

[10.1071/PC21048](https://doi.org/10.1071/PC21048)

*Pacific Conservation Biology*

### Supplementary Material

#### **Alien fish ascendancy and native fish extinction: ecological history and observations on the Lower Goodradigbee River, Australia**

*Simon Kaminskas*<sup>A,\*</sup>

<sup>A</sup>Murray–Darling Basin Authority, Canberra, ACT 2601, Australia.

\*Correspondence to: Simon Kaminskas Murray–Darling Basin Authority, Canberra, ACT 2601, Australia  
Email: [simon.kaminskas@mdba.gov.au](mailto:simon.kaminskas@mdba.gov.au)

**Supplementary Material****Historical Accounts of Alien Trout Impacts on Native Fish Species in South-Eastern Australia**

Historical common names for native fish species are interpreted as per standard historical usage in each locality—to the extent that it can be elucidated—and ecological and habitat considerations (i.e. probability of a certain native fish species occurring in a certain habitat type). Variations in common names did exist between localities. Common names within localities were reasonably if not completely consistent. The terms “perch” and “bream” are troublesome and can refer to either Macquarie perch (*Macquaria australasica*) or silver perch (*Bidyanus bidyanus*) interchangeably. When both “perch and bream” are cited in higher altitude habitats (i.e. montane and upland zones; upper reaches of slopes zones) it can confidently be concluded that both silver perch and Macquarie perch were being referred to, regardless of which specific designation they were receiving; golden perch (*Macquaria ambigua*) rarely occurred above the slopes zone. Historical records often failed to distinguish between Murray cod (*Maccullochella peelii*) and trout cod (*Maccullochella macquariensis*), or river blackfish (*Gadopsis marmoratus*) and two-spined blackfish (*Gadopsis bispinosus*). Thus many references to “cod” or “blackfish” potentially encapsulate both species. However at very high altitudes in montane and upland streams, these references are likely to be predominately or solely trout cod and two-spined blackfish respectively. Several accounts attempting to dismiss alien trout impacts are included, e.g. SMH 1908a, SMH 1908b, Sydney Mail 1908, Sydney Mail 1912—the fact that reports of severe alien trout impacts on native fish were so widespread these trout-biased authors felt compelled to try and dismiss them is indeed the point. Also noteworthy is that the first of these references felt it necessary to provide a description of the differences in appearance between Macquarie perch and alien trout species—reflecting that Macquarie perch distribution largely overlapped with that of alien trout species at this time, and were a very common by-catch while pursuing the newly introduced alien trout species.

Reference	Location	Native Species Impacted	Key Statements/Observations
Sydney Mail 1899	Snowy River, Victoria	“perch” – Australian bass ( <i>Macquaria novemaculeata</i> )	NOTES BY “PLOMB” The perch of the Snowy River district are being ousted by the imported trout, which have got a firm lease of the river, and have served every other fish in the streams with a personal notice to quit, accompanied by a writ of <i>cap. ad sat.</i> [at saturation capacity].
Referee 1902	Upper Murrumbidgee River – headwaters – NSW	“perch” – Macquarie perch ( <i>Macquaria australasica</i> );	FISHING NOTES BY “GLAUCUS.” At a recent meeting of the Amateur Fishermen's Association the head of a trout, which had weighed about five pounds, was exhibited. It was a specimen of the rainbow trout, and was sent from some place on the Murrumbidgee by Alderman W. T. Tate, who has been spending a few days on the river. It was also reported that the trout were plentiful in the head waters of the river, where they were regarded as being very destructive to the perch.
SMH 1905	Upper Macquarie River system, NSW	“bream” – Macquarie perch ( <i>Macquaria australasica</i> ); “cod” – trout cod ( <i>Maccullochella macquariensis</i> ) and possibly Murray cod ( <i>Maccullochella peelii</i> ); “carp” – wild form goldfish ( <i>Carassius auratus</i> )?	A WESTERN TOURIST CENTRE—TARANA, OBERON AND JENOLAN—THE DUCKMALOI TROUT ... "Trout," says one old angler, “will eat anything but the log fences hereabout. They have cleared out the bream, the cod, and the carp, but we will not mind that If they stay themselves.”
Benalla Standard 1906	Devil's [Delatite] River, Victoria	“cod” – trout cod ( <i>Maccullochella macquariensis</i> ), Murray cod ( <i>Maccullochella peelii</i> ); “bream” – Macquarie perch ( <i>Macquaria australasica</i> ); “blackfish” – northern river blackfish ( <i>Gadopsis marmoratus</i> )	BENALLA TO MERRIJIG. TROUT FISHING Some years ago cod, bream and blackfish were plentiful in these parts, but since the advent of the trout they have disappeared, and this process is expected to be extended as the trout gradually work their way down the stream.
SMH 1907	Canberra–Monaro region	“perch” – Macquarie perch ( <i>Macquaria australasica</i> )	ANGLING In some parts of Monaro local people regard the trout with anything but favour. They know that the introduced fish have driven the indigenous edible fish away, and they regret the circumstance, especially a regards the capital edible perch.
Sunday Times 1907	NSW	“cod” – trout cod ( <i>Maccullochella macquariensis</i> ) and Murray cod ( <i>Maccullochella peelii</i> ); bream” – Macquarie perch ( <i>Macquaria australasica</i> )	ANGLING AND ACCLIMATISATION One great objection to the rainbow [trout] is that he is as voracious as the pike, and eats everything else out of the streams, so that where he has established himself such fine native fish as the cod and bream (much superior for eating), are almost extinct.
Evening News 1908a	South-east Australia	“codfish” – trout cod	THE PHANTOM FOX AND OTHER WILD ANIMALS. A SKETCH OF PRESENT-

