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MARSH BULLETIN

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Status of Water Birds in Restored Southern Iraqi Marshes

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Abstract

Fifty seven species of water birds were recorded in three restored marshes during monitoring period (May 2004- May 2005), fifty four in Huwayzah marsh, fourty in Suq Shuyukh and twenty nine in East-Hammar. Pygmy cormorant (*Phalacrocorax pygmeus*) was the most dominant species in Huwayzah marsh, little egret (*Egretta garzetta*) in Suq Shuyukh, while little egret (*Egretta garzetta*) & gulls in East-Hammar. Higher numbers of individuals were recorded in Huwayzah marsh in comparison with other marshes.

1-Introduction

The marshes of southern Iraqi were the largest wetlands of Middle East. These marshes were considered as feeding and nesting area for many residents and migratory water birds (Allouse, 1960 and 1961; Scott and Carp, 1982).

Twelve of the wetlands of lower Mesopotamia were listed as wetlands of international important by Carp (1980). Huwayzah and Hammar include both Suq-Shuyukh and East Hammar marshes have sites 36 & 39 respectively and have been identified as "Important Bird Areas" by Birdlife International (Evans, 1994).

Birdlife International has also identified the Mesopotamia marshes of Iraq as an "Endemic Bird Area" i.e. an important concentration of bird biodiversity where habitat destruction would cause disproportionately large number of species extinctions (ICBP, 1992).

Allouse in (1960, 1961 and 1962) mentioned that the total number of bird species in Iraq was 375 of these 134 species were water birds.

Several surveys were done on water birds in some marshes of Mesopotamia. During the seventies of the last century Georgae and Vielliard (1970); Koning and Dijksen (1973); Carp (1975); Scott and Carp (1982), Scott

(1995) surveyed extensively the middle and southern marshes of Iraq. Al-Robaae (1986 & 1994) showed the observation and abundance of water birds in the vicinity of Basrah. After desiccation of the marshes during the early nineties Salem (1995) and Al-Robaae and Salem (1996) were surveyed three swamps in Basrah, and Razzaza lake in middle of Iraq for ducks during 1993-1994 migratory season.

Other researches concerned with the negative effects of some water birds on fish farms (Salih *et al*. 1990; Al-Nasiri and Hasson, 1999; Al-Nasiri and Abbas, 2001 and Abed, 2005 b).

It is vital to monitored the water birds after long period of desiccation in marshes of southern Iraq and if the desiccation had altered the bird's assemblage in these marshes.

Study Area

Two sites in each monitored marsh were chosen to survey the water birds. in Huwayzah marsh were Um Alnaaj, GPS reading (N: 31 38 30, E: 47 35 21) and Taraba, GPS reading (N: 31 29 48, E: 47 31 48), in Suq Shuyukh were Amia, GPS reading (N: 30 51 41, E: 46 38 13)) and Al wineas, GPS reading (N: 30 51 50, E: 46 40 42), and in East-Hammar Burkah, GPS reading (N: 30 40 22, E: 47 33 03) and Saddah GPS reading (N: 30 40 04, E: 47 38 06).

2-Materials and Methods

Field Observation

Survey and identification of different species recorded monthly by using binocular. Count was made for number of individual of each species. Visiting nesting sites was made during spawning season.

Laboratory working

Classified list was made monthly for each monitored marsh consist the scientific name, number and numerical abundance of the observed birds. Identification of water birds was made according to Allouse (1960 , 1961 and 1962) and Porter *et al.* (1996). Richness, diversity and evenness were calculated as follow:

Richness (D) = S-1 / ln N (Mariani *et al*., 2002)

Diversity (H) = -Sum pi ln pi (Shannon and weaver, 1949)

Evenness (J) = H / ln S (Pielon, 1969)

Where as: S = number of species, N= total number of birds individuals, pi = numerical abundance.

3-Results

The total numbers of individuals recorded during monitoring period (May 2004- May 2005) showed in fig. (1). In general Huwayzah showed dominance in numbers of birds for most of the year. Peaks were in November in Huwayzah (1824) and Suq Shuyukh (373) and in April in East Hammar (805).

