

13 Broken River Catchment

NORTHERN BLACKFISH.

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Argus, 15 January 1924

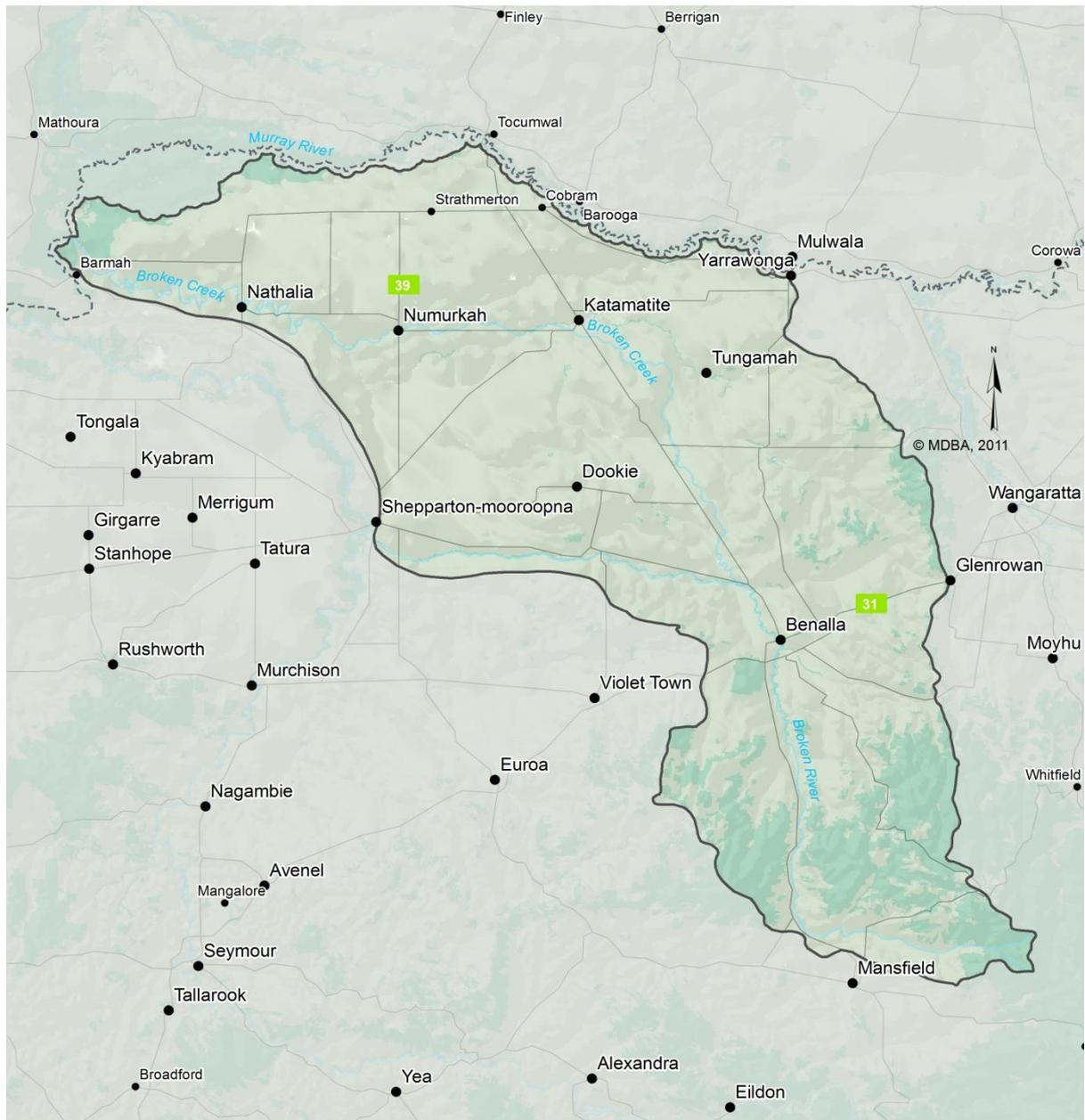
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Had "R.G.K." known, he might have kept these fish, because an exception is made about them. The regulation reads:- "Blackfish, except those in streams flowing north from the Great Dividing Range, 8 1/2 inches." These blackfish are a smaller species or variety, and the Fisheries department imposes no conditions in regard to them.

Argus, 15 January 1924

Figure 13.1 The Broken River Catchment showing major waterways and key localities.