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		( <i>Maccullochella macquariensis</i> ) and possibly Murray cod ( <i>Maccullochella peelii</i> ); “perch” – Macquarie perch ( <i>Macquaria australasica</i> )	DAY AUSTRALIA In those days all the country around Regan's River was a wild district indeed. ... Lyrebirds called and strutted about in every patch of undergrowth ... the opossums, native bears, and kangaroo rats were thick all through the timbered country. The rainbow trout had not yet been introduced, and the river was full of Codfish and a species of perch—fishes that were, later on, to be hunted out by the voracious and active trout.
SMH 1908a	Burrinjuck Reservoir and Murrumbidgee downstream? NSW	“cod” – primarily Murray cod ( <i>Maccullochella peelii</i> )	ANGLING In the Lower Murrumbidgee country sportsmen are blaming the trout for the slackness in the supply of cod, but inquiry shows that the trout are receiving blame which should not come their way. Over-fishing, set line, and nets have been robbing the river of its cod for many years and there has been no restocking of these grand fish.
SMH 1908b	Upper Murrumbidgee River and surrounding region, NSW	“cod” – trout cod ( <i>Maccullochella macquariensis</i> ) and Murray cod ( <i>Maccullochella peelii</i> ); “bream” – Macquarie perch ( <i>Macquaria australasica</i> ); “perch” – silver perch ( <i>Bidyanus bidyanus</i> )	ANGLING It is thought in some parts of the country that trout have driven the Indigenous fish out of the parts they frequent, but this belief is not held by [the trout angler] Mr P. Heyland and other observers on the Snowy and Upper Murrumbidgee. In these waters perch, bream and mountain [alien] trout have been taken lately.
Sydney Mail 1908	South-east Australia	“perch” – Macquarie perch ( <i>Macquaria australasica</i> )	OPENING OF THE TROUT SEASON. GROWTH OF A GREAT SPORT Trout have not, as some thought a little while back, driven perch from their haunts. .... Everybody who goes fishing by this time knows how to distinguish a trout from a perch. The trout is something of the shape of a stout waiting or sand mullet, while the perch is broader bodied, like a bream.
Sydney Mail 1912	Upper Murrumbidgee River, NSW	Multiple native fish species; not specified	WITH ROD AND REEL. TROUT FISHING IN N.S. WALES The rainbow [trout] has been accused of 'bossing' the streams and driving native fish away from their feeding grounds. This is not proved ...
Age 1916	Victoria	“cod” – trout cod ( <i>Maccullochella macquariensis</i> ) and Murray cod ( <i>Maccullochella peelii</i> ); “bream” – Macquarie perch ( <i>Macquaria australasica</i> ); “perch” – silver perch ( <i>Bidyanus bidyanus</i> ) “blackfish” – river blackfish ( <i>Gadopsis marmoratus</i> ) and two-spined blackfish ( <i>Gadopsis bispinosus</i> )	A PLEA FOR OUR NATIVE FISH The decision of the Fisheries department to establish a trout hatchery at the head of the Morwell River ... for the purpose of easily stocking contiguous streams and acclimatising the fry, leads one to enter an urgent plea for the preservation of our native fish, and to ask in wonder why the Fisheries department year after year pursues its apparent obsession for the propagation of [alien] trout in preference. Anyone who knows anything about the streams of Victoria is perfectly aware that native fish, such as the cod, bream, perch, and blackfish are fast dying out, and if some action is not taken to preserve the species they will soon be relegated to oblivion. All these fish are very much superior to trout, the cod especially being regarded by all anglers as the finest table fish to be procured. Rivers which once abounded with these fish and provided fine sport for anglers are now unfortunately almost denuded. The Fisheries department have for many years been pouring thousands of trout fry into the mountain streams, but local anglers deplore