The total numbers of species recorded during monitoring period were displayed in fig (2). Higher number of species were observed in April, in Huwayzah, and Suq Shuyukh with peaks (30 and 23) respectively, while the peak in East Hammar was (21) in May, 2005.

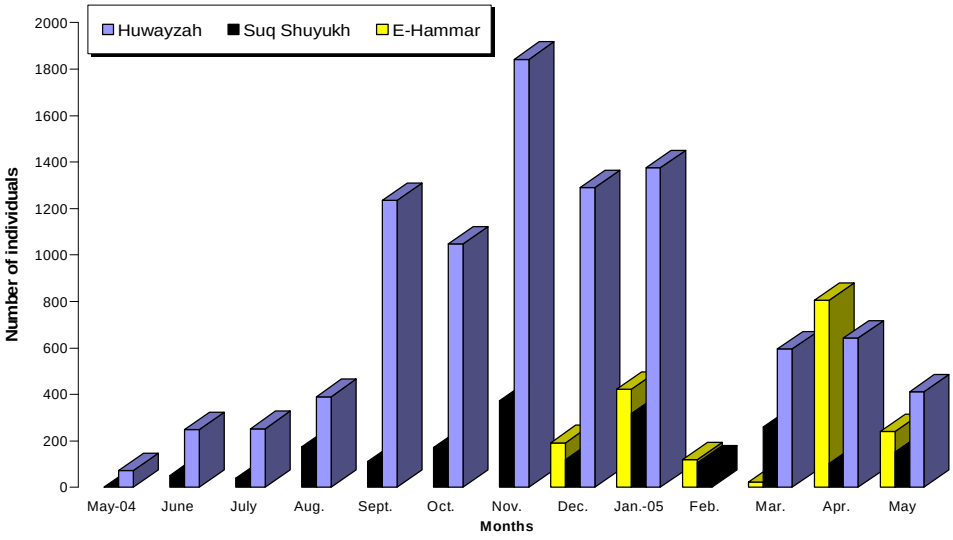

Fig.(1): Number of individuals recorded during monitoring period.

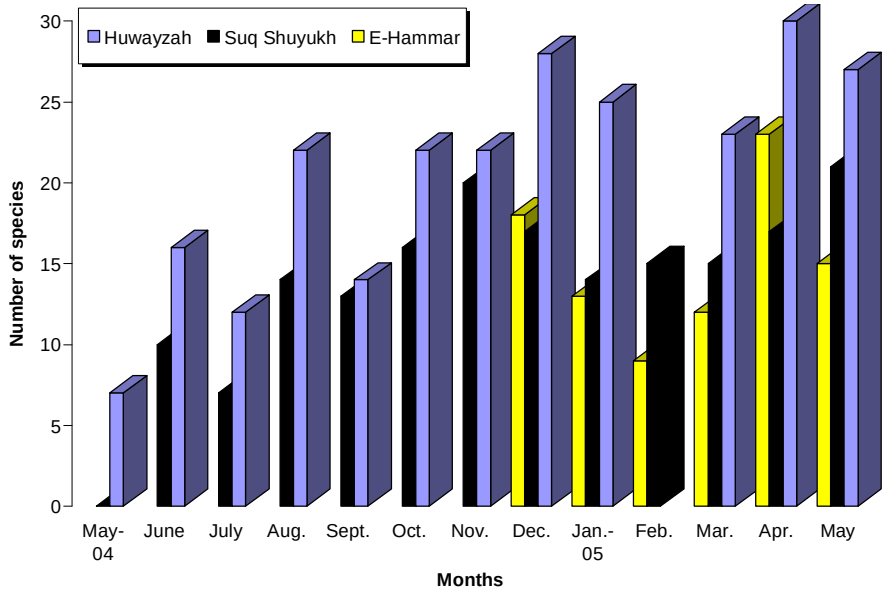

Fig.(2): Number of species recorded during monitoring period.

