



# Species Summaries

## River Blackfish

## 23 Analysis and Summary of Historical Information on Native Fish

During the course of this project a large amount of historical information was collected on the native fish of the Murray-Darling Basin. Most of this has been reviewed on a catchment by catchment basis in the previous sections. The primary aim of the project was to collect historical information and identify the original distribution and habitat preferences of Trout cod and, secondarily, the other large native fish species within the southern half of the Basin. This section provides an analysis and summary of all the information collected.

The summary is presented on an individual species basis and for each the information is discussed under the following headings:

1. **European Discovery:** A description of the earliest European encounters with each species;
2. **Aboriginal Names:** A collation of names reported for each species in the writings of early Europeans attributed to aboriginal people. The list is certain to be very limited in scope as until comparatively recently few publications documented aboriginal language;
3. **European Names:** Briefly outlined is a history of the changes and synonyms of the scientific names used for each species, followed by the common names in general use from the past up to the present. In an earlier section a lengthy review was presented, covering the history of the taxonomic argument over Trout cod that continued for nearly 150 years. While previously discussed, a brief summary of the key changes in the scientific name of the Trout cod along with the basic reasons for these changes, has been provided;
4. **Distribution and Habitat:** All of the collected information on distribution and habitat associations is evaluated to highlight general trends and provide an overall description for each species. To aid in the analysis, the rarity scores assigned to each habitat zone, as defined previously in the summaries for each catchment, were averaged on a state and basin wide basis (in the area investigated in this project). Records originating from the Australian Capital Territory were included in determining the scores for NSW. Where the author assigned an upper or lower value to a rarity score the value was increased or decreased by 0.5 to improve the accuracy of the analysis; e.g., a L3 = 2.5 while a U3 = 3.5. As the focus of the project was to resolve the debate over the original distribution and habitat associations of Trout cod, there is a discussion on the differing views on the species former distribution and a consideration of the strength of the historical data which leads to a conclusion on this issue. For the other species there is a brief discussion, comparing the historical records reported in Lintermans (2007) to those recorded in this project to reach an overall conclusion on the range and habitat associations of each species;
5. **Translocations:** Historical accounts of translocations, that took place prior to the commencement of the stocking of hatchery produced fish in the 1970s, are summarised which may aid those undertaking research into the genetics of fish populations and help explain the presence of species in some waters;
6. **Size:** For each species information is provided on the maximum recorded size or weight which is known to be of interest to anglers;
7. In the case of Trout cod historical accounts relating to general aspects of its biology are presented. For the other species miscellaneous accounts or information identified in the historical material which to date have not been widely known are presented;
8. **Community Value:** A brief summary of the historical value of each species to the community including their popularity as angling and table fish and importance in commercial fisheries;
9. **Current Status:** The current conservation status of each species is stated, along with a brief summary of the major changes to distribution and abundance based on the historical evidence collected and recent angler reports;
10. A map using the information collected during this project presents the likely former historical distribution and abundance in the southern Murray-Darling Basin of each species.



**Table 23.1**      **Definitions of Rarity Scores used in the Project**

<b>Abundance</b>	<b>Rarity Score</b>	<b>Criteria</b>
Absent	0	No credible account reporting the species former presence
Rare	1	A few individual fish could be expected to be taken by a resident angler each year
Common	3	Regularly taken by a resident angler in small numbers: a typical expected catch would be less than 5 fish per day. The species may have been patchily distributed preferring specific reaches or habitats
Abundant	5	Frequently taken by a resident angler in good numbers: a typical catch would exceed 5 fish per day. Generally found along the length of the main channel though may have exhibited some local variations in abundance.

BLACKFISH NOTES.