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			the fact that the trout can never take the place of the native inhabitants of those waters, and the pastime of Isaak Walton is now a lost art.
Argus 1916	Victoria	“grayling” – Australian grayling ( <i>Prototroctes maraena</i> ); “spotted mountain trout” – spotted galaxias ( <i>Galaxias truttaceus</i> )	OPINIONS DIFFER Mr F Stewart writing from Lorne, agrees with Mr E Stribling in the view that the introduction of English [brown] trout into so many streams is a mistake. Mr Stewart notes that since the trout were put into the Otway streams many years ago the grayling have steadily diminished, until it may be said that they have quite disappeared, while the spotted mountain trout is also being decimated. He mentions in proof of their voracity that at the aquarium no other fish can be kept in the same tanks with trout.
Daylesford Advocate 1916a	Euroa, Victoria	“blackfish” – river blackfish ( <i>Gadopsis marmoratus</i> )	ANGLING Mr E. Stribling, Euroa, writes as follows to the "Argus" concerning the destruction of blackfish by trout:—"The opinions recently expressed about the English trout destroying the native fish seem to cause us to doubt the wisdom of introducing this fish, and whether it may eventually turn out a pest like the rabbit. In this district (Euroa), before the trout were placed in the streams, they were full of blackfish, and a good catch of very sizeable ones was rapidly obtained. Since the trout were liberated the blackfish have almost disappeared, except for very small ones, which seem to be able to get where the trout don't follow. As a table fish there is no comparison between the delicately flavoured blackfish and the somewhat insipid trout. In view of the diversity of opinion as to the usefulness of this fish, would it not be well to discontinue the distribution of them until it is determined whether they are a pest or gain."
Daylesford Advocate 1916b	North-east Victoria	“blackfish” – river blackfish ( <i>Gadopsis marmoratus</i> )	A PLEA FOR THE BLACKFISH Mr A. W. Laver (Cheltenham) writes in the "Argus":—"I feel that unless steps are taken soon to prevent all our streams from being stocked with trout, one of our native fish, the blackfish, will be exterminated very shortly. This would be a mistake for various reasons. ... Blackfishing is a sociable sport, while troutfishing is most unsociable. I have come to the conclusion that trout anglers are, as a body, rather selfish. I agree that some of the streams should be stocked with trout, but surely it is not asking too much that a few suitable waters be reserved for our native and delicious fish?"
Weekly Times 1916	Victoria	“cod” – trout cod ( <i>Maccullochella macquariensis</i> ) and Murray cod ( <i>Maccullochella peelii</i> ); “bream” – Macquarie perch ( <i>Macquaria australasica</i> ); “perch” – silver perch ( <i>Bidyanus bidyanus</i> ) “blackfish” – river blackfish ( <i>Gadopsis marmoratus</i> ) and two-spined blackfish	FISHING G. Hopkins, writing in respect to the decision of the Fisheries Department to establish a trout hatchery at the head of the Morwell River with the object of supplying all the streams rising in the vicinity with yearlings, puts forward another plea for the preservation of native fish. He wonders why the Fisheries Department year after year pursues its apparent obsession for the propagation of trout in preference to native fish, such as cod, bream, perch and black fish. These are fast dying out, and if some action is not taken to preserve their species they will soon be things of the past. All these fish are superior to trout, the cod especially being one of our finest table foods. Rivers that once abounded with these fish and provided fine sport for anglers are now unfortunately almost denuded, thanks to the Fisheries Department, which for years past has been

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		( <i>Gadopsis bispinosus</i> )	pouring thousands of trout fry into the mountain streams. Mr Hopkins, continuing, states that trout can never take the place of the native inhabitants of the Gippsland waters. Trout fishing is not popular, nor are the fish likely to become so plentiful as imagined. It seems almost incomprehensible that nothing has been done to propagate native fish. Surely it is about time the local authorities protested against the action of the Fisheries Department.
Australasian 1925	Victoria	“cod” – trout cod ( <i>Maccullochella macquariensis</i> ) and possibly Murray cod ( <i>Maccullochella peelii</i> ); “perch” – Macquarie perch ( <i>Macquaria australasica</i> )	THE NATURALIST—BUSH NOTES—KHANCOBAN TROUT The topic is quite out of season, but the following notes from E.J.R. (Moonee Ponds) are very interesting:—“Victoria has stocked the Nariel Creek and the Ghongla for many years, and I am fairly sure the fish have worked up from these streams. Speaking to old residents of the district, they told me of the great numbers of perch and cod they caught in this stream only 10 or 12 years ago, and it is about that time they first noticed fish [trout] rising there, and how the [native] perch and cod have died out. Now it is rare to hook one of those fish.
Herald 1927	Victoria	“blackfish” – river blackfish ( <i>Gadopsis marmoratus</i> )	CANNIBALISTIC TROUT ... both as a fisherman and an epicure I wish to protest against the wholesale stocking of Victorian streams with imported fish. This applies particularly to the small mountain streams, where, because of snags and the dense growth on the banks, fly-fishing is impossible. Formerly the native blackfish were plentiful in these streams, and any amateur fisherman could secure a succulent breakfast after an hour's fishing. Since the introduction of trout, they have eaten out all the blackfish. These days a man may or may not catch one trout in hours of patient angling, and, when he lands it, it is hardly worth the eating.
Argus 1928	King River, Victoria	“Murray cod” – Murray cod ( <i>Maccullochella peelii</i> ) and trout cod ( <i>Maccullochella macquariensis</i> ); “perch” – Macquarie perch ( <i>Macquaria australasica</i> )	COUNTRY NEWS—WANGARATTA That trout are gradually getting down stream is evidenced by the fact that a 4lb. trout was grassed from the King River at Oxley. Anglers contend that trout will gradually kill out the Murray cod and perch.
SMH 1928a	Southern Murray-Darling Basin	“cod” – trout cod ( <i>Maccullochella macquariensis</i> ) and Murray cod ( <i>Maccullochella peelii</i> ); “perch” – Macquarie perch ( <i>Macquaria australasica</i> )	SAVE OUR NATIVE FISH ... That our splendid fresh-water native fish are fast disappearing there can be no doubt, in spite of the smug complacency of some of our legislators, who for many years have shown an utter disregard for the preservation of the Murray cod and perch, two of the best edible fish in Australia. Victoria does make some effort to save these fish for future generations, but unless there is complete co-operation between the two principal States, nothing of an effective nature can be accomplished. Too much fuss is made of the professional fisherman, who nets almost the whole year round, while the "sporting fishermen" are catered for by having our inland streams stocked with trout, which destroy our native fish, and are of no use to the people who are most entitled to consideration. For the past ten years it has become increasingly difficult to secure decent

