

LIVING RESOURCES MANAGEMENT AND FISHERIES

SECONDARY PRODUCTION OF THE CLADOCERAN *Daphnia magna* (Strauss 1918) IN A TEMPORARY POOL AT BASRAH, IRAQ

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ABSTRACT

Samples of *Daphnia magna* were collected every three days from a small pond near the end of Al-Rebat canal, one of the Shatt Al-Arab branches in Basrah, during the period from 20 December 1997 to 4 March 1998, with a plankton net of mesh size 0.090 mm. The daily growth rates of *D. magna* ranged between 0.001 mg for generation H and 0.0041 mg for generation A. The biomass of *D. magna* ranged between 1680.2 mg/m³ and 3039.7 mg/m³ during December 1997 and March 1998, respectively. The secondary productivity ranged between 555.7 and 3609.8 mg/m³/month during March and January 1998, respectively. However, production capability ranged between 0.18 and 1.51 during March and January 1998 respectively, with an overall average equal to 0.76.

**A NEW RECORD OF THE FRESH WATER CLAM *Anadonta vescoiana*
Bourguigant, 1856 (MOLLUSCA: BIVALVIA) FROM AL-EZZ RIVER IN IRAQI
MARSHES**

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ABSTRACT

The first record of the bivalve *Anadonta vescoiana* Bourguigant is described and classified in this paper. This bivalve was collected from Al-Ezz River in the Al-Amara marshes. It is considered a benthic fresh water clam. The measurement values attempt to define the shape of each bivalve and established the finer characters for this species in the marshes.

**THE SEASONAL ABUNDANCE OF PARASITES INFECTING THE ASIAN
CATFISH *Silurus triostegus* Heckel, 1843 AND THE MAIN ENVIRONMENTAL
FACTORS IN BASRAH, IRAQ**

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ABSTRACT

Limited studies on the ecology of fish parasites in Iraq have been carried out, but none of them was conducted on the ecology of parasites of the silurid fish *S. triostegus*. This species is one of the most important commercial fishes for human consumption, especially in the middle and northern regions of Iraq. The present study aimed to throw a light on the seasonal abundance of the parasites, which are detected from this important freshwater fish and the main environmental factors affecting the infection.

**EVALUATION OF IMMUNE RESPONSE OF FISH *Silurus triostegus* Heckel,
1843 INFECTED WITH SOME PARASITES IN BASRAH, IRAQ**

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ABSTRACT

The present study is designed to investigate the humoral immune response of *Silurus triostegus* infected with separate and mixed parasite infection using two serological tests IHA and AGID, cells involved in the immune response, sensitivity and specificity and cross-reaction between the two tested parasitic antigens.

**PARASITIC STUDY ON THE CATFISH *Silurus triostegus* Heckel, 1843 FROM
AL-HAMMAR MARSHES, BASRAH, IRAQ**

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ABSTRACT

Previous studies on parasitic fauna of *Silurus triostegus* referred to presence of 6 species of Protozoa, 15 species of Trematoda, 6 species of Cestoda, 2 species of Nematoda, 2 species of Acanthocephala and 5 species of Crustacea. The main purpose of the present study is to compile and add new information about parasites of *S. triostegus* in Iraq.

SPECIES COMPOSITION, ECOLOGICAL INDICES AND TROPHIC NATURE OF FISH ASSEMBLAGES IN AL-CHEBAYSH MARSH, SOUTHERN IRAQ

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ABSTRACT

Monthly fish samples were collected from the restored Al-Chebays marsh during the period from October 2005 to September 2006. Two stations were sampled; Abu-Sobat and Al-Baghdadia. Fourteen species were collected; all are freshwater species. Native species were represented by ten species, alien by four species, resident species by 8 species, seasonal by 1 species, and occasional by 5 species. *Liza abu* (Heckel) was the most dominant species followed by *Carassius carassius* (L.) and then by *Barbus luteus* (Heckel). Diversity ranged from 0.85 in November to 2.01 in July. Richness ranged from 0.78 in December to 1.66 in June and evenness ranged from 0.49 in January to 0.85 in June. Water temperature and salinity exhibited weak correlation coefficients with number of species and total catch. However, a medium correlation coefficient was obtained between total catch and both detritivorous and herbivorous fishes, and weak ones with carnivores and predators. The trophic pyramid of fish assemblage in Al-Chebays marsh consisted of an herbivorous group (*B. luteus* and *C. carassius*), a detritivorous group (*L. abu*), an omnivorous group (*Cyprinus carpio* L.), and a carnivorous group (*Acanthobrama marmid* Heckel, *Alburnus mossulensis* Heckel, *Heteropneustes fossilis* (Bloch), and *Mastacembelus mastacembelus* (Banks and Solander)). Two predators, *Silurus triostegus* Heckel and *Aspius vorax* Heckel, were found in the Al-Chebays marsh.

**SPECIES COMPOSITION, ECOLOGICAL INDICES AND TROPHIC NATURE
OF THE FISH ASSEMBLAGE IN THE RESTORED EAST HAMMAR MARSH,
SOUTHERN IRAQ**

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ABSTRACT

Monthly fish samples were collected from the restored East Hammar marsh during the period from October 2005 to September 2006. Two stations were sampled; Al-Mansouri and Burkah. Thirty-one species were collected; eleven of them were marine species. Native species were represented by 14 species, alien species by 6 species and marine species by 11 species. Resident species formed 32.2%, seasonal 16.0% and occasional 51.6%. *Liza abu* (Heckel) was the most dominant species, followed by *Carassius carassius* (L.) and then *Acanthobrama marmid* Heckel. Diversity ranged from 1.07 in September to 2.01 in July. Richness ranged from 0.74 in December to 2.83 in July and evenness ranged from 0.48 in November to 0.84 in December. A medium correlation coefficient was obtained between the number of species and total catch with water temperature and a weak one with salinity. A medium correlation coefficient was obtained between total catch with both predators and detritivores and also a medium correlation between predators and detritivores. The trophic pyramid of fish assemblage in the East Hammar marsh was formed of herbivores (*Barbus sharpeyi* Günther, *B. luteus* (Heckel) and *C. carassius*), detritivores (*L. abu*, *L. klunzingeri* (Day) and *L. subviridis* (Valenciennes)), omnivores (*Cyprinus carpio* L. and *Bathygobius fuscus* (Rüppell)) and carnivores (*Acanthobrama marmid* Heckel, *Alburnus mossulensis* Heckel, *Heteropneustes fossilis* (Bloch), and *Mastacembelus mastacembelus* (Banks and Solander)). Two predators existed in the marsh, including *Silurus triostegus* Heckel and *Aspius vorax* Heckel.