Without challenging scientific conclusions on the point, my impression agrees with that of "Loddon," who concludes that the small blackfish got in Victorian streams north of the Divide is distinct from the larger southern blackfish. The size alone would lead one to suspect that conclusion. With fish of the same species, size is mainly a matter of food supply, and when one notes the size and numbers of both native and introduced fish which thrive in the northern streams that are tributaries of the Murray it is difficult to believe that scarcity of food has dwarfed the northern blackfish, which at its best only weighs a few ounces, and is a Tom Thumb as compared with some of the giants of the southern rivers. Mr. Tom Fisher, after months of investigation, believes that there is more than one species in Gippsland, though others think that marked differences in appearance only indicate particular stages of growth in the same variety. My recollection of the northern blackfish is that it is always slim, and never at the same weight anything like so strong or deep in the body as the southern variety.

*Argus*, 29 May 1925

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### 23.7.1 European Discovery

The earliest European account of Blackfish is the description of the species by Richardson (1848) based on the skin of a dried specimen collected during the expedition of the *Erebus* and *Terror* collected from 'southern parts of Australia'. In the Murray-Darling Basin the earliest account is that of Blandowski (1858) who reported their presence in billabongs near Merbein in 1857.

#### Photograph 23.10 The First Blackfish

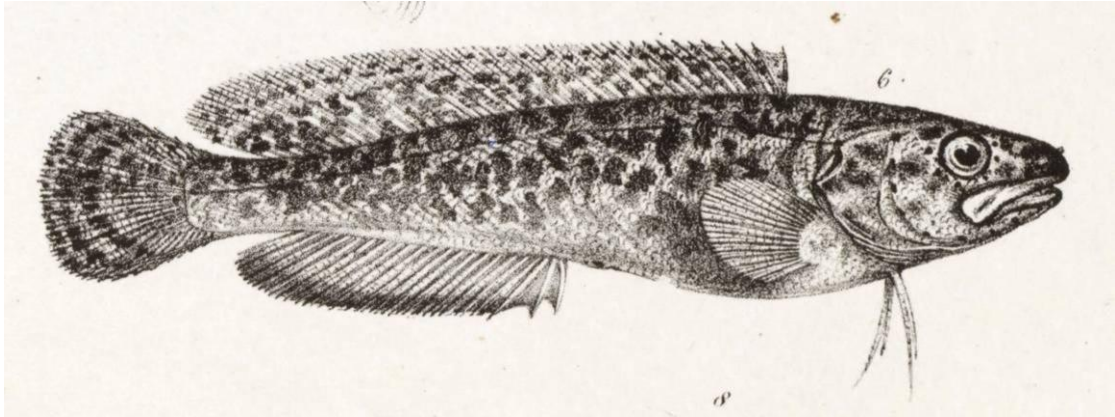


Illustration of a Blackfish, *Gadopsis marmoratus*, in the first taxonomic description of the species. From Plate 59, *Ichthyology of the voyage of H. M. S. Erebus and Terror, under the command of Captain Sir James Ross*. Image reproduced from the collection of the *National Library of Australia*.

### 23.7.2 Aboriginal Names

Blandowski (1858) recorded 'Paltk' as the name for Blackfish of the Yarree Yarree near Merbein. In the McKenzie's Falls area in the Grampians 'Mekunang' was used by local aboriginal people (Djadjawurrung) for Blackfish (Wesson, 2001), while the Ngunawal people of the Canberra area referred to Blackfish as 'wuggar' (Mathews, 1904). In 1847 Victorian surveyor W. S. Urquhart noted in his field book that 'werrup' was used by the Bunnerong people of Gippsland as the word for the Blackfish and he elected to name the large swampland east of Cranbourne as 'kowe-werrup' (= 'water-blackfish') indicating the presence of plentiful Blackfish (Wesson, 2001). Today the town of Koo-Wee-Rup honours the former presence of Blackfish in the local swamps most of which have been drained and turned into farmland.