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			catches of cod or perch in any of the tributaries of the Murray, and the time has arrived when something definite should be done to preserve our native fish. The stocking of the Murray or its tributaries with trout should be prohibited ...
SMH 1928b	North-east Victoria	“cod” – trout cod ( <i>Maccullochella macquariensis</i> ) and Murray cod ( <i>Maccullochella peelii</i> ); “perch” – Macquarie perch ( <i>Macquaria australasica</i> )	SAVE OUR NATIVE FISH ... The president of the New South Wales Rod Fishers' Society can have but little knowledge of Australian conditions when he states that "trout have been acclimatised only in waters of high altitude." His assertion that "below about 1,500 feet few, or but very few, [trout] live" is ridiculous. More than 30 years ago I was induced to join other misguided enthusiasts in stocking a number of Victorian streams—all connecting with the Murray either directly or indirectly—with trout, most of which were liberated at levels varying from 650 feet to 1100 feet. And they thrived amazingly, to the utter disgust of lovers of native fish. I have resided in New South Wales for nearly 20 years, but during each summer spend some weeks in North-eastern Victoria, most of the time being spent in beating the various streams with rod and line. In the ports I visit the streams are clear, there are very few sheep, no professional fishermen, the country is heavily timbered, and mostly well grassed; but carp [sic] and perch, formerly very plentiful, are scarce indeed. During the past three years I have caught many trout, the best hauls being in streams less than 700 feet above sea level; while not in one instance did the altitude exceed 1200 feet. Mr. Joseland admits that cod and perch are more valuable as food fish than trout, this plea for the trout being that it is more "sporting" and "requires more expensive tackle, conveyance, accommodation," etc. Just so. The trout, an inferior fish, is a costly luxury, while the cod and perch, pure Australian, are easily caught with inexpensive tackle and natural bait; and if safeguarded will always afford a fine food supply for the many thousands who cannot roam the country at will. As an Australian native, I want to see what is best in my own country preserved for future generations ...
Argus 1929	North-east Victoria	“slimey” – river blackfish ( <i>Gadopsis marmoratus</i> ) and two-spined blackfish ( <i>Gadopsis bispinosus</i> )	NATURE NOTES AND QUERIES—THE REAL SLIMEY Recent notes on the slimey or little northern blackfish have caught many interested eyes. Among others, Mr. D. W. Wilson, Skipton State school, knew the slimey as I did—an insignificant fish. He says:—"As a boy I caught hundreds of small blackfish in the Little Snowy Creek, a tributary of the Mitta Mitta. These fish were plentiful, and provided wonderful sport, but I am sure I never saw or caught one over 4oz. They were shapely little fellows, very lively, and second to none as a table fish. Unfortunately, they have practically disappeared from this beautiful stream, which is now well stocked with trout."
Burrowa News 1932	Burrinjuck Dam, NSW	“cod” – Murray cod ( <i>Maccullochella peelii</i> ), possibly trout cod ( <i>Maccullochella macquariensis</i> );	TROUT IN THE DAM—HUGE HAULS—ARE THEY CLEANING OUT OTHER FISH? It has been the considered opinion, of enthusiastic fishermen for a long time that rainbow trout are wiping out other fish, such as cod and bream, from the waters of Burrinjuck (says Yass "Tribune"). The main contention for this opinion is that the reports of former

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		“bream” – Macquarie perch ( <i>Macquaria australasica</i> )	hauls by amateur parties seems to be becoming merely history. The old hands will tell one of Saturday and Sunday nights spent on the river when they could not pull the cod out quickly enough. One rarely hears of such successful fishing parties in these times. ... The trout are now being blamed for the diminution in fish, and there seems overwhelming evidence that this is so. It has been learned from a reliable source that a certain fisherman took up to 100lbs. of trout out of Burrinjuck, per nets, on nights not so long ago. ... Trout up to 13lb. have been netted. The fishermen netting these trout are not altogether to blame, because they simply can't help netting them. They are after cod and bream but can net practically nothing but trout. The trout are almost dead from exhaustion when the nets are lifted so it is useless throwing them back. These trout when opened up are full of young fish—cod and bream—up to three inches in length. Is that the reason why stories of big hauls of cod seem only distant dreams? ...
Tumut Times 1932	Murrumbidgee River, NSW	“cod” – Murray cod ( <i>Maccullochella peelii</i> ) and trout cod ( <i>Maccullochella macquariensis</i> )	ADELONG Local anglers are wondering what is wrong with the Murrumbidgee this season, as the cod refuse to bite. Just an odd one seems to fall to the lure of the white grub or worms, and even the little ones, which usually are bait-robbing all day, are conspicuous by their absence. Some attribute it to the late cold weather, and snow water still coming down, but it is time now that most of the cold water had run off. There is one theory that may be correct—and that is that the river is getting a lot of big trout in it, even this far down, and it is a well-known fact that cod and trout do not agree in a stream, and the trout hunt the cod away. Last season several trout were caught about these parts in the Murrumbidgee, and as they seldom take on the heavier cod tackle, they must be getting plentiful.
Tumut Times 1933	Burrinjuck Dam, NSW	“cod” – Murray cod ( <i>Maccullochella peelii</i> ) and possibly trout cod ( <i>Maccullochella macquariensis</i> ),	TROUT OUSTING COD—COWRA FISHERMAN'S VIEW Recently a Cowra fisherman assured the 'Guardian' that trout were ousting cod and other tasty fish from Burrinjuck Dam, and as trout are not very nice to eat, unless small and eaten soon after capture, the value of Burrinjuck to fishermen who wanted their catches as food was diminishing. Mr Brewster confirmed the story that rainbow trout were now in the ascendancy in Burrinjuck Dam, growing up to 15lb. in weight owing to the abundance of food in the dam.
Yass Tribune-Courier 1934	Burrinjuck Dam, NSW	“cod” – Murray cod ( <i>Maccullochella peelii</i> ) and possibly trout cod ( <i>Maccullochella macquariensis</i> ); “carp” – wild form goldfish ( <i>Carassius auratus</i> )?	TROUT AND COD—A RODFISHERMAN'S VIEWS—FOOD FISH IN WESTERN RIVER SYSTEM It would be unthinkable that any Government should legislate for the replacement of our indigenous fishes by exotic trout, merely because the former, with one or two exceptions, find no attraction in the artificial fly. ... Assuming that the artificial stocking of our waters were to cease, trout are still likely to gradually spread from the upper tributaries of the great Murray system, where they are already established to the lower waters, until ultimately they may dominate the greater part of the system. There is nothing impossible in this forecast. ... It is worth considering whether it would not be better to exclude the western river system entirely from the scope of the Bill, and even to abstain as far as

