

Book Review

Anzali Wetland Basin Fishes, by Abbasi K., Moradi M. & Mirzajani A.R. 2018. North Green Books Publishing, Lahijan. First Edition, 144 p. ISBN: 978-622-6715-00-3. (In Persian)

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Abstract: Wetlands, as one of the most important natural habitats in the world, have a high ecological diversity. There are many wetlands in the Iranian Caspian Sea basin, that important one is the Anzali Wetland. This aquatic ecosystem is habitat of a significant portion of the fish species of the Caspian Sea basin. Therefore, the present work was aimed to reviews the book "Fish of Anzali Wetland" written by Abbasi et al. (2018). The book provides useful information about the morphological, biological, and ecological characteristics of its fish species as well as their conservation status. Since this book published in Farsi, therefor reviewing it by providing an abstract can be useful of ichthyologist and other researches.

Keywords: Anzali Wetland, Caspian Sea, Exotic, Endemic.

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Introduction

The Caspian Sea basin is important part of Iranian Inland water due to having a high diversity of fish species (Esmaeili et al. 2018; Radkhah et al. 2019). A total of 119 fish species have been reported from this basin, in which the families of Cyprinidae, Gobiidae and Clupeidae are most diverse taxa, respectively (Esmaeili et al. 2014; Radkhah et al. 2019). Anzali Wetland is one of the most important water body in the Caspian Sea basin (Radkhah et al. 2015, 2019). More than 10 important rivers enter this wetland and it is considered as habitat of many endemic species as well as spawning ground of those inhabit the Caspian Sea (Abbasi 2009). This aquatic ecosystem is of significant importance in the Caspian Sea basin; therefore, many studies have been carried out on its fishes (e.g. Karimpoor 1998; Abbasi et al. 2004; Abbasi et al. 2007).

We recently reviewed a book entitled "Fishes of Guilan" (Radkhah et al. 2019) from Abbasi Ranjbar who recently wrote another book entitled "Fish of the

Anzali Wetland basin" co-authored by Mehdi Moradi, and Alireza Mirzajani (Fig. 1) and published by North Green Books Publication (Lahijan, Guilan Province). This book provides a list of the Anzali Wetland fishes with their morphological, biological and ecological characteristics. Considering the importance of fish species of the Anzali Wetland, this work aimed to review this book by providing a brief overview of it different sections. Since this book published in Persian, therefor reviewing it by providing an abstract can be useful for ichthyologist and other researches.

The book is presented in two sections. The first part provides a review regarding the geological aspects of the Anzali Wetland, introduction of its fish species with a discussion regarding fish diversity by providing their list, stock status during the past years, and morphological features, and identification keys of the fish families. At the second section, the fish species of the families Petromyzontidae, Acipenseridae, Anguillidae, Clupeidae, Cyprinidae,

Table 1. List of fish species described from the Anzali Wetland (LC: Least Concern, NT: Near Threatened, CR: Critically Endangered, DD: Data Deficient, NE: Not Evaluated).