### 23.7.3 European Names

Richardson (1848) named the species *Gadopsis marmoratus* though it is unknown whether the specimen originated from the Australian mainland or Tasmania (Ogilby, 1913). Early accounts highlighted differences in size between the various populations, as well as variations in form and colour. A number of naturalists concluded that there was more than one Blackfish species. Blandowski (1858) named the species *Brosmius bleasdalii*. McCoy (1879) proposed the existence of two additional species *Gadopsis gracilis* and *G. gibbosus* from the Yarra and Bunyip catchments respectively, though later workers did not recognise any of them (Ogilby, 1913). In the late twentieth it was demonstrated that there were two distinct species in the Murray-Darling Basin, the second being the Two-spined blackfish *Gadopsis bispinosus* which appears to be largely restricted to upland habitats as far north as the ACT (Sanger, 1984). Recent research has suggested that

*Gadopsis marmoratus* should be separated into two separate species, one present in southern Victoria and Tasmania and the other in the Murray-Darling Basin, with populations in the Murray-Darling Basin showing a fair degree of genetic diversity (Miller *et al.*, 2004).

Common names used in the past for Blackfish included fresh-water blackfish, tailor or tailer, marbled river cod, slippery, gudgeon, Nikkie long cod and Nikkie (Ogilby, 1913). Lintermans (2007) listed slimy, muddy and greasy as additional names for the species. Modern publications use the term 'Freshwater blackfish' to distinguish them from a common estuarine and marine species known as 'blackfish'. During the author's youth a commonly used name for Blackfish in north east Victoria was 'grayling', and also used by one newspaper correspondent (*Argus*, 7 November 1911). This causes considerable confusion with a coastal species sharing that name, the Australian grayling *Prototroctes mareana*. In the upper Lachlan catchment a number of anglers referred to Blackfish as 'blueguts'.

#### 23.7.4 Distribution and Habitat

Blackfish are naturally found outside of the Murray-Darling Basin in catchments along the southern coast of the mainland, from the Onkaparinga and Torrens catchments eastwards to the Snowy River, and also in northern Tasmania (Ogilby, 1913). It appears that a population of Blackfish may have existed in the headwaters of at least one east coast stream in NSW with 'slipperies' being reported in the Jenolan River upstream of the Jenolan Caves (Maher, OH 5).

Within the Murray-Darling Basin Lintermans (2007) recorded River blackfish as being historically widespread throughout northern Victoria, restricted to the middle and upper reaches of most NSW catchments, but absent from the Darling River and some of its northern tributaries. He identified Two-spined blackfish as having been found from the Murrumbidgee Catchment south to the Goulburn Catchment, and as being restricted to upland and montane habitats (Lintermans, 2007).

During this project 210 locations were identified as the source of probable or certain historical accounts of captures of Blackfish and the collected evidence on the species abundance was used to develop rarity scores. It was impossible to distinguish between historical accounts of River blackfish and Two-spined blackfish, most records simply describing the fish as 'Blackfish' or one of the many common names employed for these fish. It is assumed that many accounts of Blackfish within the known range of Two-spined blackfish probably relate to that species though in some areas the two species can be found together. The following table provides averages for the rarity scores created in each habitat zone in each catchment for Blackfish using historical evidence in this investigation:

**Table 23.8 Blackfish Average Rarity Scores**

Area	Zones			
	Lowland	Slopes	Upland	Montane
NSW & ACT	2.2	4.7	4.5	4.1
VIC	4.0	4.6	4.7	2.0
SA	1.5			
Basin	2.6	4.6	4.6	3.4

The average rarity scores suggest that in NSW Blackfish had a modest presence in lowland habitats (2.2) but were abundant in the slopes (4.7) and upland (4.5) zones and moderately abundant in the montane zone (4.1). The records for Blackfish in the montane zone in NSW are somewhat limited, but those that exist in the Macquarie, Lachlan and Upper Murray Catchments suggest that they were locally moderately abundant in the lower reaches of this zone, particularly in the larger creeks. The lowland score has been influenced by the fact that Blackfish were recorded as being rare, or at best moderately common, in the main channel of some lowland rivers, but were very common in adjacent lagoon habitats. The species had a stronger association with the lowlands than what the score suggests. Many historical accounts record an association of Blackfish with lagoons in the lowlands, Tenison-Woods (1882) describing the species as a 'mud fish' found in the lowlands. Ogilby (1913) provided a significant record in reporting them to have been common in lagoons at Walgett, well west of the records provided by Lintermans (2007). The historical evidence indicates that in NSW Blackfish were abundant in all non-lowland habitats and, while common in some lowland rivers, were more prevalent in lagoons in this habitat zone.