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			<p>possible from stocking them further with trout, leaving the indigenous and exotic fish to conduct their struggle for existence, without artificial interference for the present. It may even later be found advisable to reverse past practice and supplement the indigenous fish by breeding and re-stocking. ... When at Burrinjuck, I was informed by reliable witnesses, that, in certain portions of the lake, over 90 percent of the fish caught in the nets, on one occasion, were trout. These latter were found to be gorged with small cod, many, about three inches long, being vomited by the trout after capture. ... Finally there is the carp ... when the trout have finished eating up the young cod, they will turn their attention to him.</p>
Age 1935a	Southern Victoria	<p>“blackfish, slimey” – river blackfish (<i>Gadopsis marmoratus</i>) (northern and southern forms);                      “mountain trout” – common galaxias (<i>Galaxias maculatus</i>)</p>	<p><b>VANISHING NATIVE FISH</b>                      There was a time, within the memory of a good many anglers, when large blackfish could always be associated with the calls of mountain birds, the scent of musk, and the hundred other pleasant sights and sounds streams in Gippsland and the Otways. The birds are there yet, and the musk and dogwood still grow in tangled confusion down the hillsides, but the blackfish of those other days, it seems, has gone, and in its place a lean trout lies head up against the stream. Fostered by zealous anglers, the introduced trout has spread far and wide in all our watercourses, to a degree probably beyond the dreams of those who in the first place set such a high value on the sport. It is in their aggressive progress from main rivers up into their headwaters among the mountains that the native fish have suffered worst. There, where the hungry trout monopolises the food supply, most of the blackfish one lifts out are half-starved apologies for that other fish, which is now only as solid as the memory or a fisherman's imagination can make it. One might even confuse some of them with the dwarf blackfish or slimey found in rivers north of the Divide, though it is often of a yellowish hue. Not only the blackfish, but the little mountain trout, which made up for what it lacked in appeal to both palate and prowess with the picturesque touch of life it added to pools in clear, running streams, has almost vanished, hunted unceasingly by the voracious trout.</p>
Age 1935b	Victoria	<p>“Murray cod” – Murray cod (<i>Maccullochella peelii</i>) and trout cod (<i>Maccullochella macquariensis</i>);                      “Murray perch” – golden perch (<i>Macquaria ambigua</i>)</p>	<p><b>NATURE NOTES</b>                      There are several points of view to be considered in dealing with the question of our vanishing native fish and the increasing introduced varieties. It is a strange thing that the most important one of these—the revealing value of pounds, shillings and pence—should be overlooked so frequently by those who follow the sport. According to a leading fish dealer the Murray cod is worth from ninepence to a shilling a pound, the Murray perch about fivepence or sixpence; and in the season, a brown or rainbow trout, he said, would bring perhaps threepence or fourpence a pound. So it is obvious that the trout is not a commercial success. Then there is the consideration of sentiment for the sport which, it seems, is partly responsible for present unhappy position of the native fresh-water fish. Whether the sacrifice is going to be worthwhile is a matter of individual opinion, but there is no denying the fact that, for the table, our native fishes are far superior to all their introduced rivals. If any investigation is to be made, the native fish</p>