No.	Family	English name	Species	Conservation status
1		Common bream	<i>Abramis brama</i>	LC
2		Samii riffle minnow	<i>Alburnoides samii</i>	NE
3		Caspian shemaya	<i>Alburnus chalcoides</i>	LC
4		Kura bleak	<i>Alburnus filippi</i>	LC
5		North Caucasian bleak	<i>Alburnus hoheneracker</i>	LC
6		Kura barbel	<i>Barbus cyri</i>	NE
7		White bream	<i>Blicca bjoerkna</i>	LC
8		Caspian scraper	<i>Capoeta razii</i>	NE
9		Gold fish	<i>Carassius auratus</i>	LC
10		Prussian carp	<i>Carassius gibelio</i>	NE
11		Grass carp	<i>Ctenopharyngodon idella</i>	NE
12		Wild common carp	<i>Cyprinus carpio</i>	Vulnerable
13		Sharp belly	<i>Hemiculter leucisculus</i>	LC
14		Silver carp	<i>Hypophthalmichthys molitrix</i>	NT
15		Bighead carp	<i>Hypophthalmichthys nobilis</i>	DD
16		Moderlieschen	<i>Leucaspis delineatus</i>	LC
17		European asp	<i>Leuciscus aspius</i>	NE
18		Bulatmai barbel	<i>Luciobarbus capito</i>	Vulnerable
19		Caspian barbel	<i>Luciobarbus caspius</i>	NE
20		Sabre carp	<i>Pelecus cultratus</i>	LC
21	Cyprinidae	Topmouth gudgeon	<i>Pseudorasbora parva</i>	LC
22		European bitterling	<i>Rhodeus amarus</i>	LC
23		Caspian Roach	<i>Rutilus lacustris</i>	LC
24		Kutum	<i>Rutilus kutum</i>	NE
25		Redfin	<i>Scardinius erythrophthalmus</i>	LC
26		Transcaucasian chub	<i>Squalius turcicus</i>	LC
27		Tench	<i>Tinca tinca</i>	LC
28		Caspian vimba	<i>Vimba persa</i>	NE
29	Petromyzontidae	Caspian lamprey	<i>Caspiomyzon wagneri</i>	NT
30	Acipenseridae	Persian sturgeon	<i>Acipenser persicus</i>	CR
31		Stellate sturgeon	<i>Acipenser stellatus</i>	CR
32	Anguillidae	European eel	<i>Anguilla anguilla</i>	CR
33	Clupeidae	Caspian marine shad	<i>Alosa braschnikowi</i>	NE
34		Caspian shad	<i>Alosa caspia</i>	LC
35		Caspian tyulka	<i>Clupeonella caspia</i>	LC
36		Caspian anadromous shad	<i>Alosa kessleri</i>	LC
37	Cobitidae	Sania's spined loach	<i>Cobitis saniae</i>	NE
38		Caspian loach	<i>Sabanejewia caspia</i>	NE
39	Nemacheilidae	Safidrud stone loach	<i>Oxynemacheilus bergianus</i>	LC
40	Gobiidae	Transparent tadpole goby	<i>Benthophilus ctenolepidus</i>	NE
41		Caspian stellate tadpole goby	<i>Benthophilus leobergius</i>	LC
42		Caucasian dwarf goby	<i>Knipowitschia caucasica</i>	LC
43		-	<i>Ponticola bathybius</i>	NE
44		Caspian ratan, Ratan goby	<i>Ponticola goebelii</i>	NE
45		Caspian bighead goby	<i>Ponticola gorlap</i>	LC
46		Persian goby	<i>Ponticola iranica</i>	NE
47		Syrman goby	<i>Ponticola syrman</i>	LC
48		Caspian goby	<i>Neogobius caspius</i>	NE
49		Round goby	<i>Neogobius melanostomus</i>	LC
50		Caspian sand goby	<i>Neogobius pallasii</i>	LC
51		Eastern tubenose goby	<i>Proterorhinus nasalis</i>	LC
52	-	<i>Rhinogobius lindbergi</i>	NE	

Table 1. Continued.

No.	Family	English name	Species	Conservation status
53	Esocidae	Northern pike	<i>Esox lucius</i>	LC
54	Siluridae	Wels catfish	<i>Silurus glanis</i>	LC
55	Salmonidae	Caspian trout	<i>Salmo caspius</i>	NE
56		Brown trout	<i>Salmo trutta</i>	LC
57		Rainbow trout	<i>Oncorhynchus mykiss</i>	NE
58	Poeciliidae	Eastern mosquitofish	<i>Gambusia holbrooki</i>	LC
59		Guppy	<i>Poecilia reticulata</i>	LC
60	Atherinidae	Caspian silverside	<i>Atherina caspia</i>	NE
61	Mugilidae	Golden grey mullet	<i>Chelon auratus</i>	LC
62		Leaping mullet	<i>Chelon saleins</i>	LC
63	Percidae	Perch	<i>Perca fluviatilis</i>	LC
64		Pike perch	<i>Sander lucioperca</i>	LC
65		Estuarine perch	<i>Sander marinus</i>	DD
66	Syngnathidae	Caspian pipefish	<i>Syngnathus caspius</i>	LC
67	Gasterosteidae	Three spined stickleback	<i>Gasterosteus aculeatus</i>	LC
68		Ukrainian stickleback	<i>Pungitius platygaster</i>	LC
69	Channidae	Indonesian snakehead	<i>Channa micropeltes</i>	LC
70	Pangasiidae	Giant pangasius	<i>Pangasius sanitwongsei</i>	CR
71	Loricariidae	Suckermouth catfish	<i>Hypostomus plecostomus</i>	NE