Fig. (3 & 4) showed the birds population as orders and annual percentage of individuals and species recorded in Huwayzah marsh.

showed the birds populations as orders and percentage of individuals and species recorded in East Hammar, Charadriiformes occupied the first rank in species and individuals followed by Ciconiiformes.

Pelecaniformes occupied the first rank in individuals while it came in the third in number of species, Ciconiiformes was in the second rank in species and individuals, Charadriiformes occupied the third rank in individuals while it came in the first rank in species.

Fig. (5 & 6) showed the birds populations in Suq Shuyukh as orders and percentage of individuals and species. Ciconiiformes occupied the first rank in individuals and second in species while Charadriiformes came the first in species and second in individuals. Coraciiformes occupied the third rank in individuals while came fifth in species. Fig. (7 & 8) .

Twenty two species were appeared in all monitored marshes, these species were black headed gull, bittern, black winged stilt, common kingfisher, common gull, cattle egret, grey heron, great white heron, little bittern, little egret, little gull, little tern, pied kingfisher, pygmy cormorant, redwattled plover, red shank, slender billed gull, squacco heron, whiskered tern, white breasted kingfisher white tailed plover and purple heron (Tab.1).

Fifteen species were appeared in Huwayzah and Suq Shuyukh marshes, these species were avocet, common snipe, dunlin, coot, glossy ibis, little grebe, marbled teal, marsh sandpiper, mallard, night heron, teal, spotted crake, moorhen, spoonbill & wigeon, and seven species showed in Huwayzah and East Hammar were, common tern, great black headed gull, greenshank, herring gull, white stork, white winged black tern & white checked tern (Tab.1).

Ten species showed in Huwayzah marsh were, cormorant, darter, gargany, greylag goose, little stint, sacred ibis, black tailed godwit, green sandpiper & Kentish plover, while three species showed in Suq Shuyukh marsh were, shoveler, great crested grebe & purple gallinule (Tab.1).

Table (2) illustrated other birds were seen in the monitored marshes Twenty four species were appeared. Marsh harrier was appeared more abundance in Huwayzah marsh than the other marshes. Black francolin and Pin-tailed sandgrouse were seen in Huwayzah marsh only. Passeriformes was occupied the first rank in the number of species followed by Falconiformes. Starling was appeared in the end of summer and autumn and seen flying in flocks in highly numbers

Fig. (9) illustrates indices of richness, diversity, and evenness during the monitoring period, richness peak were recorded in April in Huwayzah and east Hammar and in May, 05 in Suq Shuyukh, in general reveals higher richness in Huwayzah more than others. The peaks of diversity were recorded in August in Huwayzah and in April and May, 05 in east Hammar and Suq Shuyukh respectively, there were monthly fluctuated in diversity in Huwayzah, East Hammar recorded the lowest values. The peak of evenness was recorded during May, 04, July, and May, 05 in Huwayzah, Suq Shuyukh, and East Hammar respectively.

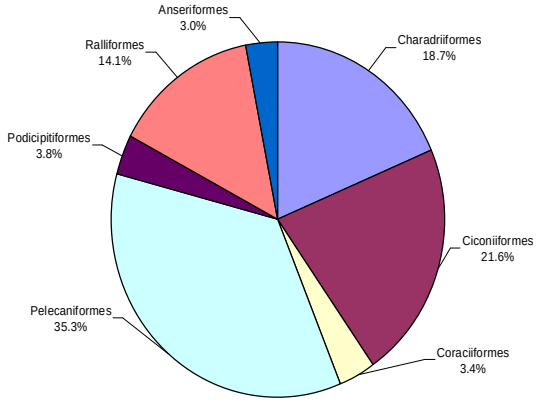

Fig.(3): Avifauna as percentage of indivduals in each order in Huwayzah marsh.

