



Zootaxa 2816: 1–64 (2011)
www.mapress.com/zootaxa/

Copyright © 2011 · Magnolia Press

Monograph

ISSN 1175-5326 (print edition)

ZOOTAXA

ISSN 1175-5334 (online edition)

ZOOTAXA

2816

A review of the freshwater fishes of the Kimberley region of Western Australia

DAVID L. MORGAN¹, GERALD R. ALLEN², BRADLEY J. PUSEY³ & DAMIEN W. BURROWS⁴

¹Freshwater Fish Group & Fish Health Unit, Centre for Fish & Fisheries Research, Murdoch University, South St Murdoch, Western Australia, 6150, Australia. E-mail: D.Morgan@murdoch.edu.au

²Department of Aquatic Zoology, Western Australian Museum, 49 Kew Street, Welshpool, Western Australia 6106, Australia. E-mail: tropical_reef@bigpond.com

³Australian Rivers Institute, Griffith University, Nathan, Queensland, 4111, Australia. E-mail: bpusey@westnet.com.au

⁴Australian Centre for Tropical Freshwater Research, James Cook University, Townsville, Queensland, 4811, Australia. E-mail: damien.burrows@jcu.edu.au

Magnolia Press
Auckland, New Zealand

David L. Morgan, Gerald R. Allen, Bradley J. Pusey & Damien W. Burrows
A review of the freshwater fishes of the Kimberley region of Western Australia
(*Zootaxa* 2816)

64 pp.; 30 cm.

12 April 2011

ISBN 978-1-86977-701-2 (paperback)

ISBN 978-1-86977-702-9 (Online edition)

FIRST PUBLISHED IN 2011 BY

Magnolia Press

P.O. Box 41-383

Auckland 1346

New Zealand

e-mail: zootaxa@mapress.com

<http://www.mapress.com/zootaxa/>

© 2011 Magnolia Press

All rights reserved.

No part of this publication may be reproduced, stored, transmitted or disseminated, in any form, or by any means, without prior written permission from the publisher, to whom all requests to reproduce copyright material should be directed in writing.

This authorization does not extend to any other kind of copying, by any means, in any form, and for any purpose other than private research use.

ISSN 1175-5326 (Print edition)

ISSN 1175-5334 (Online edition)

Table of contents

Abstract	4
Introduction	4
Material and methods	5
Freshwater fishes of the Kimberley	10
Family: Anguillidae	10
<i>Anguilla bicolor</i> McClelland	10
Family: Clupeidae	10
<i>Nematalosa erebi</i> (Günther)	10
Family: Ariidae	10
<i>Neoarius graeffei</i> (Kner & Steindachner)	10
<i>Neoarius midgleyi</i> (Kailola & Pierce)	11
Family: Plotosidae	11
<i>Anodontiglanis dahli</i> Rendahl	11
<i>Neosilurus ater</i> (Perugia)	11
<i>Neosilurus hyrtlii</i> Steindachner	11
<i>Neosilurus pseudospinosus</i> Allen and Feinberg	12
<i>Porochilus rendahli</i> (Whitley)	12
Family: Hemiramphidae	12
<i>Arrhamphus sclerolepis</i> Günther	12
Family: Belonidae	12
<i>Strongylura krefftii</i> (Günther)	12
Family: Atherinidae	12
<i>Craterocephalus helenae</i> Ivantsoff, Crowley and Allen	13
<i>Craterocephalus lentiginosus</i> Ivantsoff, Crowley and Allen	13
<i>Craterocephalus stramineus</i> (Whitley)	13
Family: Melanotaeniidae	13
<i>Melanotaenia australis</i> (Castelnau)	13
<i>Melanotaenia exquisita</i> Allen	14
<i>Melanotaenia gracilis</i> Allen	14
<i>Melanotaenia nigrans</i> Richardson	14
<i>Melanotaenia pygmaea</i> Allen	14
Family: Ambassidae	14
<i>Ambassis macleayi</i> (Castelnau)	14
<i>Ambassis</i> Sp. 1	15
<i>Ambassis</i> Sp. 2	15
<i>Parambassis gulliveri</i> (Castelnau)	15
Family: Terapontidae	15
<i>Amniataba percoides</i> (Günther)	15
<i>Hannia greenwayi</i> Vari	16
<i>Hephaestus epirrhinos</i> Vari and Hutchins	16
<i>Hephaestus jenkinsi</i> (Whitley)	16
<i>Leiopotherapon macrolepis</i> Vari	16
<i>Leiopotherapon unicolor</i> (Günther)	16
<i>Syncomistes butleri</i> Vari	16
<i>Syncomistes kimberleyensis</i> Vari	17
<i>Syncomistes rastellus</i> Vari and Hutchins.	17
<i>Syncomistes trigonicus</i> Vari	17
Family: Apogonidae	17
<i>Glossamia aprion</i> (Richardson)	17
Family: Toxotidae	17
<i>Toxotes chatareus</i> (Hamilton)	17
<i>Toxotes kimberleyensis</i> Allen	18
Family: Gobiidae	18
<i>Glossogobius giuris</i> (Hamilton)	18
Family: Eleotridae	18
<i>Hypseleotris compressa</i> (Krefft)	18
<i>Hypseleotris ejuncida</i> Hoese and Allen	18
<i>Hypseleotris kimberleyensis</i> Hoese and Allen	18
<i>Hypseleotris regalis</i> Hoese and Allen	19
<i>Kimberleyeleotris hutchinsi</i> Hoese and Allen	19
<i>Kimberleyeleotris notata</i> Hoese and Allen	19
<i>Mogurnda mogurnda</i> (Richardson)	19