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			<p>are those which deserve all the attention, for the trout are so widely and definitely established that they should now be able to look after themselves just as well as the carp and redfin, without the assistance of anyone to read their scales. There is no objection to trout in artificial water systems, but when the existence of Murray cod, perch and the other natives is threatened by introduced aliens, then they and the carp and redfin are a definite menace in our rivers.</p>
Sydney Mail 1935	South-east Australia	<p>“blackfish” – river blackfish (<i>Gadopsis marmoratus</i>);                      “native trout” – common galaxias (<i>Galaxias maculatus</i>)</p>	<p><b>SOME QUEER FRESHWATER FISH</b>                      The quaint little blackfish (<i>Gadopsis marmoratus</i>) lives in creeks in the hilly country ... It is a sad fact that the introduced trout and perch have exterminated the blackfish in most streams to-day. ... Throughout southern Australia in the creeks with open, clear pools can be found the pretty, graceful little native trout (<i>Galaxias attenuatus</i>) ... These fish are also being thinned out by the voracious introduced trout.</p>
Argus 1936	Victoria	<p>“Murray cod, cod” – Murray cod (<i>Maccullochella peelii</i>) and possibly trout cod (<i>Maccullochella macquariensis</i>);                      “bream” – Macquarie perch (<i>Macquaria australasica</i>);                      “golden perch” – golden perch (<i>Macquaria ambigua</i>)</p>	<p><b>HOW TO PRESERVE MURRAY COD</b>                      It will be interesting to learn how experts from three States who are to discuss ways and means of preserving Murray cod are going to do the impossible. The chief inspector of the Fisheries and Game Department (Mr. Lewis) says that trout have not been introduced into any waters that are suitable for Murray cod. I think that he is mistaken. The Waranga Basin is cod water, and trout were put in there more than 30 years ago. It boasted the best fresh-water fishing for cod, bream, and golden perch, but now you can fish there with rod and line and you will be lucky if you get a cod in a week. Redfins are there in thousands, also a lot of trout. Mr. Lewis says that trout have been introduced into the mountainous North-East streams. I know to my sorrow that Whitfield used to be good fishing for cod, bream, and golden perch, anywhere from the junction of the Murray and Ovens rivers, also from the junction of the Ovens and King rivers, but now it is the dry old redfins and trout. The only way to keep our cod there is to destroy the redfins and trout. I heard of a trout being caught with nine small cod, about 1 inch in length, in it. It is only in the last few years that trout have been caught at Wangaratta. Redfins are caught in thousands here in the lagoons and in the King River, the Ovens River, and Yellow Creek. I have caught more than 30 redfins a day. Destroy the trout and the redfins and we will have cod, bream, and golden perch; but how will we do it, seeing that trout do not stop where they are put? No close season will stop the redfins from eating the spawn or the trout from eating cod. There is no doubt that the money that has been spent in breeding trout has done more harm than good. Why should thousands of pounds be spent on fish that are not marketable? Cod fetches up to 2/ per lb.; redfins 4d. Drum-nets, gill-nets, night lines, and spinners have never done the harm that redfins and trout have done.</p>
Mudgee Guardian 1936	Macquarie River, NSW	<p>“cod” – trout cod (<i>Maccullochella macquariensis</i>) and Murray cod (<i>Maccullochella peelii</i>)</p>	<p><b>TROUT OR COD? RATHER WILLING ARGUMENT—WIDELY DIFFERENT VIEWS</b>                      ... There were fish in the Macquarie River long before the trout was introduced. Since then, it is claimed, the trout have practically cleaned up the cod, a much more edible fish.</p>

Reference	Location	Native Species Impacted	Key Statements/Observations
			In these circumstances the cod fishermen contend that the liberation of trout in the Macquarie River should be prohibited, and further, the Macquarie River should be exempt from the provisions of the new Act in order that the trout can be exterminated. ... it is generally recognised that the Macquarie cod is amongst the sweetest and best eating fish in the universe. In these circumstances there is a lot in the argument that the cod should be protected against the ravages of a fish, which is mainly caught only for the sport, and which is known to be the greatest cannibal [i.e. predator of other fish] in our rivers. What the cod fishermen should do is to form an association of their own and make representations to the Minister to have the Macquarie River reserved for native fish, and protected from the ravages of the cannibal trout. If this were done, then it would not be long before the anglers could secure the old time cod catch, which, since the introduction of the trout, has been impossible. ...
Herald 1937	Victoria	“blackfish” – river blackfish ( <i>Gadopsis marmoratus</i> )	BLACKFISH BY “DEN” Protest is being made about the disappearance of blackfish and other native fish from forest streams as a result of the introduction of foreign trout which, in these environments, supply neither sport nor succulent dish.
The Land 1937	South-east Australia	“cod” – Murray cod ( <i>Maccullochella peelii</i> ) “perch” – golden perch ( <i>Macquaria ambigua</i> ) “bream” – silver perch ( <i>Bidyanus bidyanus</i> )	AN UNWELCOME ARRIVAL An unwelcome arrival in our western rivers is the trout, which has spread from the mountain streams to which it was introduced many years ago, and has now worked its way well down the bigger rivers which these streams feed. Trout have been caught as far down the Murray as Echuca, and professional fishermen have lately been finding them in their nets as far down the Murrumbidgee as Narrandera. When a trout finds itself imprisoned in a drum net it usually struggles until it kills itself, and a fish that has died in the water is unsaleable. In any case it is not easy to sell this dry-fleshed fish to people who have been used to the succulent cod, perch and bream of our inland rivers. The chief objection, however, to the presence of the trout in these rivers is that it is a voracious eater of young cod, and some authorities believe that it will in time exterminate the Murray cod, just as the giant freshwater gar has exterminated the catfish in some of the prairie rivers of America.
SMH 1937a	Snowy River system, south-east NSW	“slipperies” – multiple species of the mountain galaxias species complex ( <i>Galaxias</i> spp.); climbing galaxias ( <i>Galaxias brevipinnis</i> )	Thirty odd years ago the writer regularly fished the upper waters of the Snowy River from Waste Point to the Gungarlin [River], and from careful observation it was found that the trout were travelling upstream at the rate of about three miles every year. Evidence of this was the fact that when the angler reached a point in the river where the “slipperies”, commonly called “mountain trout” (an indigenous fish), were fearlessly seen feeding in the heads of the “rapids”, it was useless going further upstream in quest of trout. Year by year the “slipperies” were eaten out by trout, with the result that today the angler will not find these Indigenous fish where the trout are ...
SMH 1937b	Upper Murrumbidgee River system, south-east NSW	“Murray cod” – cod” – trout cod ( <i>Maccullochella macquariensis</i> ) and Murray	VANISHING COD. PROBLEM OF THE RIVERS ... Take, for example, the English trout, which some say have cleared out our Murray cod from the upper Murrumbidgee. ...