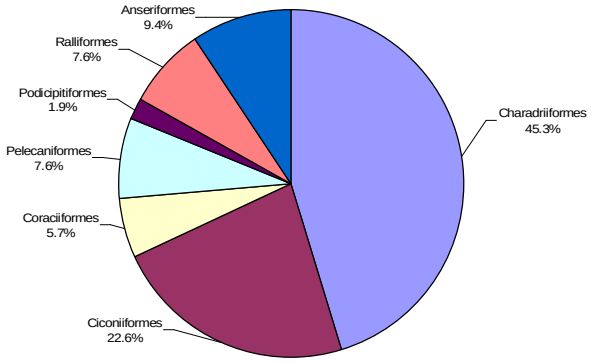

Fig.(4): Avifauna as percentage of species in each order in Huwayzah marsh.

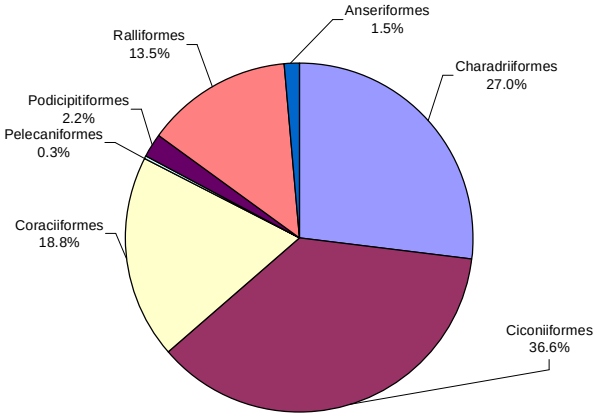

Fig.(5) Avifauna as percentage of individuals in each order in Suq-Shuyukh mar

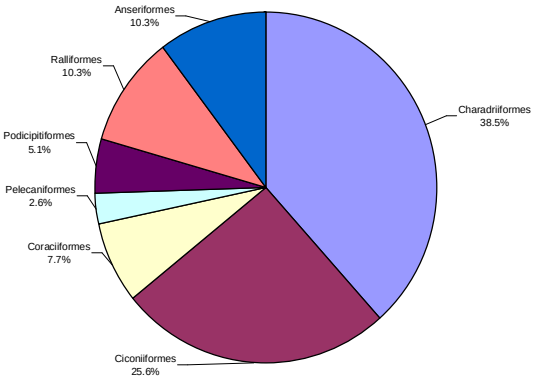

Fig.(6): Avifauna as percentage of species in each order in Suq-Shuyukh marsh.

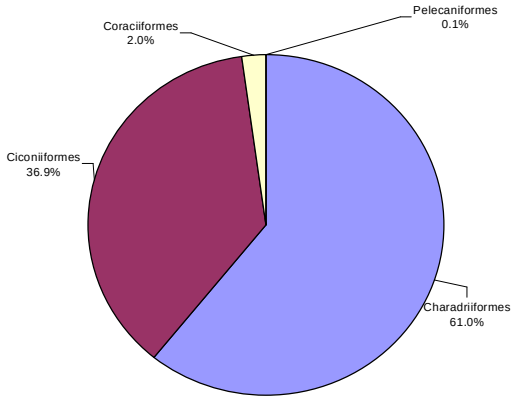

Fig.(7) Avifauna fauna as percentage of individuals in each order in East Hammar marsh.

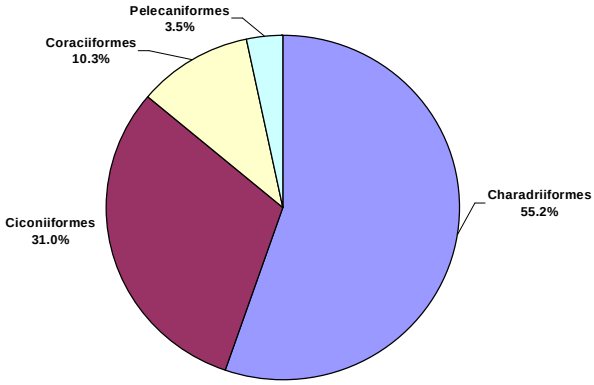

Fig. (8) Avifauva as percentage of species in each order East Hammar marsh.

Table (1): Water birds recorded in the monitored marshes.