<i>Mogurnda oligolepis</i> Allen and Jenkins	19
<i>Oxyeleotris lineolata</i> (Steindachner)	20
<i>Oxyeleotris selheimi</i> (Macleay)	20
Family: Soleidae	20
<i>Leptachirus triramus</i> Randall	20
Fish species diversity in the different river systems	20
Discussion	21
Acknowledgements	24
References	24

Abstract

This paper provides an overview of the freshwater fishes of the remote and sparsely populated Kimberley region of Western Australia, an area that has been subject to minimal scientific surveys, most of which have occurred in the last 30 years. A total of 49 freshwater fish species are reported from the region, but this number will likely grow as a result of future discoveries. It is an endemic hotspot, with ~40% of the species found nowhere else; many of which are known from only a few localities. The fauna is dominated by members of the Terapontidae (10 species) and Eleotridae (10 species), followed by the Plotosidae (five species), Melanotaeniidae (five species), Atherinidae (four species) and Ambassidae (four species). Additionally, in terms of freshwater fishes of the Kimberley, there are two species each in the Toxotidae and Ariidae, and a single species from each of the Anguillidae, Clupeidae, Hemiramphidae, Belonidae, Apogonidae, Gobiidae and Soleidae. There are currently no introduced fishes found in any major catchments of the Kimberley, however, there are records of the Eastern Mosquitofish (*Gambusia holbrooki*) from Cape Leveque (Morgan *et al.* 2004c) and the Redclaw Crayfish (*Cherax quadricarinatus*), which have recently been found within the Ord River basin (Doupé *et al.* 2004).

Key words: Western Australia, fish community, endemism, catchment

Introduction

From a hydrological and ichthyological perspective, the Kimberley region of Western Australia lies within the Timor Sea Drainage Division; one of the 11 major geographical drainages within Australia (Fig. 1). The Timor Sea Drainage Division is over 500,000 km² in size, extending from the Fitzroy River catchment in the southwest Kimberley across to the north-western portion of the Northern Territory. It has the second highest average annual discharge of all the major Australian drainage divisions (Allen *et al.* 2002). The Timor Sea Drainage Division is further characterised by a comparatively diverse fish fauna by Australian standards, with approximately 100 species recorded (~50% of Australia's freshwater fish fauna) and hosts a number of endemic species (approximately 25%) and three endemic genera, including *Hannia*, *Syncomistes* and *Kimberleyeleotris* (Unmack 2001, Allen *et al.* 2002).

With regard to the Kimberley region, which lies within the western extent of the Timor Sea Drainage Division (Fig. 1), the proportion of endemic freshwater fishes is thought to be considerably higher, with previous ichthyological surveys of its inland waters including those on the Gibb River Road to the Drysdale River (D. Rosen, G. Nelson & W. Butler in 1969 for the American Museum of Natural History); the Ord River area (R. McKay in 1971, Storey 2003; Gill *et al.* 2006); the Prince Regent River (Allen 1975); Drysdale, King George, Berkely and Carson Rivers within the Drysdale National Park (Hutchins 1977); Mitchell, King Edward and Lawley Rivers (Hutchins 1981); stream crossings on the Gibb River and Kulumburu Roads (Allen & Allen in 1998); Allen and Leggett (1990) sampled numerous sites on the Isdell, Mitchell, King Edward, Drysdale and Ord Rivers; the Fitzroy River (Morgan *et al.* 2002, 2004a); King Edward and Carson Rivers (Morgan *et al.* 2006, Morgan in press); and, a number of sites across the Kimberley were surveyed for euryhaline elasmobranchs (Thorburn *et al.* 2003) (Table 1).

Collectively, the previously mentioned studies and that by Unmack (2001) demonstrate that the region's fauna is highly endemic, and that many species are highly localised or have poorly known distribution patterns. Where possible, the records from these studies are collated here, in order to provide an overview of the distribution of freshwater fishes of the Kimberley, particularly at the catchment scale and in relation to major habitat types. This work also includes additional sites sampled during 2007 and the authors' previously unpublished data.