Reference	Location	Native Species Impacted	Key Statements/Observations
		cod ( <i>Maccullochella peelii</i> )	
Newcastle Sun 1938	Burrinjuck Dam and Yass region, NSW	“Murray cod” – Murray cod ( <i>Maccullochella peelii</i> ) and possibly trout cod ( <i>Maccullochella macquariensis</i> )	<b>TROUT CONTROVERSY</b> The Yass Council has decided to invite the cooperation of other councils in urging the prohibition of the wholesale liberation of trout fry in all streams in the State, and urging that such liberation be confined to swiftly-running streams. Aldermen contended that fishing in the Yass district was being confined to rod fishermen, who were described as a select class, and that poorer people were being deprived of fish. Moving the motion, Ald. T. P. Leonard said that rod fishermen were liberating trout fry in streams in the Yass district. These fry were providing sport for the select few who could afford to purchase expensive tackle and pay for a licence. 'To-day,' he added, 'it is impossible to get a small cod in the Murrumbidgee or the Burrinjuck Dam, because the trout, being faster fish, destroy the young cod and the cod's spawn. Hundreds of tourists have ceased coming to Burrinjuck because of the depletion of fish by trout.'
Sydney Mail 1938	Burrinjuck Dam, NSW	“Murray cod” – Murray cod ( <i>Maccullochella peelii</i> ) and possibly trout cod ( <i>Maccullochella macquariensis</i> )	<b>WHY OUR RIVERS ARE FISHLESS</b> There are professional fishermen in these waters [of Burrinjuck Dam] who use nets, besides hundreds of yards of cross lines, each line carrying many hundreds of hooks. These men hate the trout with a bitter hatred, as they claim that they destroy the young cod — the most payable market fish of any they catch. Therefore, when they do catch a trout it is pitched as far up the bank as they can throw it. This fact is borne out by finding large dead trout well away from water levels.
Tumut Times 1938	Burrinjuck Dam, Upper Murrumbidgee River, Goodradigbee/Little River, Yass River, NSW	“cod” – Murray cod ( <i>Maccullochella peelii</i> ) and trout cod ( <i>Maccullochella macquariensis</i> ); “perch” – Macquarie perch ( <i>Macquaria australasica</i> ); “bream” – silver perch ( <i>Bidyanus bidyanus</i> )	<b>YASS COUNCIL CONDEMNS WHOLESALE LIBERATION OF TROUT FRY— ALLEGED DESTRUCTION OF COD, BREAM AND PERCH IN BURRINJUCK</b> Unanimously the Yass Municipal Council decided, after a lengthy debate, to circularise all Councils and Shires inviting their co-operation in urging on their State members to prohibit liberation of trout fry in all streams in N.S.W. and that such liberation be confined to swift-running streams only ... Ald. Davis would agree with him when they were young people they could go to the Murrumbidgee at any time and get a good supply of cod. To-day it was almost impossible to get a small cod in the Murrumbidgee. Trout being a faster fish in the water, they destroyed the spawn. ... In his younger days they could get tons of fish. He was on the river the previous day and he saw big trout well up the head of the Murrumbidgee. It was live with them. They got them on the Horseshoe Bend. Everybody was complaining there were no small cod to be got to-day. ... <b>DRIVEN OUT BY TROUT</b> ... The Lachlan to-day was a renowned stream for fish for the simple reason that there were no trout in it. The moment trout were liberated it meant the end of the cod. The Cotter and the head of the Murrumbidgee were alive with fish when he was a boy. On a hot day one could see hundreds of perch and bream in the Little River, but to-day he would defy anyone to find them there. The trout had driven them out or destroyed them. ... Ald. Davis said he was residing at Waterview for six years just up to the time of the introduction of trout fry. He could remember at that time one could catch any amount of cod in an hour or two. He went to the Murrumbidgee once with the