Order	English name	Scientific name	Huwayzah	Suq Shuyukh	East Hammar
Podicipitiformes	Little grebe	*Tachybaptus ruficollis*	+	+	
	Creasted grebe	*Podiceps cristatus*		+	
Pelecaniformes	Cormorant	*Phalacrocorax carbo sinensis*	+		
	Pygmy cormorant	*Phalacrocorax pygmeus*	+	+	+
Ciconiformes	Darter	*Anhinga rufa*	+		
	Bittern	*Botaurus stellaris*	+	+	+
	Little bittern	*Ixobrychus minutus*	+	+	+
	Night heron	*Nycticorax nycticorax*	+	+	
	Squacco heron	*Ardeola ralloides*	+	+	+
	Cattle egret	*Bubulcus ibis*	+	+	+
	Little egret	*Egretta garzetta*	+	+	+
	Great white heron	*Egretta alba*	+	+	+
	Grey heron	*Ardea cinerea*	+	+	+
Ciconiformes	Purple heron	*Ardea purpurea*	+	+	+
	White stork	*Ciconia ciconia*	+		+
	Glossy ibis	*Plegadis falcinellus*	+	+	
	Sacred ibis	*Threskiornis aethiopicus*	+		
	Spoonbill	*Platalea leucorodia*	+	+	
Anseriformes	Greylag goose	*Anser anser*	+		
	Wigeon	*Anas penelope*	+	+	
	Teal	*Anas crecca*	+	+	
	Mallard	*Anas platyrhynchos*	+	+	
	Gargany	*Anas querquedulla*	+		
	Shoveler	*Anas clypeata*		+	
	Marbled teal	*Marmaronetta angustirostris*	+	+	
	Tufted duck	*Aythya fuligula*	+		
Ralliformes	Spotted crake	*Porzana porzana*	+	+	
	Moorhen	*Gallinula chloropus*	+	+	
	Coot	*Fulica atra*	+	+	
	Purple gallinule	*Porophyrio porphyrio*		+	

Order	English name	Scientific name	Huwayzah	Suq Shuyukh	East Hammar
Charadriformes	Black winged stilt	*Himantopus himantopus*	+	+	+
	Avocet	*Recurvirostra avosetta*	+	+	
	Kentish plover	*Charadrius alexandrinus*	+		
	Redwatled plover	*Vanellus indicus*	+	+	+
	White tailed plover	*Chetusia leucura*	+	+	+
	Little stint	*Calidris minuta*	+		
	Dunlin	*Calidris alpina*	+	+	
	Common snipe	*Gallinago gallinago*	+	+	
	Black tailed godwit	*Limosa limosa*	+		
	Redshank	*Tringa totanus*	+	+	+
	Marsh sandpiper	*Tringa stagnatilis*	+	+	
	Greenshank	*Tringa nebularia*	+		+
	Green sandpiper	*Tringa ochropus*	+		
	Little gull	*Larus minutus*	+	+	+
	Black headed gull	*Larus ridibundus*	+	+	+
	Slender billed gull	*Larus genei*	+	+	+
	Common gull	*Larus canus*	+	+	+
	Great black headed gull	*Larus ichthyaetus*	+		+
	Herring gull	*Larus argentatus*	+		+
Charadriformes	Common tern	*Sterna hirundo*	+		+
	White checked tern	*Sterna repressa*	+		+
	Little tern	*Sterna albifrons*	+	+	+
	Whiskered tern	*Chlidonias hybridus*	+	+	+
	White winged black tern	*Chlidonias leucopterus*	+		+
Coraciiformes	Common kingfisher	*Alcedo atthis*	+	+	+
	White breasted kingfisher	*Halcyon smyrnensis*	+	+	+
	Pied kingfisher	*Ceryle rudis*	+	+	+

Table (2): Other birds recorded in the monitored marshes.

