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THE CURRENT STATUS OF THE VERTEBRATE DIVERSITY IN Al-DALMAJ MARSH, Al-DIWANIYA PROVINCE

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ABSTRACT

A survey conducted at Dalmaj marsh, Al-Diwaniya Province during 2013 revealed that the marsh encounters a considerable part of the Iraqi vertebrate fauna including 147 species belonging to five classes; Pisces, Amphibia, Reptilia, Aves and Mammalia. Some species are of globally conservation importance. The present results are discussed with the pertinent literature.

INTRODUCTION

The global temperature increase may led to changes in the hydroclimatic parameters and have profound impacts on the physical and biological components of the ecosystems in the Euphrates-Tigris Basinas well as on the socio-economic developments of the basin countries (Bozkurt and Sen, 2013). So, studying the biological components of Dalmaj marsh area ecosystems seems necessary to provide a reliable data to compare with during next years which may have more obvious impacts of the global temperature increase. Al-Dalmaj marsh is a large isolated marsh situated at the heart of the Mesopotamian alluvial plain with estimated area of 100000 ha and altitude of less than 20 m (Nature Iraq, 2013), lies to the west of the Tigris River approximately 35 km southwest of Kut City, Wasit Province (Evans, 1994) and about 65 km north east to Al-Diwaniya City, Al-Diwaniya Province. It constitutes an open water lake and marsh with dense reed beds of *Phragmites* and *Typha* in addition to the submerged plants and the plants along the edge of the marsh. It receives water from the Main Outfall Drain (MOD) and discharges again to the MOD with no stable water-level (Salim et al.,2009). The depth of water ranges from less than 0.5 m in the banks of marshy areas to about 1.5-2 m in the center of the lake.

Al-Dalmaj marsh is an important area for the Iraqi biodiversity since it lies within a semi-desert area and comprises terrestrial and aquatic habitats allowing a wide range of biodiversity components. The vertebrates are the most prominent group in the marsh especially birds and fishes and for a lesser extent reptiles and mammals. However, it is still poorly studied and further scientific work is required to understand the biodiversity and the relationships among the biotic and abiotic factors in the area (Nature Iraq, 2013).

The aim of this work is to throw a light on the current situation of vertebrates living in the area, and to provide assessment notes on certain species from the conservation point of view.

MATERIALS AND METHODS

Site description: The following brief description depends mainly on Nature Iraq (2013). Dalmaj wetland is located 40 km east of Diwaniya city and 40 km southwest of Kut city. It

includes both terrestrial habitats ranging from arid areas to true desert with sand dunes, and a large body of water that can be divided into an open-water lake reaching depths exceeding 2 m and true marshes with dense reed beds and shallower water (less than 1 m). Embankments surround the marsh to contain the body of water. The southern section of Dalmaj is mainly mudflats, featuring Phragmites and Typha reed beds in addition to submerged plants with occasional dry ground scattered with bushes and terrestrial species. The eastern part of the site includes much of the open and deeper Dalmaj Lake that lies within the embankment. To the east of the embankment there are shallow, salty marshes with a dense strip of reed beds and Tamarix bushes. The freshwater marshes in the northern part of the site are defined by rich plant cover, such as *Phragmites* and *Typha* reed beds and Tamarix in drier areas. These marshes have clear, transparent waters and submerged plants, which provide excellent protection for juvenile fish and offer high oxygen production

Eight field trips (2/season) of 2-3 days each were conducted to Al-Dalmaj marsh lies within the Al-Diwaniya Province during the year 2013 to report on the vertebrate species present in the area. The data presented here is mainly the author's personal observations, direct collection of specimens, photographing, observing species in the field with naked eyes or by the aid of a binocular, examining of remains and traces of vertebrates and interviews with hunters and locals in the area. Specific identifications were possible following Coad (2010) for fishes, Khalaf (1959) for herpetofauna, Salim et al. (2006) for birds, and Harisson (1968, 1981) for mammals.

RESULTS AND DISCUSSION

Table 1 shows that the vertebrate groups in Dalmaj marsh comprise five classes, Class Pisces, Class Amphibia, Class Reptilia, Class Aves and Class Mammalia. This would includes 147 species of vertebrates.