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			<p>Rev. Woodhouse. They had 30 lines, but by the time they got ten lines out the fish started to bite and they got between 70 and 80lbs. of fish in two hours. That was near Burrinjuck. He had gone there since the introduction of trout fry and one could not get a bite. In his opinion trout had brought about the reduction of cod. ... Something should be done to preserve the cod and other fish. Otherwise the day would come when the streams in this district would be extinct of fish except trout. The Deputy Mayor supported the motion. Cod were plentiful in the Yass River 10 or 15 years ago, and the same thing applied to the Murrumbidgee. ... He thought lack of cod fishing was due to the inroads of trout. ... People never caught a cod off the river bank now and a half pound cod was unheard of. He did a lot of fishing last year but only got them on crosslines out in the stream. Of all the fish he got last year he did not get one under a pound and some up to 20lbs.</p>
Yass Tribune-Courier 1938	<p>Bald Blair Creek/Henry River, Guyra, north-east NSW</p> <p>Macintyre, Peel and Severn Rivers, northern NSW</p> <p>Abercrombie and other rivers, south-east NSW</p>	<p>Bald Blair Creek/Henry River: “rock cod” – eastern freshwater cod (<i>Maccullochella ikei</i>)</p> <p>Macintyre, Peel and Severn Rivers: “cod” – Murray cod (<i>Maccullochella peelii</i>); “yellowbelly” – golden perch (<i>Macquaria ambigua</i>); “jewfish” – freshwater catfish (<i>Tandanus tandanus</i>)</p> <p>“cod” – Abercrombie and other rivers, south-eastern NSW – trout cod (<i>Maccullochella macquariensis</i>) and Murray cod (<i>Maccullochella peelii</i>)</p>	<p>ALD. LEONARD REPLIES TO HIS CRITICS</p> <p>Why do not Mr. Reed and Co. get behind the movement when they admit the cod is disappearing and bring pressure to bear on the [Fisheries] department to move quickly and make cod hatcheries and again supply all our streams with cod in place of trout, which there is not the slightest doubt is doing the damage. I have collected the following in formation of other good cod streams now being only trout streams and declared trout streams. I was speaking last week to Mr. T. H. Merry, No. 1 White Street, Inverell (an Anzac), who is a farmer and a native of that district. His statement can be borne out by Mr. Herb Phillips, who was present. The Macintyre River some 15 years ago was teeming with cod and yellowbelly and jew fish. This river joins the Severn River. Trout was introduced by Mr. Chaffey, M.L.A. Today cod and yellowbelly are not to be had in any quantity. Also the Sheeby dam at the head of the Peel River, built by the mining company 30 years ago was stocked with cod etc. Some eight years ago trout were introduced into that dam. Today it is a trout stream. The Bald Blair Creek, Guyra, was noted for rock cod and since the trout were liberated rock cod have almost disappeared. Take the Abercrombie out from Crookwell. It was also noted for cod and to-day is a trout stream and cod are almost extinct. All rivers and creeks from Yass down through Crookwell to Orange, Bathurst and Lithgow are trout streams. I am sure Mr. Reid and Co. cannot tell me the name of any river where the trout have been liberated that was formerly cod and where cod is in any quantity to-day. Let him name them and I will have enquiries made there. The only cry they have is that netting is the cause of the cod diminishing.</p>
The Australasian 1939	Victoria	<p>“cod” – trout cod (<i>Maccullochella macquariensis</i>) and Murray cod (<i>Maccullochella peelii</i>)</p>	<p>BIG FISH AND LITTLE FISH</p> <p>Mr. Thomas Noye, of Ruffy, in the Goulburn Shire, says that some years ago he directed the attention of the Fisheries and Game Department to the alarming disappearance of cod, but so far had had no official communication to say that anything had been done ... I agree with Mr. Noye that English trout and perch have been chiefly responsible for the disappearance of young cod. Mr. Noye says that he has caught in the Big River, about 12</p>

Reference	Location	Native Species Impacted	Key Statements/Observations
			miles above Eildon weir, a trout containing three small cod.
Weekly Times 1941	Victoria	“cod” – Murray cod ( <i>Maccullochella peelii</i> ) and trout cod ( <i>Maccullochella macquariensis</i> ); “bream” – Macquarie perch ( <i>Macquaria australasica</i> ); “perch” – silver perch ( <i>Bidyanus bidyanus</i> ); “blackfish” – river blackfish ( <i>Gadopsis marmoratus</i> )	<b>TROUT BLAMED FOR FISH SHORTAGE</b> The move by the Gippsland Angling Association, in sponsoring the appointment of a biologist to the Game and Fisheries Department, has brought reactions from anglers in Gippsland, who hold that streams are being too quickly denuded of native fish by the introduction of trout ova. Older anglers who remember the days when cod, bream, perch and blackfish were all in a day's bag, blame trout for the denudation of streams, and point out also that trout themselves are giving very meagre sport. The Tarwin, once a veritable mine for blackfish, barely yields a decent catch now. Some years ago trout were introduced into the Foster at Korumburra. Not a fish of any sort is caught there now. A cod hatchery, once mooted, is advocated by anglers, with a complete check-up of opinions of anglers all over the State.
Yass Tribune-Courier 1949	Yass River, NSW	“cod” – Murray cod ( <i>Maccullochella peelii</i> ) and possibly trout cod ( <i>Maccullochella macquariensis</i> )	<b>NO COD NOW</b> Mr. Johnson says during the first ten years he was on the Yass river he never failed to fulfill a promise to any visitor to have fish for breakfast. He would throw a line in at daybreak and would never fail to get anything from an 8lb. to a 2lb. cod. "Now you can't get any cod here at all. I blame the trout. I have been trying (so far unsuccessfully) to get spawn to replenish the river," he said.

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