In Victoria the average rarity scores suggest that Blackfish were very common to abundant in lowland (4.0), slopes (4.6) and upland zones (4.7) and had a modest presence in the montane zone (2.0). The figure for the montane zone has been influenced to some degree by limited records in some areas. In some catchments such as the Mitta Mitta there is good evidence of them having been common in the lower reaches of the montane zone. Unlike the other larger native species, Blackfish were sometimes present upstream of significant waterfall barriers. As in NSW, historical accounts record a strong presence in lagoons in the lowlands and, in addition, they were common in lowland creeks. It can be concluded that Blackfish were very common in most habitats in Victoria with the exception of the upper reaches of the montane zone. The average rarity score of 1.5 for South Australia reflects the limited records of Blackfish in the Basin in that state. Some accounts suggest that Blackfish may have been common in lagoons along the lower Murray (Blandowski, 1858; *Argus*, 2 February 1922, 7 July 1925) and in the lower lakes (Zeitz, 1902).

In conclusion Blackfish appear to have been present in a diverse range of habitats from the montane zone down to Lake Alexandrina. Ogilby (1913) reported their past abundance in slopes, upland and montane habitats into alpine conditions, and in some of these areas they were prolific. A trend appears that in the western lowlands Blackfish were generally far more common in lagoons and lakes than rivers. The collective results for the Basin suggest that Blackfish, on average, were abundant in the slopes (4.6) and upland zones (4.6), were common in the montane zone (3.4) and reasonably common in the lowland zone (2.6). Of the larger fish species, in the Basin Blackfish generally were reported to be found at higher altitudes than the others, and in some small creeks, were the largest species present. The current altitude record for Blackfish is in the montane zone in the upper Cotter River at about 1000 m ASL (Lintermans, 1998) though it is likely that they were found at even higher locations in some catchments, particularly the upper Murrumbidgee.

### **23.7.5 Translocations**

On several occasions anglers have advocated introducing coastal Blackfish into the Murray-Darling Basin and it appears that this may have taken place in the upper Loddon River near Glenlyon (*Argus*, 26 September 1930). Blackfish were on one occasion translocated from the Murray-Darling Basin near Heathcote to Hanging Rock Reservoir, in the coastal Maribyrnong catchment (*Argus*, 1 February 1924). It was reported that Blackfish had been translocated to the Snowy River with specimens sourced from the Craigie River in Victoria in 1883 (Ogilby, 1913). The Craigie River is part of the Snowy Catchment, so the species was clearly native to the catchment.



### 23.7.6 Size

In coastal Victoria and Tasmania Blackfish have been reported to grow to a substantial size. Ogilby (1913) quoted a letter received from Tasmania reporting fish as heavy as 12 lb. (5.5 kg) being taken and 7 lb. (3.2 kg) plentiful stating 'I may mention three rods taking 24 dozen in a night, and another three rods taking 63, weighing from 1½ to 6 lb. apiece'. In the Murray-Darling Basin huge specimens have never been reported. Ogilby (1913) stated that anything over 12 inches (30 cm) was considered a large fish with specimens up to 18 inches (45 cm) being captured in the Macquarie catchment. Tenison-Woods (1882) reported a specimen measuring 16½ inches (41 cm) in length.