Fishes:
1-Carasobarbus luteus
2- Barbus xanthopterus
3- Mesopotamichthyes sharpeyi
*4- Cyprinus carpio**
*5- Tilapia zilli***
6- Liza abu
7- Silurus triostegus

Amphibians:
8- Bufo viridis
9- Rana ridibunda

Reptiles:
10- Maurymes caspica
11- Laudakia persica
12- Acanthodactylus sp.
13- Gymnodactylus scaber
14- Mabuya aurata
15- Natrix tessellata
16- Eryx jaculus

Birds:
17- Tachybaptus ruficollis
18- Phalacrocorax carbo
19- Pelecanus onocrotalus
20- Botaurus stellaris
21- Ixobrychus minutus
22- Nycticorax nycticorax
23- Egretta garzetta
24- Ardeola ralloides
25- Bubulcus ibis
26- Ardea cinerea
27- Ardea purpuria
28- Ciconia ciconia
29- Plegadis falcinellus
30- Anser erythrops
31- Anser anser
32- Tadorna ferruginea
33- Tadorna tadotna
34- Anas penelope
35- Anas strepera
36- Anas crecca
37- Anas platyrhynchos
38- Anas acuta
39- Anas clypeata
40- Marmaronetta angustirostris
41- Netta rufina
42- Aythya nyroca
43- Aythya ferina
44- Milvus migrans
45- Neophron percnopterus
46- Circus aeruginosus
47- Buteo rufinus
48- Aquila clanga
49- Falco tinnunculus
50- Francolinus francolinus
51- Rallus aquaticus
52- Gallinula chloropus
53- Fulica atra
54- Porphyrio porphyrio
55- Grus grus
56- Chlamydotis undulata
57- Himantopus himantopus
58- Recurvirostra avosetta
59- Glareola pratincola
60- Charadrius dubius
61- Charadrius alexandrinus
62- Hoplopterus spinosus
63- Hoplopterus indicus
64- Chettusia leucura
65- Calidris minuta
66- Calidris temminckii

67- Calidris alpina
68- Gallinago gallinago
69- Limosa limosa
70- Tringa totanus
71- Tringa stagnatilis
72- Tringa nebularia
73- Tringa ochropus
74- Tringa glareola
75- Larus ridibundus
76- Larus genei
77- Larus armenicus
78- Sterna caspia
79- Sterna hirundo
80- Chlidonia hybridus
81- Chlidonia leucopterus
82- Pterocles alchata
83- Columba livia
84- Columba palumbus
85- Streptopelia decaocto
86- Streptopelia turtur
87- Streptopelia senegalensis
88- Athene noctua
89- Tyto alba
90- Caprimulgus aegyptius
91- Halcyon smyrnensis
92- Ceryle rudis
93- Alcedo atthis
94- Merops superciliosus
95- Coracias benghalensis
96- Upupa epops
97- Ammomanes deserti
98- Galerida cristata
99- Calandrella brachydactyla
100- Riparia riparia
101- Hirundo rustica
102- Anthus trivialis
103- Anthus spinoletta
104- Motacilla flava
105- Motacilla alba
106- Pycnonotus leucogenys
107- Hypocolius ampelinus
108- Erithacus rubicula
109- Saxicola rubetra
110- Saxicola torquata
111- Oenanthe deserti
112- Cisticola juncidis
113- Prinia gracilis
114- Acrocephalus griseldis
115- Hippolias pallida
116- Sylvia mystacea
117- Phylloscopus collybita

118- Turdoides altirostris
119- Turdoides caudatus
120- Lanius collurio
121- Lanius nubicus
122- Corvus frugilegus
123- Corvus corone
124- Sturnus vulgaris
125- Passer domesticus
126- Passer hispaniolensis
127- Passer moabiticus.
128- Carduelis carduelis
129- Carduelis chloris
130- Rhodospiza obsoleta
131- Emberiza hortulana
132- Emberiza schoeniclus
133- Miliaria calandra.

