



**FLORA & FAUNA
GUARANTEE**

FLORA AND FAUNA GUARANTEE - SCIENTIFIC ADVISORY COMMITTEE
FINAL RECOMMENDATION ON A NOMINATION FOR LISTING

Lowland Riverine Fish Community of the southern Murray-Darling Basin

Date of receipt of the nomination: 20 February 1998
Date of preliminary recommendation: 18 June 1998
Date of final recommendation: 29 September 1998

File No.: FF/06/0037

Validity:

The nomination is for a valid item and the prescribed information was provided. The nominated community is accepted by the SAC as a valid community because it is adequately defined and described according to accepted practice, and it is described in such a way as to be distinguished from all other communities.

Eligibility for listing as a community under the Flora and Fauna Guarantee

The nominated item satisfies at least one criterion of the set of criteria prepared and maintained under Section 11 of the **Flora and Fauna Guarantee Act 1988**, and stated in Schedule 1 of the **Flora and Fauna Guarantee Regulations 1990**.

Evidence that criteria are satisfied:

Sub-criterion 2.1.1 *The community is in a demonstrable state of decline which is likely to result in a significant loss of its component taxa.*

Evidence:

The distribution of most of the native fish species identified in the nomination has declined markedly since records began. Eight of the fifteen species within the community have already been listed on schedule 2 of the Act. One species (Agassiz's Chanda Perch) has been lost completely while the Southern Purple-spotted Gudgeon exists only within an artificially created irrigation drainage basin. There is no question that the taxa identified in the fish community have declined across the range of the Southern Murray-Darling Basin.

Sub-criterion 2.1.3 *The community's composition has altered markedly in a short time and the alteration is continuing.*

Evidence:

The variety of native fish species identified in the nomination has changed dramatically in the basin. The community has changed considerably through the extinction of two member species and also through the presence of the exotic carp *Cyprinus carpio* which is now a dominant species both numerically and in terms of biomass.

Criteria 2.2 *The community is significantly prone to future threats which are likely to result in extinction.*

Evidence:

The community is subject to the impacts of water regulation through:

- alteration to natural flow regimes
- alteration to natural temperature regimes
- barriers to fish migration
- waterway management practices involving the removal of large woody debris.

Each of these threats has been listed on Schedule 3 of the **Flora and Fauna Guarantee Act 1988**. The community is also under threat from the continued presence of introduced fish, including European carp.

Criterion 2.2.2 *The threat is currently operating and is expected to operate at a level in the future which is likely to result in the extinction of the community.*

Evidence:

The use of water in northern Victoria for irrigation, and thus water regulation and water retention within large storages, is a permanent feature of water resource management. The impacts of water regulation, particularly in relation to the alteration of natural flows and temperatures are therefore ongoing. The effect of dams and weirs as barriers to migration is also an ongoing threat. Waterway management practices continue to include the removal of woody debris, or its relocation within the river channel. The ecological effects of previous de-snagging programs are permanent and natural re-snagging will only occur over millennia.

Additional Information

- The conservation classifications of the fish species included in this nomination are as follows:

Scientific name	Common name	NRE (1998) classification
<i>Ambassis agassizii</i>	Agassiz's Chanda Perch	Extinct
<i>Bidyanus bidyanus</i>	Silver Perch	Critically endangered
<i>Craterocephalus fluviatilis</i>	Murray Hardyhead	Endangered
<i>Craterocephalus stercusmuscarum fulvus</i>	Non-specked Hardyhead	(not listed)
<i>Galaxias rostratus</i>	Flat-headed Galaxias	Data deficient
<i>Hypseleotris klunzingeri</i>	Western Carp Gudgeon	(not listed)
<i>Maccullochella macquariensis</i>	Trout Cod	Critically endangered
<i>Maccullochella peelii peelii</i>	Murray Cod	Endangered
<i>Macquaria ambigua</i>	Golden Perch	Vulnerable
<i>Macquaria australasica</i>	Macquarie Perch	Endangered
<i>Melanotaenia fluviatilis</i>	Murray Rainbow Fish	(not listed)
<i>Mogurnda adspersa</i>	Southern Purple-spotted Gudgeon	Critically endangered
<i>Nematalosa erebi</i>	Bony Bream	(not listed)
<i>Philypnodon grandiceps</i>	Flat-headed Gudgeon	(not listed)
<i>Tandanus tandanus</i>	Freshwater Catfish	Vulnerable

Advertisement for public comment

In accordance with the requirements of Section 14 of the **Flora and Fauna Guarantee Act 1988**, the preliminary recommendation was advertised for a period of at least 30 days.

The preliminary recommendation was advertised in:

"The Age" - on 12 August 1998

"The Weekly Times" - on 12 August 1998

The Government Gazette - on 13 August 1998

Submissions closed on 18 September 1998.

Documentation

The published information and research data provided to the SAC have been assessed. To the best of their knowledge, the SAC believes that the data presented are not the subject of scientific dispute and the inferences drawn are reasonable and well supported.

Final Recommendation of the Scientific Advisory Committee

The Scientific Advisory Committee concludes that on the evidence available the nominated item is eligible for listing in accordance with Section 11(1) of the Act because primary criteria 2.2 and sub-criteria 2.1.1, 2.1.3 and 2.2.2 have been satisfied. The SAC also concludes that primary criteria 2.1 is satisfied as a consequence of these sub-criteria being satisfied.

The Scientific Advisory Committee recommends that the nominated item be supported for listing on Schedule 2 of the **Flora and Fauna Guarantee Act 1988**.

Selected references:

Cadwallader, P. L. & Backhouse, G. N. (1983) *A guide to the freshwater fish of Victoria*. VGPO, Melbourne.

Fauth, J. E., Bernado, J., Camara, M., Resetarits Jr. W. J., Van Buskirk, J. & McCollum, S. A. (1996) Simplifying the jargon of community ecology: A conceptual approach. *Am. Naturalist* 147: 282-86.

Harris, J. H. & Gehrke, P. C.[eds](1997) *Fish and Rivers in Stress - The NSW Rivers Survey*. NSW Fisheries Office of Conservation and the CRC for Freshwater Ecology in association with NSW Resource Assessment Council.

IUCN (1988) *1988 IUCN Red List of Threatened Animals*. International Union for the Conservation of Nature, Geneva.

Jackson, P. (1997) Conservation status of Australian Fishes - 1996 Supplement. *Australian Society for fish Biology Newsletter* 27 (1) June 1997: 8-15.

Koehn, J. D. (1996) Habitats and movements of freshwater fish in the Murray Darling Basin. Pp 27-32 in: Banens, R. J. and Lehane, R. (eds) *Riverine Environment Research Forum*. Proceedings of the inaugural Murray-Darling Basin Commission Riverine Environment Research Forum held in Attwood, Victoria, October 1995. MDBC, Canberra.

NRE (1998) *Threatened Vertebrate Fauna in Victoria - 1998*. Department of Natural Resources and Environment, Melbourne. [unpublished NRE report].

Walker, K. F. (1986) The Murray-Darling river system. pp: 631-59 in: Davies, B. R. and Walker, K. F. (eds) *The Ecology of River systems*. Dr. W. Junk, Dordrecht.

Selected web sites:

- The Action Plan for Freshwater Fishes:

http://www.anca.gov.au/plants/threaten/plans/action_plans/freshwater_fishes/index.htm

Endorsement by the Convenor of the Scientific Advisory Committee

Date



Dr. David Macmillan
Convenor

9. 10. 98