Order	English name	Scientific name
Falconiformes	Marsh harrier	*Circus aeruginosus*
	Hen harrier	*Circus cyaneus*
	Sparrowhawk	*Accipter nisus*
	Greater spotted eagle	*Aquila clanga*
	Steppe eagle	*Aquila nipalensis*
	Golden eagle	*Aquila chrysaetos*
Galliformes	Black francolin	*Francolinus francolinus*
	See-see partridge	*Ammoperdix griseogularis*
Columbiformes	Pin-tailed sandgrouse	*Pterocles alchata*
	Rock dove	*Columba livia*
	Collared dove	*Streptopella decaocto*
Coraciiformes	Blue cheeked bee-eater	*Merops superciliosus*
	Indian roller	*Coracias benghalensis*
	Hoopoe	*Upupa epops*
Passeriformes	Crested lark	*Galerida cristata*
	Desert lark	*Ammomanes deserti*
	White wagtail	*Motacilla alba*
	White cheeked bulbul	*Pycnonotus leucogenys*
	Robin	*Erithacus rubecula*
	Iraq babbler	*Turdoides altirostris*
	Hooded crow	*Corvus corone cornix*
	Raven	*Corvus corax*
	Starling	*Sturnus vulgaris*
	House sparrow	*Passer domesticus*

