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Threatened fishes of the world: *Milyeringa veritas* Whitley, 1945 (Eleotridae)

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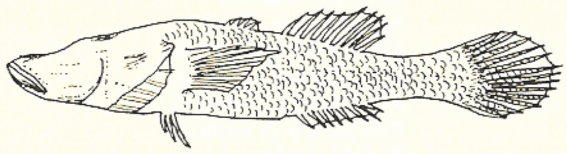

Common name: Blind cave gudgeon (E.) **Conservation status:** Threatened (Western Australian Wildlife Conservation Act); Data Deficient (World Conservation Monitoring Centre). **Identification:** This is the only species of troglobitic (obligatory cave, blind, depigmented) eleotrid in the world and one of the only two species of troglobitic vertebrates for Australia. It is on average 40.5 mm SL, and range between 30 and 42 mm. Body as wide as deep behind pectorals, but more compressed posteriorly. Head large, broad, and depressed, about 1/5 of the SL. Mouth large, horseshoe-shape. Lower jaw larger, chin protruding. Cardiform teeth in jaws, enlarged at sides of lower jaw. Tongue rounded, not notched. Anterior nostril tubular, over upper lip; posterior oval, larger. Rows of well developed sensory papillae on head and trunk. Sensory pores around the mouth, on top of the snout and in rows crossing cheek, descending behind preoperculum, and on sides of trunk. Gill openings wide, separated by the ithmus to which they are joined. Eyes not visible. Scales are reduced and entirely absent from the head; there are about 28 rows in a longitudinal line. Two dorsal fins, the first very reduced, with weak spines, the first two approximated. Anal small. Pectorals without free silk-like rays, though one or two upper rays are produced. Ventrals slender, separate. Caudal broadly rounded, with middle rays produced. Fin-rays simple, some articulated. D iv/9, A 9, P 13, V 4, C 17. Whitish coloration in the skin. **Distribution:** Western and northeastern coastal plain of the Cape Range peninsula and Barrow Island, Western Australia. **Abundance:** Found in 19 locations (now absent from 2) in numbers of up to more than 100 individuals. No population size estimates have been performed, but electrophoretic analysis has shown the presence of significant population substructuring. They show, like most other troglobitic fishes, low level of heterozygocity. There are no data available on population dynamics or sex ratios, but electrophorectic data suggests that there may not be random mating occurring within subpopulations. **Habitat and ecology:** In wells, sinkholes, caves, and bores and probably widely in the anchialine and fresh groundwater. Water supply: groundwater on seawater wedge. Inundation: permanent, tidal in places. Water depth: in wells 0–0.5 m, in caves to 32 m and showing tidal movements up to 3.5 km from the coast. Thin layer of freshwater in places overlaying brackish water. Water temperature (21–27.8°C). Water pH: 6.8–7.5; salinity: 0.2–34‰. Feeds on invertebrates and forms part of an unusually diverse troglobitic community with Tethyan affinities. **Threats:** Current major threats are nutrient enrichment, lowering of the water table, and urban and tourism development. Potential threats include limestone quarrying, as well as quicklime manufacture, petrochemical, heavy metal, nutrient pollution, and road construction and vegetation clearance. The site is also used for grazing by sheep and feral goats. There is a naval communications station, military and civil airfields, and an aerial bombing range in the general area. There are no data on survival and mortality rates. Ecological interactions with another cave fish species, *Ophisternon candidum*, unknown. **Conservation action:** Part of the distribution area is within the Cape Range National Park. The north part of the site has been proposed to be added to the National Park. **Conservation recommendations:** Limit human access to caves. There should be a control on the grazing practices in recharge area. Collecting for scientific/educational purposes should be highly restricted and aimed only to recovery/conservation programs. Collecting for other purposes should be totally banned until more information on population sizes is available. Additionally, there should be an aggressive research program that includes, but should not be limited to, research on the biology and distribution of the species as well as on the Cape Range karst wetlands ecosystem, local and regional hydrological patterns, field surveys of caves in the Cape Range karst wetlands, and continuous monitoring of data on water quality. **Remarks:** It is sympatric with *Ophisternon candidum* but seems much more abundant. *M. veritas* closest affinity is possibly with the eleotrid genus *Butis*, a mangrove dwelling genus of brackish and freshwaters on the Indo-Australian Archipelago.

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Appendix. (continued)

	Season						Total	% of total
	Dry			Wet				
	L	R	T	L	R	T		
Hypostomus (group) *plecostomus*	1						1	0.1
Hypostomus spp. (3 species)	1	28	4				33	4.0
Apistoloricaria spp. (2 species)			2			6	8	1.0
Loricaria cf. similima		2	1				3	0.4
Sturisoma robustum		1					1	0.1
Spatuloricaria evansii		2					2	0.2
Loricariichthys maculatus	10			13			23	2.8
Limatulichthys punctatus				1	6	23	30	3.6
Ancistrus spp. (2 species)					1	1	2	0.2
Panaque spp. (3 species)		1	5		2	1	9	1.1
Peckoltia bachi		3					3	0.4
Doradidae								
Trachydoras trachyparia		3				1	4	0.5
Nemadoras humeralis		3					3	0.4
Oxydoras niger		3					3	0.4
Pterodoras lentiginosus		1					1	0.1
Auchenipteridae								
Auchenipterus nuchalis	4	2	1				7	0.9
Centromochlus heckelli and *Centromochlus* sp.		7			2	2	11	1.3
Pimelodidae								
Luciopimelodus sp.			2				2	0.2
Callophysus macropterus		10	2				12	1.5
Cheirocerus eques		8				2	10	1.2
Cheirocerus goeldii				12	3	4	19	2.3
Pimelodella gracilis		1	1		2		4	0.5
Pimelodina flavipinnis		1					1	0.1
Pimelodus blochii		9					9	1.1
Pimelodus spp. (3 species)	11	54	1				66	8.0
Pinirampus pirinampu		14					14	1.7
Paulicea lutkeni		1					1	0.1
Brachyplatystoma juruense		1					1	0.1
Hemisorubim platyrhynchus	1	5	1				7	0.9
Sorubim lima	5	9	4	1		1	20	2.4
Platysilurus barbatus		2			1		3	0.4
Pseudoplatystoma fasciatum			1				1	0.1
Trichomycteridae								
Pseudostegophilus nemurus		1					1	0.1
Gymnotiformes								
Sternopygidae								
Eigenmannia macrops						1	1	0.1
Sternopygus macrurus				1			1	0.1
Perciformes								
Sciaenidae								
Pachyurus cf. schomburgkii		8					8	1
Pachyurus sp.						1	1	0.1
Plagioscion auratus		1					1	0.1
Plagioscion squamosissimus	2			1	1		4	0.5
Total	176	274	40	202	52	78	822	100