetlands and were recorded from wetlands of 12 districts However, except for Chharidhandh and Nal Sarovar, their number was comparatively low at all other Inland Wetlands (Table 2.3d). They occurred in more number at fresh water wetlands during the breeding season as compared to the non-breeding season.

Distribution of Lesser Flamingo:

A total of 1,50,907 Lesser Flamingos were recorded during the post-breeding season. They were largely concentrated at the Salt Pans (62.96%) followed by Mudflats and Sea Coast of Gujarat state (27.20%). Considerable population was recorded from Inland Wetland (9.09%). The Lesser Flamingos were negligible on the Mudflats of Great Rann of Kachchh (0.02%) and Coastal Fresh Water Wetlands (0.73%) during the post- breeding season.

Highest number of Lesser Flamingos was recorded from the Salt Pans around Bhavnagar with a considerable number at Porbandar and Dholera followed by Jamnagar, Amreli and Kachchh (Table 2.3a).

Amongst the Coastal and Mudflat areas, highest concentration of Lesser Flamingos was recorded at Dholera and Khambhat of Anand followed by Porbandar and Bhavnagar (Table 2.3b).

Lesser Flamingos were recorded from tidal regulators among the Coastal Fresh Water Wetlands but were absent in rest of the wetlands (Table 2.3c). Amongst the Inland Wetlands, they were recorded only at Nal Sarovar, Sarkhej and Chharidhandh (Table 2.3d).

Table 2.3: Distribution of Flamingos in Different Habitats of Gujarat during the Post-breeding Season

Habitat	Greater Flamingo		Lesser Flamingo		Total	
	No.	%	No.	%	No.	%
(A) Coastal Wetlands	**58,066**	**81.02**	**1,37,192**	**90.91**	**1,95,258**	**87.73**
(I) Salt Pan	44,938	62.71	95,015	62.96	1,39,953	62.88
(II) Coastal/Mudflat Area						
(i) Sea Coast	2,948	04.11	41,054	27.20	44,002	19.77
(ii) Rann of Kachchh	10,180	14.20	23	00.02	10,203	04.58
(III) Coastal Fresh Water	0	00.00	1,100	00.73	1,100	00.50
(B) Inland Wetland	**13,601**	**18.98**	**13,715**	**09.09**	**27,316**	**12.27**
Total	**71,667**	**100**	**1,50,907**	**100**	**2,22,574**	**100**
%	**67.80**		**32.20**		**100**	

Table 2.3a: Distribution of Flamingos in Salt Pans during the Post-breeding Season

Site	Greater Flamingo	Lesser Flamingo	Total
1. Ahmedabad			
Dholera, GHCL	**1,568**	**6,143**	**7,711**
2. Amreli			
GHCL Bherai	660	204	864
Khera, Patva, Kathivadar	295	5	300
Victor	2,175	10	2,185
Chikhali	400	1,500	1,900
Total	**3,530**	**1,719**	**5,249**
3. Bhavnagar			
Nirma	15,975	11,839	27,814
New Port	16,062	45,775	61,837
Kumbharwada	700	15,900	16,600
Total	**32,737**	**73,514**	**1,06,251**
4. Jamnagar			
Aarambhada	100	0	100
Charakala	4,219	2,296	6,515
Valsura	18	3,020	3,038
Total	**4,337**	**5,316**	**9,653**
5. Kachchh			
Malia	**266**	**23**	**289**
6. Porbandar			
Jawar	**2,500**	**8,300**	**10,800**
Total	**44,938**	**95,015**	**1,39,953**

Table 2.3b: Distribution of Flamingos in Coastal/Mudflat Areas during the Post-breeding Season

Site	Greater Flamingo	Lesser Flamingo	Total
(A) Sea Coast			
1. Ahmedabad			
Dholera, GHCL	**0**	**15,000**	**15,000**
2. Anand			
Khambhat-Vadgam	0	6,019	6,019
Vasana Pump House	2,700	11,300	14,000
Khambhat Vasana Coast	0	3,000	3,000
Near Navi Akhol	1	0	1
Total	**2,701**	**20,319**	**23,020**
3. Bhavnagar			
Mahuva, Pingleshwar	**0**	**135**	**135**
4. Jamnagar			
Meethapur	**17**	**0**	**17**
5. Porbandar			
Birla Creek	**230**	**5,600**	**5,830**
Total	**2,948**	**41,054**	**44,002**
(B) Rann of Kachchh			
Flamingo city	9,914	0	9,914
India bridge	266	23	289
Total	**10,180**	**23**	**10,203**
Total	**13,128**	**41,077**	**54205**

Table 2.3c: Distribution of Flamingos in Coastal Fresh Water Wetlands during the Post-breeding Season

Site	Greater Flamingo	Lesser Flamingo	Total
1. Junagadh			
Kodinar	0	800	800
2. Porbandar			
Gosa Karli	0	300	300
Total	**0**	**1,100**	**1,100**

Table 2.3d: Distribution of Flamingos in Inland Wetlands during the Post-breeding Season