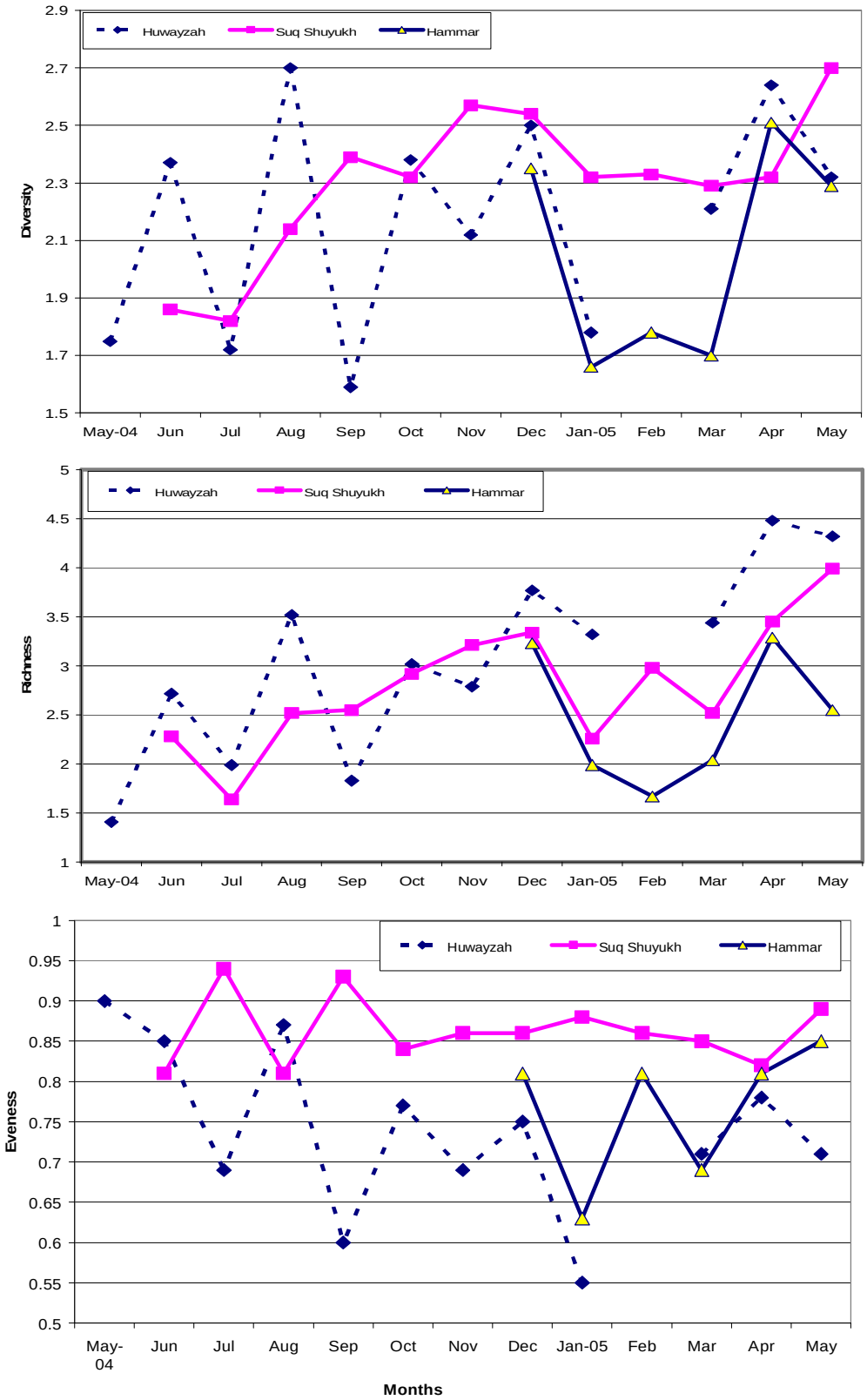

Fig.(9): Richness, Diversity and Eveness of water birds in monitored marshes.

4-Discussion

It is previously known that marshes of southern Mesopotamia played a role as refuge for resident and migratory water birds, feeding, resting and spawning sites (Allouse, 1960 and 1961; Georgae and Vielliard, 1970; Carp, 1975; Scott and Carp, 1982).

Fifty-seven species were recorded of these fifty-four in Huwayzah marsh, fourty in Suq Shuyukh and twenty-nine in East-Hammar. Abed (2005 a) showed that the total number of species during Autumn 2004 was 33 and 24 species in Huwayzah and Suq Shuyukh marshes respectively, while Abed (2006) showed that the total number of species during Autumn 2005 was 40, 35 and 32 species in Huwayzah, Suq Shuyukh and E-Hammar marshes respectively which indicated increased in number of species appeared in the monitoring marshes.

Scott and Evans (1993) concluded that in the 1970s, and perhaps even more recently, the marshlands of lower Mesopotamia were of international significance for at least 68 species of waterfowl. Allouse (1960, 1961 and 1962) cited 375 species of birds in Iraq, Scott (1995) showed there were 378 species of birds have been recorded in lower Mesopotamia, of these species 134 species, which are dependent on the wetland habitat and occur in Mesopotamia in significant number, there for the recovery index was 42.5% which indicated more than half of species not seen during the monitoring period.

Five species were more abundant in Huwayzah marsh, pygmy cormorant, little egret, little grebe, common gull & black headed gull, and in Suq Shuyukh marsh were, little egret, pied kingfisher, squacco heron, purple heron & white tailed plover, while in East Hammar were, little egret, black headed gull, slender billed gull, common gull & little tern.

Data obtained from our recent monitoring program indicated that the southern marshes retaining their previous functions through locating and visiting of spawning sites were nest and chicks found both in Suq Shuyukh and Huwayzah belong to several species mostly resident (Little egret, Glossy ibis, Squacco heron, Bittern, Night heron, Grey heron, Purple heron, Little bittern, Purple gallinule, Marbled teal and Moorhen).

Occurrence of migratory Goose and Ducks (Anatidae), Coots and others during winter indicate that restoration is taking place and was successful.

Fifty seven species were recorded in the three monitored marshes, represent 67.8% (average) of previously recorded species (84 species average), and to the Allouse, (1960, 1961) the restoration index was 42.5% which

indicated more than half of species not seen in the monitoring period.

For Anseriformes thirteen species were recorded in the Huwayzah and Suq Shuyukh marshes and local market, previously Koning and Dijksen (1973) were found 15 species, Scott (1995) recorded 17species, Salem (1995), Al-Robaae and Salem (1996) recorded 15 species, percentage of recovery reaches 76% of previously recorded species, and to the Allouse, (1960) the restoration index was 53.8%. In general, number of individuals recorded was much lower than historical records.

Our counts of pygmy cormorant *Phalacrocorax pygmeus* were 3516, 6 and 2 individuals in Huwayzah, Suq-Shuyukh and E-Hammar marshes respectively, there for pygmy cormorant was a common resident, breeding in Huwayzah marsh.

Marbled teal *Marmaronetta angustirostris* is known to breed in Mesopotamia (Green,1993), current survey and visiting the nesting area, agreed whit Green(1993) and confirmed the breeding of this species in addition to other species were breed in nesting ground in Suq-Shuyukh and Huwayzah marshes.

