FRESHWATER FISH

Craterocephalus fluviatilis Murray Hardyhead

AUS	SA	AMLR	Endemism
V	-	E	-

Photo: © Michael Hammer

Conservation Significance

The AMLR distribution is peripheral to the majority of the distribution in adjacent regions, but is part of a nationally endangered population.[2]

Recommended for listing as Endangered under NPW Act as part of the threatened species status review in 2003.[1]

Description

Small silvery fish commonly reaching 3-5 cm. There has been a long history of confusion between different hardyheads in southern Australia due to taxonomic uncertainty (now resolved) and the generally similar appearance of different species. Most similar to the Lake Eyre Hardyhead which is endemic to SA (Lake Eyre Basin and Lake Torrens Catchment) but is distinguished by the non-overlapping geographic range, molecular markers and the characteristics of scale shape. Within the SAMDB it can be distinguished from Small-mouthed Hardyhead by its greater body depth and length of gill rakers (<than half diameter of pupil) and from Unspecked Hardyhead based on greater body depth, patterns of scales (irregular vs uniform) and general body colouration (e.g. black lips often apparent in Unspecked Hardyhead).[3]

Distribution and Population

Sampling over the last five years suggests the species distribution is severely fragmented with three core isolated populations: Disher Creek and Berri Salt Disposal Basins near Berri and Renmark, and the Lower Lakes, with the greatest abundances in channel habitat on the eastern end of Hindmarsh Island, and scattered records from sheltered edges of Lake Alexandrina and Lake Albert. Other infrequent records of small populations have been detected along the River Murray corridor including Lake Littra Inlet (near SA-NSW border), Scott Creek (a backwater near Morgan), and Riverglades and Rocky Gully wetlands (Murray Bridge). No longer appears to be found at many places it was recorded in the 1960-80s including an apparent disappearance from wetlands in the upper Finniss River arm of Lake Alexandrina, as well as other habitats along the River Murray between Mannum and Berri (e.g. Marne River Mouth, Kroehns Landing, Swan Reach and Lake Bonney). There are occasional records from the Coorong and the salt water side of the Barrages around Hindmarsh Island.[3]

Within the AMLR the species only occurs in the Lower Murray River Basin, within the Murray-Darling Drainage Division.[2]

Historic distribution not well documented, but probably occupied lowland wetland habitats throughout the SAMDB. Has had a long-term presence in the Lower Lakes (Lakes Alexandrina and Albert), with records dating back to the late 1800s, and was recorded from the Lower Lakes and River Murray corridor during the period 1960-1980s.[3]

Habitat

Primarily occurs in wetland and sheltered lake edge habitat, often in areas with high densities of submerged aquatic plants including Milfoil (*Myriophyllum* spp.), Foxtail (*Ceratophyllum*) and Eel Grass (*Ruppia* spp). These sites are often slightly to highly saline, suggesting a physiological and/or competitive advantage in these habitats.[3]

Biology and Ecology

Mobile, schooling species thought to be omnivorous (food resources are little known). Spawns in spring and summer, with larval abundance peaking in Victoria Lake populations during early November. Studies suggest it is primarily an annual species (i.e. most fish reach maturity, spawn and die within a year) and preliminary demographic data from Hindmarsh Island support this pattern. Successful recruitment is therefore essential for a population.

Some evidence of small-scale movement; fish have been observed to colonise freshly inundated habitat on Hindmarsh Island.[3]

Further information:
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Government of South Australia
Prepared as part of the Regional Recovery Plan for Threatened Species and Ecological Communities of Adelaide and the Mount Lofty Ranges, South Australia 2009 - 2014

Aboriginal Significance

Post-1983 records indicate the entire AMLR distribution occurs on the eastern boundary within Ngarrindjeri Nation.[2]

Threats

Reasons for population decline and continuing threats include:

- reduced water flows: reduced River Murray flows may cause water levels in the Lower Lakes to reach critical levels during summer with drying of habitat and greater exposure to predators
- changes to salinity levels: populations isolated in saline water disposal basins are potentially vulnerable to high and rapidly fluctuating salinities due to changes in the amount of intercepted saline water being disposed to these basins (e.g. rapid loss of a population from Elizabeth Lake in VIC)
- altered freshwater inflows: at other locations, structures have been installed to improve freshwater flow and may reduce water salinity (e.g. Riverglades, Scott Creek, Waltowa Swamp)
- major barriers or disruptions to dispersal and colonisation due to instream structures, such as locks and barrages
- current fragmentation of populations means there is a high chance of population losses and longer-term problems with gene exchange
- predation by and competition from introduced fish species (trout, Gambusia and possibly Redfin).[3]

Additional current direct threats have been identified and rated for this species. Refer to the main plan accompanying these profiles.

Regional Distribution

Map based on filtered post-1983 records.[2] Note, this map does not necessarily represent the actual species' distribution within the AMLR.

References

Note: In some cases original reference sources are not included in this list, however they can be obtained from the reference from which the information has been sourced (the reference cited in superscript).

1 Department for Environment and Heritage (2003). *Review of the Status of Threatened Species in South Australia. Proposed Schedules under the South Australian National Parks and Wildlife Act 1972 Discussion Paper*. National Parks and Wildlife Council in partnership with the Department for Environment and Heritage.

2 Department for Environment and Heritage (2007). *Adelaide and Mount Lofty Ranges Regional Recovery Pilot Project Database*. Unpublished data extracted and edited from BDBSA, SA Herbarium (July 2007) and other sources.

3 Hammer, M., Wedderburn, S. and Van Weenen, J. (2007). *Action Plan for South Australian Freshwater Fishes: 2007-2012 Draft*. Native Fish Australia (SA) Inc., Adelaide.

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