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RANGE EXTENSION FOR THE MULGRAVE RIVER GOBY  
(*GLOSSOGOBIUS* SP.) (PISCES: GOBIIDAE) IN NORTH QUEENSLAND

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Kroon, F.J. & Johnson, J.W. 2006 11 10: Range extension for the Mulgrave River Goby (*Glossogobius* sp.) (Pisces: Gobiidae) in North Queensland. *Memoirs of the Queensland Museum* 52(1): 147–150. Brisbane. ISSN 0079-8835.

New distributional records for the Mulgrave River Goby, *Glossogobius* sp. 4 (*sensu* Allen et al., 2002) are presented for Saltwater Creek, a coastal catchment in the northern Wet Tropics. The species has previously been recorded from the Russell/Mulgrave basin, and from Hills Creek and Falls Creek, two short streams flowing into the eastern side of Trinity Inlet. Our records increase the known range of this species northward by 70km. The distribution appears disjunct as there are no records of this species in rivers surveyed between Trinity Inlet and Saltwater Creek. **Its apparent very restricted distribution has led to conservation listing of this species as: 'Lower Risk – Near Threatened', 'Restricted', or 'Rare'. Our new records indicate a detailed survey of coastal drainages is needed to better understand the distribution and conservation needs of this species.** □ *Glossogobius*, range extension, Saltwater Creek, Wet Tropics.

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The North Queensland Wet Tropics World Heritage Area contains 78 (40%) of Australia's 190 freshwater fish species (Pusey & Kennard, 1996). The two most common families are the Melanotaeniidae (rainbowfishes) and Pseudomugilidae (blue-eyes), while Gobiidae (gobies) and Eleotridae (gudgeons) are the two most speciose families recorded in the area (Russell & Hales, 1993, 1997; Russell et al., 1996a, 1996b, 1998, 2000; Pusey & Kennard, 1994, 1996). The area contains at least eight endemic species (Pusey et al. 2004), including *Cairnsichthys rhombosomoides*, *Melanotaenia eachamensis*, *Melanotaenia ucheensis*, *Glossogobius* sp. 4 (*sensu* Allen et al., 2002; Mulgrave River goby), *Schismatogobius* species, *Stiphodon alleni*, *Hephaestus tulliensis*, and *Guyu wujalwujalensis*.

Effective management of this diverse and speciose freshwater fauna requires information of the biological requirements of fish species, including their distribution and abundance. Accurate distribution records are critical to inform scientists and managers about biodiversity in particular rivers and regions, to prevent loss of habitat and reduction of distributional range, and to implement appropriate conservation and rehabilitation actions.

Here, we present new distributional records of *Glossogobius* sp. 4 for Saltwater Creek, a coastal catchment in the northern Wet Tropics near the town of Mossman (Table 1; Fig. 1). *Glossogobius*

sp. 4 has previously been recorded from the Russell/Mulgrave basin (Merrick & Schmida, 1984; Allen, 1989; Wager, 1993), and from Hills Creek and Falls Creek, two short streams flowing into the eastern side of Trinity Inlet (Wager, 1993) (Fig. 1). Additional surveys have confirmed the presence of the species in the Mulgrave and Russell rivers (Pusey & Kennard, 1994, 1996; Pusey et al., 1995; Russell et al., 1996a). Johnson (2000) describes the distribution of *Glossogobius* sp. 4 as the 'Russell–Mulgrave R. drainage' (see also Pusey et al., 2004), 'and several creeks near Mossman, Qld'. The species remains undescribed and has been referred to as *Glossogobius* sp. B (Merrick & Schmida, 1984; Allen, 1989; Wager 1993; Pusey & Kennard, 1994, 1996; Pusey et al., 1995; Herbert & Peeters, 1995), *Glossogobius* sp. C (Wager & Jackson 1993), and *Glossogobius* sp. nov. (Australian Society for Fish Biology, 2004). In the Russell/Mulgrave basin, *Glossogobius* sp. 4 occurs in streams ranging from small tributaries to main channels, and is most abundant in shallow rapid, riffle and run habitats; the species has not been recorded at elevations >70 m.a.s.l. (Pusey et al., 2004).