Cobitidae, Nemacheilidae, Siluridae, Salmonidae, Esocidae, Gobiidae, Mugilidae, Atherinidae, Poeciliidae, Syngnathidae, Percidae, Gasterosteidae, Channidae, Pangasiidae and Loricariidae reported from the Anzali Wetland, are introduced (Table 1). In addition, information regarding each species are presented, including main morphological characteristics, distribution, ecological properties, body size, economical value and their stock status.

There are some taxonomic errors, including the name of *Chelon auratus* and *C. saleins* in the content table section that have been incorrectly listed as *Liza auratus* and *L. saleins* (p. VII), need to be corrected. Of course, their scientific names are correct in the main text. In addition, the *Rutilus caspicus* (p. 76) needs to be corrected as *R. lacustris* (Esmaeili et al. 2018; Radkhah et al. 2019), since it is junior synonym of *R. lacustris* (Levin et al. 2017). There are some typos as well e.g. the scientific name of the guppy (*Poecilia reticulata*) (p. 113) is not spelled correctly. In the Fishes of Guilan, some ornamental fish species viz. *Chitala chitala*, *Channa micropeltes*, *Pangasius* cf. *sanitwongsei* and *Hypostomus plecostomus* were reported from Iranian inland waters (Radkhah et al. 2019). Last three species have

been reported from the Anzali Wetland as well (pp. 113-115) probably due to releasing large sized specimens by aquarium hobbies, since their keeping is difficult by armature aquarium hobbyists. Therefore, their status needs to be investigated to decide for adding them into the Iranian freshwater checklist.

This book has many positive features e.g. the current status of endemic and exotic fishes, conservation status of fish species, some new record of exotic and newly described fishes, referring to different ecological forms of fishes with proper images and graphs, and expressing international cooperation to integrated management of the Anzali Wetland. However, there is no information regarding systematic status of the listed species, which we suggest to be addressed in the next edition. Given the above-mentioned features, this book is a useful reference for fishermen and ichthyologists. It can partially address the need for local fishermen to identify fish species in inland waters of the Caspian Sea basin. Since the conservation status of some fish species in the Caspian Sea basin and Anzali Wetlands has not been assessed so far, we suggest that the researchers conduct such a studies and the result of



Fig.1. Cover page of the book.

their conservation information in the Anzali Wetland can be effective for further conservation and management programs of this valuable wetland.

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نقد کتاب

ماهیان حوضه تالاب انزلی، عباسی ک.، مرادی م. و میرزاجانی ع.ر. ۱۳۹۷. انتشارات کتاب‌های سبز شمال، لاهیجان. ویرایش اول، ۱۴۴ صفحه. شابک: ۳-۰۰-۶۷۱۵-۶۲۲-۹۷۸ (به زبان فارسی)

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چکیده: تالاب‌ها به‌عنوان یکی از مهم‌ترین زیستگاه‌های طبیعی جهان از تنوع اکولوژیکی بالایی برخوردار هستند. تالاب‌های زیادی در حوضه دریای خزر وجود دارند که مهم‌ترین آن تالاب انزلی است. این اکوسیستم آبی زیستگاه بخش قابل توجهی از گونه‌های ماهی ساکن حوضه دریای خزر است. از این‌رو، اثر حاضر با هدف بررسی و نقد کتاب "ماهیان حوضه تالاب انزلی" تألیف عباسی و همکاران (۱۳۹۷) انجام شده است. این کتاب اطلاعات مفیدی در مورد خصوصیات ریخت‌شناسی، زیست‌شناختی و بوم‌شناختی گونه‌های ماهی و همچنین وضعیت حفاظتی آن‌ها را در تالاب انزلی ارائه می‌دهد. با توجه به این‌که کتاب مورد نظر به زبان فارسی چاپ شده است، نقد آن همراه با ارائه یک خلاصه می‌تواند برای ماهی‌شناسان و سایر پژوهشگران سودمند باشد.

کلمات کلیدی: تالاب انزلی، دریای خزر، غیربومی، بوم‌زاد.