Site	Greater Flamingo	Lesser Flamingo	Total
1. Ahmedabad			
Chandola Talav	30	0	30
Nal Sarovar	5,100	11,130	16,230
Sarkhej	217	10	227
Total	**5,347**	**11,140**	**16,487**
2. Amreli			
Khodiyar Dam	**111**	**0**	**111**
3. Anand			
Lambhvel	**392**	**0**	**392**
4. Banaskantha			
Dantiwada	7	**0**	7
5. Bhavnagar			
Bor Talav	**150**	**0**	**150**
6. Jamnagar			
Ranjit Sagar Dam	30	0	30
Sinhan Dam	10	0	10
Total	**40**	**0**	**40**
7. Kachchh			
Chharidhandh	5,905	2,575	8,480
Devisar	20	0	20
Dhonsa	25	0	25
Total	**5,950**	**2,575**	**8,525**
8. Kheda			
Vadala	**100**	**0**	**100**
9. Mehsana			
Thol	**500**	**0**	**500**
10. Rajkot			
Aji-I	10	0	10
Lalpari	313	0	313
Machhu-Morbi	40	0	40
Nyari-I	0	0	0
Total	**363**	**0**	**363**
11. Surendranagar			
Bhaskarpura	600	0	600
Viramgam	40	0	40
Total	**640**	**0**	**640**
12. Vadodara			
Vadhawana	**1**	**0**	**1**
Total	**13,601**	**13,715**	**27,316**

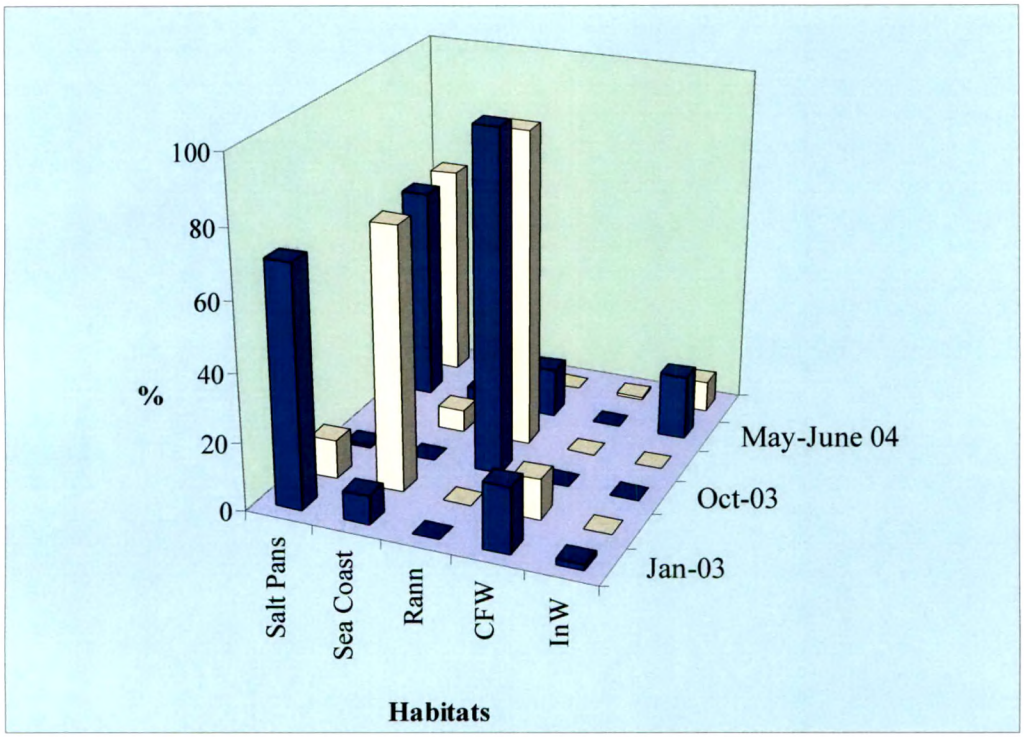

Fig. 2: Distribution of Flamingos in Different Habitats

GF- Greater Flamingos; LF-Lesser Flamingos

CFW-Coastal Fresh Water; InW- Inland Wetland

Conclusions:

1. During the post-breeding season, the flamingos again occupied almost all different types of habitats.

2 Both the species of flamingos showed highest preference for the salt pans and comparatively low preference for the mudflats (Fig. 2).

3 Their presence in Inland Wetlands, suggested that they preferred Inland Wetlands, once the breeding was over.

4. Greater Flamingos occupied large number of Inland Fresh water Wetlands. Their number was low at all the other wetlands except Chharidhandh and Nal Sarovar. This suggested that they distributed themselves to more and more Inland Wetlands in small number. This may be to reduce the competition for food amongst the adult and immature flamingos.

5. The presence of Lesser Flamingos at Chharidhandh and Nal Sarovar with saline water and absence in other Fresh Water Inland Wetland, suggest that the Lesser Flamingos totally avoid fresh water wetlands. Their preference for the saline wetlands was apparent.