*Glossogobius* sp. 4 was recorded in Saltwater Creek during surveys in 1995 and 2004 (Table 1; Fig. 1). In 1995, unidentified *Glossogobius* sp. were collected using backpack electrofishing at ten different locations of Saltwater Creek by the Queensland Department of Primary Industries (Russell et al., 1998). Twenty-three individual

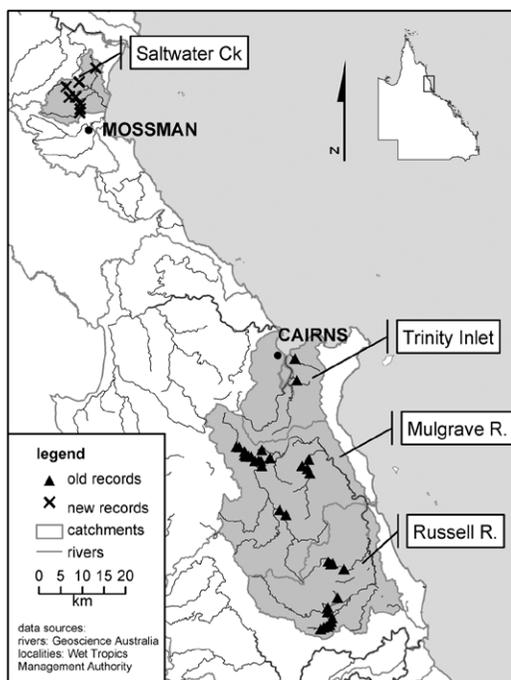


FIG. 1. Distribution map for *Glossogobius* sp. 4 in the northern Wet Tropics in Queensland, Australia, showing previously known records (▲) in the Russell/Mulgrave basin and Trinity Inlet, and new distributional records (×) in Saltwater Creek catchment. Inset map indicates study area location in Queensland.

*Glossogobius* sp. were lodged with the Queensland Museum and subsequently identified by the second author (J. Johnson) as *Glossogobius* sp. 4. During backpack electrofishing surveys in Saltwater Creek in 2004, 59 additional individuals of *Glossogobius* sp. 4 were collected at three different locations and identified to species level by the senior author (F. Kroon) and Andrew Palmer (CSIRO). Five individuals were lodged with the Queensland Museum for confirmation of species identification; all others were returned alive to the point of capture. Individuals were collected in small tributaries (1995) and the main channel (1995, 2004) in the freshwater section of Saltwater Creek in habitats similar to those described in Pusey et al. (2004); none of the collection sites were greater than 70m above sea level.

The present contribution represents the first time that *Glossogobius* sp. 4 has been formally reported from the Saltwater Creek catchment. These new records of *Glossogobius* sp. 4 near

Mossman are at least 70km north from the most northerly location of its previously recorded range (Hills Creek and Falls Creek; Wager, 1993).

The species has previously been overlooked in Saltwater Creek primarily because the 1995 (Russell et al., 1998) and 2004 surveys were the first to be conducted in the catchment. In contrast, despite several surveys and the species being easy to catch, *Glossogobius* sp. 4 has not been recorded in Wet Tropics rivers between Trinity Inlet and Saltwater Creek (Russell et al., 1993, 2000; Pusey & Kennard, 1994, 1996). To elucidate the relationship between the southern and northern populations and potential distribution patterns, a genetic study of the two populations would be of interest.

*Glossogobius* sp. 4 is currently listed as 'Lower Risk – Near Threatened' by the Australian Society for Fish Biology (2004), as 'Restricted' by Wager (1993), and as 'Rare' by Wager & Jackson (1993). While the species was originally listed due to its very restricted distribution, the new records extend its range and add approximately 10% in catchment area to its previously known area of distribution. The results presented here do not immediately call for a revision of this listing, but rather for a more detailed survey of coastal drainages to confirm the distribution, and thereby evaluate whether the listing is appropriate.

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#### LITERATURE CITED

- ALLEN, G.R. 1989. Freshwater fishes of Australia. (T.F.H. Publication: Neptune City, New Jersey).
- ALLEN, G.R., MIDGLEY, S.H. & ALLEN, M. 2002. Field guide to the freshwater fishes of Australia. (CSIRO Publishing: Collingwood).
- AUSTRALIAN SOCIETY FOR FISH BIOLOGY (2004). Conservation Status of Australian Fishes

TABLE 1. Queensland Museum records (QM) and 2004 survey captures (not retained) of *Glossogobius* sp. 4 from the Saltwater Creek catchment. All collections were made using (backpack) electrofishing. Main channel refers to the freshwater section of Saltwater Creek downstream from Pollock's crossing; n/a refers to fish that were collected, identified, and returned to the point of capture.