The Mesopotamian marshes are of considerable importance for breeding waterfowl, including a substantial proportion of the world population of the Marbled teal and entire world of the Middle Eastern subspecies African darter (Scott, 1995).

The isolated Mesopotamian population of Sacred ibis seems to have followed a similar fate to the Goliath heron and African darter. Scott (1995) was mention this species appears to have become in Iraq in recent years, and has not been reported since the early 1980s. Current study reveals the count of this species was 27 individuals in Huwayzah marsh and greed with Scott (1995).

Table (2) showed other birds were seen in the monitored marshes. Six species of Falconiformes were seen, Scott (1995) showed that 13 species of raptors were observed during the waterfowl survey in 1979 and other species were nine species. Marsh harrier and hooded crow were more abundance in Huwayzah marsh than others were.

Clear seasonal changes and high diversity of water birds of the monitored marshes and also with agreement with previous studies (Georgae and Vielliard, 1970; Koning and Dijksen, 1973; Carp, 1975 and Scott, 1995).

Resident species were record to be 15 that occurred more than nine months, certain territorial appeared like Pygmy cormorant dominant in Huwayzah, Little egret in Suq Shuyukh and Gulls & Tern in East Hammar.

Comparing of present survey with that of historical records (tab. 3) indicate a general improvement in number of species recorded.

The situation was more encouraging for Anatidae since we recorded thirteen species (tab.4) out of 17 species recorded previously by Scott (1995) and 15 species recorded by Salem (1995), Al-Robaae and Salem (1996).

Table (3): Comparison the number of species and individuals recorded with previous surveys.

Study	Marsh	No. of species	Total individuals of all species
Georgae and Vielliard, 1970	Lower Mesopotamia	55	59378
Koning and Dijksen, 1973	Lower Mesopotamia	61	152126
Carp, 1975	Lower Mesopotamia	47	90823
Scott, 1995 (for 1972,1975,1979)	Hammar	73	288220
Present study, 2004-2005	Huwayzah	54	9399
	Suq Shuyukh	40	1975
	East Hammar	29	1998 (for six months)
	Total	57	

Table (4): Number of Ducks and Coot recorded during winter season from Huwayzah and Suq Shuyukh marshes and local market.

Species	Huwayzah		Suq Shuyukh	
	Field	Local market	Field	Local market
Marbled teal	86	18	-	-
Teal	69	-	2	32
Mallard	60	-	2	26
Wigeon	-	140	-	4
Pochard	-	50	-	-
Gadwall	-	32	-	4
Gargany	-	10	-	2
Tufted duck	-	8	-	-
Shoveler	-	-	1	12
Pintail	-	-	-	24
Ferruginous	-	-	-	4
Falcated duke	-	-	-	2
Greylag goose	6	-	-	-
Coot	450	5800	41	6000

Conclusions

§ Spawning sites and chicks of different species were seen.

§ Winter visitors were seen and thirteen species of Anatidae were classified.

§ Several species considers as resident for marshes.

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حالة الطيور المائية في أهوار جنوب العراق المعاد تأهيلها

جاسم محسن عبد

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الخلاصة

سجل تواجد 57 نوعاً من الطيور المائية في أهوار جنوب العراق (الحويزة وسوق الشيوخ وشرق الحمار) التي تم مراقبتها بعد إعادة المياه أليها وللفترة من آيار2004 ولغاية آيار 2005، سجل منها 54 نوعاً في هور الحويزة، و40 نوعاً في هور سوق الشيوخ، و29 نوعاً في هور شرق الحمار.الطير الأكثر سيادة كان في هور الحويزة غراب البحر الأقزم *Phalacrocorax pygmeus* وفي هور سوق الـشيوخ البيوضي الصغير *Egretta garzetta* وفي هور شرق الحمار البيوضي الصغير *Egretta garzetta* والنوارس. سجل تواجد أعداد أعلى للطيور المائية في هور الحويزة بالمقارنة مع الهورين الآخرين.