Blackfish in the Murray-Darling Basin have, on occasion, been reported to grow to a reasonable weight. Fish stocked into a farm dam at St. Arnaud reached 1½ lb. (0.7 kg) (*Argus*, 27 February 1932) while fish up to 1 lb. 11 oz. (0.9 kg) were taken from a creek near Stewarts Bridge, on the lower Goulburn River (*Argus*, 17 September 1929). Even allowing for some angler exaggeration it appears that under some circumstances long lived individuals can reach over a pound (0.5 kg) in weight. Historical accounts have suggested that Blackfish avoid direct sunlight and are most active at night or when the water is discoloured during floods. Albino Blackfish have been captured with one recorded from the upper Hughes Creek near Ruffy in 1938 (*Argus*, 18 June 1938), possibly another in Tasmania (*Hobart Mercury*, 5 October 1881).

### 23.7.7 Community Value

Blackfish are the smallest of the native fish regularly taken by anglers in the southern half of the Murray-Darling Basin. The southern form of River blackfish, which grew to in excess of 5 kg, was a popular target of anglers in southern Victoria and northern Tasmania and was considered to have superb table qualities. C. J. Dennis wrote a poem indicating his admiration for the species namely 'The Blackfish' published in the Melbourne *Herald* in 1937. Donald Macdonald in his book *Gum Boughs and Wattle Bloom* (MacDonald, 1887) devoted a whole chapter to the pleasure he gained from catching Blackfish.

In the Murray-Darling Basin, Blackfish were often overshadowed as an angling target by the larger species, though many oral accounts indicate that in the early days 'greasies' were popular as bait for cod in some areas. Many anglers welcomed them when nothing else was biting due to their excellent table qualities. In the smaller creeks Blackfish were often the main target of anglers and they were popular with children. Comments penned by Strathbogie angler Collin Halsall reflect the admiration that many anglers held for Blackfish in the Murray-Darling Basin:

I feel I would be remiss if I did not pay a special tribute to the humble Blackfish which has been caught up to 14 inches long and three quarters of a pound in weight. Black fish in local streams average about 5 or 6 inches. They are called "Greasies" by many anglers but are recognised as an excellent sweet pan fish even though small. Many a budding angler started his lifetime sport with a bamboo rod fishing for "Blackies" (Halsall, 1979).

### 23.7.8 Decline & Current Status

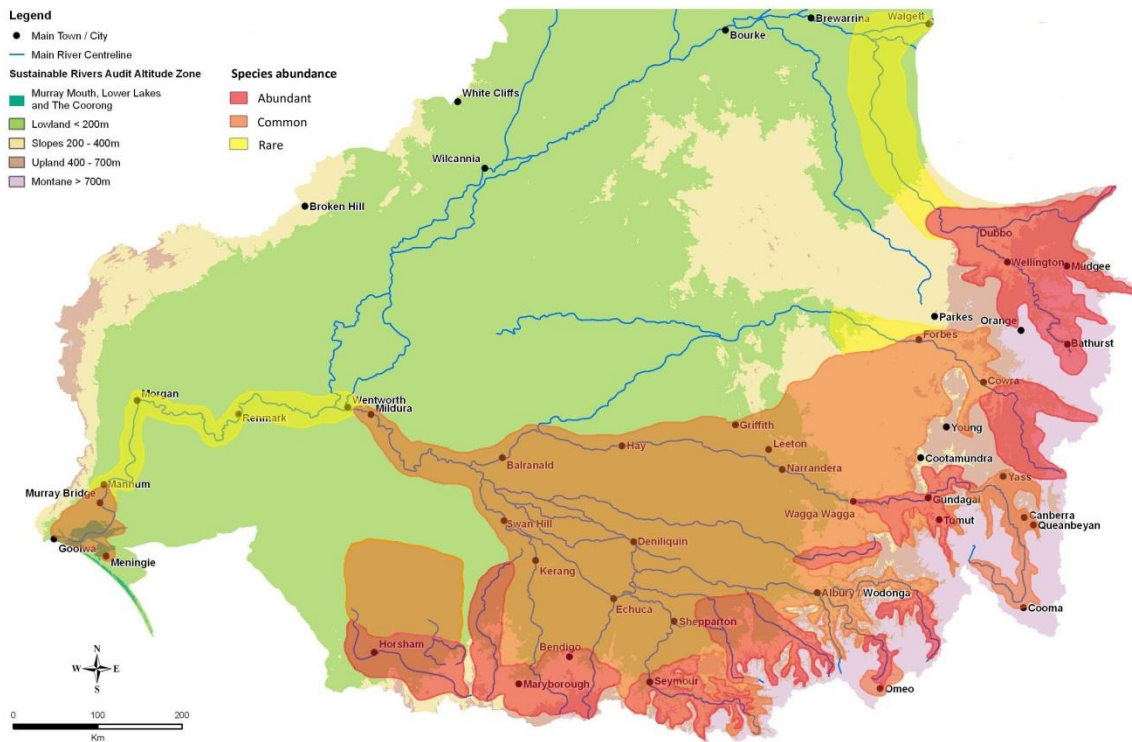
Blackfish are now rare in some catchments such as the Macquarie, Lachlan, Riverina and Central Murray, and in South Australia. Today Blackfish are most commonly associated with higher altitude habitats, but the historical evidence indicates that they were formerly very common in lagoon habitats in the lowlands from the Murrumbidgee Catchment south. They have disappeared from many areas, though persist in others, notably in some catchments in north east Victoria where they are common. Historical accounts indicate that during the