QM Reg. No.	No. individuals	Tributary	GPS		Collector	Collection date
			Latitude	Longitude		
QM I.30461	2	Little Falls Creek	16° 23' 34"S	145° 20'E	P. Hales	27/09/1995
QM I.30467	3	Pollock's Crossing	16° 25' 30"S	145° 21' 18"E	P. Hales	4/10/1995
QM I.30469	3	Bamboo Creek	16° 20'S	145° 23' 17"E	P. Hales	10/08/1995
QM I.30471	6	Whyanbeel Creek	16° 23' 34"S	145° 20' 49"E	P. Hales	27/09/1995
QM I.30473	4	Chinaman Creek	16° 21' 42"S	145° 21' 12"E	P. Hales	3/10/1995
QM I.30478	5	Boulder Creek	16° 22' 18"S	145° 19' 36"E	P. Hales	3/10/1995
n/a	16	Main channel 1	16° 25' 02"S	145° 21' 21"E	F. Kroon	8/03/2004
n/a	6	Main channel 1	16° 25' 02"S	145° 21' 21"E	A. Palmer	11/03/2004
QM I.35990	5	Main channel 1	16° 25' 02"S	145° 21' 21"E	F. Kroon	9/06/2004
n/a	19	Main channel 1	16° 25' 02"S	145° 21' 21"E	F. Kroon	9/06/2004
n/a	5	Main channel 1	16° 25' 02"S	145° 21' 21"E	A. Palmer	10/06/2004
n/a	1	Main channel 2	16° 24' 23"S	145° 21' 22"E	F. Kroon	9/12/2004
n/a	3	Main channel 3	16° 24' 25"S	145° 21' 22"E	F. Kroon	9/12/2004
n/a	4	Main channel 3	16° 24' 25"S	145° 21' 22"E	A. Palmer	13/12/2004

— 2004. Australian Society for Fish Biology Newsletter 34: 59–64.

- HERBERT, B. & PEETERS, J. 1995. Freshwater fishes of Far North Queensland. QI95018. (Queensland Department of Primary Industries: Brisbane).
- JOHNSON, J. 2000. Freshwater and upper estuarine fishes. Pp. 134–169. In Ryan, M. & Burwell, C. (eds) Wildlife of Tropical North Queensland. (Queensland Museum: Brisbane).
- MERRICK, J.R. & SCHMIDA, G.E. 1984. Australian freshwater fishes: biology and management. (Griffin Press Ltd.: Netley, South Australia)
- PUSEY, B.J., ARTHINGTON, A.H. & READ, M.G. 1995. Species richness and spatial variation in fish assemblage structure in two rivers of the Wet Tropics of northern Queensland, Australia. Environmental Biology of Fishes 42: 181–199.
- PUSEY, B.J. & KENNARD, M.J. 1994. The freshwater fish fauna of the Wet Tropics region of northern Australia. Report to the Wet Tropics Management Authority, Cairns. (Griffith University: Nathan).
1996. Species richness and geographical variation in assemblage structure of the freshwater fish fauna of the Wet Tropics region of northern Queensland. Marine and Freshwater Research 47: 563–73.
- PUSEY, B.J., KENNARD, M.J. & ARTHINGTON, A.H. 2004. Freshwater fishes of north-eastern Australia. (CSIRO Publishing: Collingwood).
- RUSSELL, D.J. & HALES, P.W. 1993. Stream habitat and fisheries resources of the Johnstone river catchment. QI93056. (Queensland Department of Primary Industries: Brisbane).
- RUSSELL, D.J., HALES, P.W. & HELMKE, S.A. 1996a. Stream habitat and fisheries resources in the Russell and Mulgrave rivers catchment. QI96008. (Queensland Department of Primary Industries: Brisbane).
- 1996b. Stream habitat and fisheries resources of the Moresby river. QI96061. (Queensland Department of Primary Industries: Brisbane).
- RUSSELL, D.J. & HALES, P.W. 1997. Fish resources and stream habitat of the Liverpool, Maria and Hull catchments. QI97039. (Queensland Department of Primary Industries: Brisbane).
- RUSSELL, D.J., MCDOUGALL, A.J. & KISTLE, S.E. 1998. Fish resources and stream habitat of the Daintree, Saltwater, Mossman and Mowbray catchments. QI98062. (Queensland Department of Primary Industries: Brisbane).

- RUSSELL, D.J., MCDOUGALL, A.J., RYAN, T.J., KISTLE, S.E., ALAND, G., COGLE, A.L. & LANGFORD, P.A. 2000. Natural resources of the Barron river catchment 1. Stream habitat, fisheries resources and biological indicators. QI00032. (Queensland Department of Primary Industries: Brisbane).
- WAGER, R. 1993. The distribution and conservation status of Queensland freshwater fishes. QI93001. (Queensland Department of Primary Industries: Brisbane).
- WAGER, R.N.E. & JACKSON, P.J. 1993. The action plan for Australian Freshwater Fishes. Report to the Australian Nature Conservation Agency,