

# **ECOLOGY: BIODIVERSITY**

## THE STATUS OF THE ENDANGERED SPECIES OF SOME BIRDS AND MAMMALS IN OR AROUND THE IRAQI MARSHES

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### ABSTRACT

The present article surveyed the status of some threatened species of mammals and water birds, due to sudden changes in environmental conditions and overfishing or the use of insecticides, with the view of their presence before and after the changes of environment. Three main aspects are focused upon in this review:

- 1- A list of the endangered species such as the Goliath Heron, Darter (*Anhinga rufa*) and fish otter (*Lutra lutra*).
- 2- A list of the species that have undergone a total extirpation:
  - a. Within the marshes, such as:  
Bandicoot rat; *Erythronesokia bunnii* Khajuria; *Rattus n. norvegicus* Erxleben; *Rattus rattus* L.; *Mus musculus* L. and Falcated Teal.
  - b. Around the marshes, such as:  
*Panthera leo* (L.), chittas, wolf, fox, jackal and the Indian mongoose.
- 3- Extirpated mammals and birds, and the possibility of rehabilitation of the Marsh environment for restoration of these animals.

## **AQUATIC BIRDS FROM THE BASRAH MARSHES**

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### **ABSTRACT**

The marshlands of southern Iraq are considered as a major habitat for different resident birds. In addition, they are located along a passageway of migratory birds that fly toward regions to the north and south of Iraq. The previous review referred to the presence and passing of more than 350 species. However, recent environmental changes in the Iraqi marshes particularly the drainage process for substantial area caused a reduction in many species and the disappearance of others. A database for bird groups in a country like Iraq that is characterized by different large aquatic ecosystems is therefore of urgent necessity. This subject will be multipurpose requirements and will be of great importance in the near future it may well be supported by scientific research to maintain the environment and other factors relevant to birds' migration. The serious attempts to restore the Iraqi marshes after re-vegetation of the drained portions (approximately 60% of the total marshland area) considerably contribute to rehabilitation as represented by return of flocks of different bird species. Because of the need to record and monitor this vital group in biodiversity of such environment, the Marine Science Centre of the University of Basrah is conducting a project of bird monitoring in the Iraqi marshes. The aims of this project are to create a baseline for long-term monitoring and to create a database suitable for data-exchange facility with national, regional and international organizations. Some more specific aims of this monitoring program are:

- 1-Developing applicable studies of bird migration.
- 2-Construction for basic requirements of bird protection.
- 3-Continuous monitoring of bird numbers and their success and failure in nesting.
- 4-Protection of nests and residence sites from disturbance and development impacts.
- 5-Definition of migration direction by system tools.
- 6-Preparing a check-list of bird species in both marsh and coastal regions.
- 7-Preparing a poster pertaining to the protection of birds.

## **DATABASE OF ASSAFIA WILDLIFE SANCTUARY PARK**

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### **ABSTRACT**

A database was designed for Assafia Wildlife Sanctuary Park in Al-Huwaiza Marsh. This sanctuary belongs to the Basrah Agricultural Directory, and covers approximately 44 km<sup>2</sup>. The database initially will include fish, bird, and plant groups as well as a bibliography of literature on the marsh region. Each species is defined by scientific, common and local names with a colour photo and a brief description of its ecological and biological aspects. The total number of fish species involved is 28, the bird group includes 12 species, and the plant group is represented by 56 species. The bibliography contains 211 titles categorized into 15 subjects to facilitate the search process for users. The database eventually will include other biota such as invertebrates, phytoplankton and data relevant to hydrology and water quality.

## BIODIVERSITY OF THE FISH ASSEMBLAGES IN THREE RESTORED SOUTHERN IRAQI MARSHES

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### ABSTRACT

Species composition and fluctuation of ecological indices in three Iraqi southern marshes (Huwayza, Hammar and Chebaysh), were monitored during the period from October 2005 to September 2006. The fish assemblage of the southern marshes consists basically of freshwater species (both native and alien) except that of Al-Hammar, inhabited by both freshwater and marine species. The highest number of species (31) was collected from Hammar Marsh, and included sixteen marine species. However, Huwayza and Chebaysh were inhabited by fifteen and fourteen freshwater species, respectively. There was a pronounced increase in the numbers of both species and individuals in summer and fall and a subsequent decrease in winter. The number of species in winter (December-January) represents the actual constituent community of the southern marshes. Higher similarity values obtained between Huwayza and Chebaysh marshes, because both of these marshes were inhabited by only freshwater species. The lowest similarity between Huwayza and Hammar results from the presence of marine species in the latter marsh. Limited monthly fluctuations in basic ecological indices (diversity, richness and evenness) in Huwayza and Chebaysh could be related to limited numbers of freshwater species and relatively low numbers of individuals. Slightly higher values of ecological indices obtained from Hammar may be mainly due to the higher number of species, as well as to a higher number of individuals attributed to the migration of marine species. The evenness values suggest that only the more permanent community that is present year-round can tolerate the harsh marsh environment of wintertime, characterized by low temperature, low water level, and oligohaline water.

## **ANALYSIS OF GROWTH OF THREE CULTIVARS OF *Zea mays* L. IN THE THI-QAR MARSHES**

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### **ABSTRACT**

The study was carried out on the crop of *Zea mays* in the two autumn seasons of 2005 and 2006 on dried lands of the marshes in Al-Tar & El-Eslah villages of Thi-Qar Governorate in order to understand the effect of the timing of cultivation and the type of cultivar of *Zea mays* that differ in their ripening period. The growth was expressed in terms of dry weight at different stages of growth. The growth curves indicate differences in the 3 cultivars in the dry weight at all times of cultivations and in both seasons. The cultivar Bohooth106 showed predominance over the other two in both dry weight and at all cultivation periods. The timing of cultivation in mid-August was the best for all cultivars and especially for Bohooth106. The cultivar IPA5012 showed the lowest values of dry weight at all times of cultivation. The lowest growth values for all cultivars occurred in mid-July.

## AQUATIC PLANTS OF BASRAH AND THE SOUTHERN IRAQI MARSHES

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### ABSTRACT

There are about 104 aquatic and amphibian plant species in the marshes of southern Iraq. They belong to different major ranks. Eight of them are macroalgae, four are pteridophytes and the remaining 92 species are flowering plants. These plants are submerged, floating-leaved, or emergent. It was observed that many species disappeared after drying the marshes and have not yet been seen after rehabilitation. One species, *Hydrilla verticillata* (L.f.) Royle, is a new record for Iraq, and the area was invaded after drying by two wetland shrubs, *Tamarix brachystachys* Bunge and *T. ramosissima* (Ledeb.).