first half of the twentieth century they virtually disappeared from many upland areas. In recent decades they have made somewhat of a recovery in this habitat in Victoria. Blackfish have almost totally vanished from lowland habitats. From the limited available historical evidence it appears that lowland populations underwent a general decline from 1900-40 and can be considered to be critically endangered in this zone. Populations persist in South Australia in four tributaries of the Mount Lofty Ranges namely the Marne, Bremer and Angas Rivers and the Tookayerta Creek. A program to produce juvenile Blackfish in captivity in South Australia resulted in success in 2009 and a captive breeding program is also underway at the Narrandera Fisheries Centre in NSW (Westergaard & Ye, 2010).

In NSW, River blackfish and Two-spined blackfish are totally protected under the *Fisheries Management Act 1994*. Two-spined blackfish in the ACT is classified as vulnerable under the *Nature Conservation Act 1980* and is protected from angler take. In South Australia River blackfish are considered endangered and cannot be taken by anglers, where they are protected by regulations under the *Fisheries Act 2007*. In Victoria Two-spined blackfish are listed under the *Flora and Fauna Guarantee Act 1988*, but the species can be taken by anglers as can River blackfish.

Figure 23.7

A Reconstruction of the Historical Distribution & Abundance of Blackfish Species in the Southern Murray-Darling Basin



**Table 23.9 ASFB Conservation Status of Murray-Darling Basin Fishes**

The following table presents the most recent (2011) assessment of the conservation status of Murray-Darling Basin Fishes by the Threatened Fishes Committee of the Australian Society for Fish Biology courtesy of the Convenor, Mark Lintermans ([Mark.Lintermans@canberra.edu.au](mailto:Mark.Lintermans@canberra.edu.au)). It utilises IUCN conservation categories and criteria.

<b>Category</b>	<b>Scientific Name</b>	<b>Common Name</b>
CRITICALLY ENDANGERED	<i>Craterocephalus fluviatilis</i>	Murray hardyhead
	<i>Galaxias fuscus</i>	Barred galaxias
	<i>Maccullochella macquariensis</i>	Trout cod
ENDANGERED	<i>Macquaria australasica</i>	Macquarie perch
VULNERABLE	<i>Craterocephalus amniculus</i>	Darling River hardyhead
	<i>Edelia obscura</i>	Yarra pygmy perch
	<i>Galaxias rostratus</i>	Flat-headed galaxias
	<i>Maccullochella peelii</i>	Murray cod
LOWER RISK – LEAST CONCERN	<i>Mogurnda adspersa</i>	Southern purple-spotted gudgeon