Mammals:
134- Pipistrellus kuhlii
135- Taphozous nudiventris
136- Hystrix indica
137- Mus musculus
138- Rattus rattus
*139- Rattus norvegicus**
140- Lepus capensis
141- Canis aureus
142- Canis lupus
143- Vulpes vulpes
144- Hyaena hyaena
145- Herpestes auropunctatus
146- Meles meles
147- Sus scrofa

*exotic species
**invasive species

Dalmaj is rich in biodiversity, being a wintering ground for numerous waterfowl and a main breeding area for Marbled Duck *Marmaronetta angustirostris*, Ferruginous Duck *Aythya nyroca*, and Red-crested Pochard *Netta rufina*, three of the four known breeding ducks in Iraq, and a major breeding site for the Endangered Basra Reed Warbler (nature Iraq, 2013). The list of species included in table 1 indicates that the marsh contains a considerable part of the Iraqi avifauna which counts to more than 400 species. The number of the recorded birds in this study is 117 while Nature Iraq (2013) mentioned that 140 migratory and resident birds were seen in the marsh. In general, it seems that the biodiversity components of the marsh is rather in a good condition. Some species in table 1 are of certain conservation importance including *Tilapia zilli* (Gervais, 1848), *Marmaronetta angustriostris* (Menetries, 1823) L. Reichenbach, 1853, *Aythya nyroca* and *Acrocephalus griseldus*.

Tilapia zilli: (fig. 1), this is an invasive fish. It is considered a potential competitor with native fish for food and spawning areas (Molnar, 2008). In Dalmaj marsh, the author was able to observe it is widely distributed along the marsh shore. On 28.5.2013 a couple of male and

female fishes were surrounded with a 30 cm diameter ball of hundreds of apparently newly hatched fishes just 1.5-2 m off the shore. The author countred 7 pairs of parents with their juvenile balls in about 50 m distance of the shore. The parents ran away only a little when thrown with a stone and the juvenile ball tends to decrease the diameter and become denser, but sooner the parents return back to their juveniles defending them.

Fig. 1: *Tilapia zilli* from al-Dalmaj marsh.

***Marmaronetta angustirostris*:** It is a resident bird in suitable habitats in the middle and south and for a lesser extent in the north, and breeds from May to July (Allouse, 1960). IUCN red list for the year 2012 considered this duck globally vulnerable (A2cd+3cd+4cd ver 3.1) with decreasing population trend (Salim *et al*., 2009; BirdLife international, 2012). The marsh proved to be a suitable breeding site for this species and the author was able to take pictures of duckling with parents (fig. 2). However, severe hunting practices is going on in the area and thousands of this duck was brought to local markets during the period from September to March (fig. 3). The hunting pressure is extremely critical during September to end of November at which hunting was practically targeted this duck since it the only available game bird in reasonable number.

Fig.2: Mother marbled teal *Marmaronetta angustirostris* and eight ducklings in Dalmaj marsh

Fig. 3: Marbled teals brought from Dalmaj marsh sold at a local market in Baghdad city.

***Aythya nyroca*:** (fig. 4) It is considered globally Near Threatened ver 3.1 with a decreasing populatioin trend (IUCN, 2013). The author's personal observations indicated that this duck breeds in Al-Attariya marsh southeast of Baghdad not far from Dalmaj marsh since the 70s decade of the last century. George and Vielliard (1970) recorded only 31 individuals, then Scott and Carp (1982) could not find this species in their survey to Iraqi marshes. It was proved later that it breeds in some other sites in the middle and south of Iraq including Dalmaj

marsh and southern Iraqi marshes. Howeverm Salim *et al.* (2009) stated that further surveys will show this duck to be more common and more widespread in the Mesopotamian marshes. Fig. (5) shows hundreds of ferruginous ducks captured in Al-Dalmaj marsh and sold at a local market in Baghdad city.

Fig 4: Male Ferruginous duck *Aythya nyroca*

Fig. 5: Hundreds of ferruginous ducks brought from Dalmaj marsh sold at a local market in Baghdad

***Acrocephalus griseldis*:** The Basra Reed Warbler is a globally endangered bird (IUCN, 2013). Iraq is known to encounter more than 90% of the world population of the bird (Richardson and Hussain, 2006). Nature Iraq (2013) counted up to 900 breeding pairs in Dalmaj marsh. Many nests were noted by the author among reed beds in the marsh.

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الواقع الحالي لتنوع الفقريات في هور الدلمج، محافظة الديوانية

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الخلاصة

بين مسح اجري في هور الدلمج محافظة الديوانية خلال عام ٢٠١٣ بان هذا الهور يشتمل على جزء مهم من المجموعة الحيوانية الفقرية العراقية ويضم ١٤٧ نوعا تعود الى خمسة اصناف هي الاسماك والبرمائيات والزواحف والطيور واللبائن. تبين ان بعض الانواع المسجلة ذات اهمية من ناحية الاهمية العالمية للمحافظة. نوقشت النتائج الحالية في ضوء البحوث ذات العلاقة.