13.1 Early European Accounts

The Broken River rises at the foot of Mt Buller north of Mansfield and, travelling west, collects water from tributaries originating in the Strathbogie and Wombat Ranges. After passing through Benalla the Broken flows northwest, splitting into two primary watercourses, the Broken River which discharges into the Goulburn River at Shepparton and the Broken Creek which enters the Murray River near Barmah.

On November 29, 1824 Hume and Hovell camped at the Broken River near Samaria. They apparently did not consider the waterway to be of sufficient significance to give it a name. It also appears that they did not fish the stream, or if they did they made no record if they encountered fish in it (Bland, 1831). On October 13, 1836 Major Thomas Mitchell camped on the Broken River near the present site of Benalla, simply recording the waterway as the 'Swampy' (Mitchell, 1838). In 1838 Grantville Stapylton, who was second in command of Mitchell's expedition, named it the Broken River, probably because the course of the river was broken up into ponds (Neil McQualter, pers. com.). The Broken catchment developed with time into a premier grazing region, the gold rush largely bypassing the area save for relatively minor workings such as those on the Ryans Creek (Flett, 1979).

Few historical accounts have been previously reported of native fish in the Broken catchment. John Langtry, in his post-World War Two survey of the inland fishery, mentioned the reputed abundance of Macquarie perch in the Broken River (Cadwallader, 1977). Many thousands of juvenile Macquarie perch were sourced from the Broken River for translocation elsewhere between 1935 and 1962 and, in 1962, about 100 small Macquarie perch were relocated from the Broken River to Boosey Creek (Cadwallader, 1981).

13.2 The Past Distribution of Fishes in the Broken River Catchment

The *Sustainable Rivers Audit* (Davies *et al.*, 2008) divided the Broken catchment into a lowland zone (downstream of Swanpool), a slopes zone (upstream to Barwite) and an upland zone beyond the latter location. Only a few headwater creeks exist in the montane zone. Slopes type habitat, identified by the presence of confined valleys with streams containing extensive coarse gravel and sand substrates, extends further downstream to the Yin Barun/Mollyullah area. The slopes zone is therefore treated as existing down to these locations in this discussion. Apart from the slopes/lowland zone boundary, the habitat zones discussed below match those in the *Sustainable Rivers Audit*. The native fish rarity scores developed by the expert scientific panel that were used in the audit defined two types of habitat namely a lowland zone and a second merged habitat consisting of the slopes and upland zones.

Most of the information presented below is sourced from oral history (mainly OH 63, 110-113, and 115) and a few newspaper accounts. In addition, local historian Redge O'Connor sourced information from 97 year old Frank Cook during the last weeks of Cook's life, in reference to the Benalla area fishery in the 1920s. Also included are anecdotes provided by the late Laddie Clifford, a professional fisherman from Barmah, to the author in the 1980s about the lower Broken Creek. Very few old photographs of catches of native fish in this catchment have been located though one is of significance. It is recommended that further historical research be undertaken in this catchment, particularly along the lower reaches of the Broken Creek.

13.2.1 *The Montane Zone*

Only a few small streams penetrate into the montane zone of this catchment and there are no records of larger native fish being present.

13.2.2 *The Upland Zone*

Oral accounts indicate that cod and Macquarie perch had been present in the upland zone of the Broken River at least as far upstream as the Stockyard Creek area. A first-hand account from Frank Moore, originating from the 1940s, recalled that small numbers of fish were being taken on each outing. Frank, while familiar with the two cod species, could not recall with certainty what type of cod was taken (Moore, OH 115; Frank Moore, pers. com.). By that time major declines in native fish populations had been reported further downstream and a similar situation probably applied to the upland zone. Old stories indicate that cod and perch had been common in the upper Broken River (O'Connor, OH 111; Redge O'Connor & Ambrose Doxey, pers. com.). The limited evidence suggests that cod and Macquarie perch had been at least fairly common in the upland Broken River. There is no clear evidence indicating what species of cod were present in this zone but as both Murray cod and Trout cod were reported further downstream it is likely that both species were present. Blackfish were also common in the upper Broken River (Frank Moore, pers. com.).

13.2.3 *The Slopes Zone*

Cod were common in the upper reaches of the slopes zone above Barjarg where some fairly large fish were taken (Doxey, OH 110; Ambrose Doxey, pers. com.), were very common in the Broken River in the Nillahcootie area, near Lima (*Argus*, 15 January 1924) and common in some of the larger creeks, including the Hollands and Ryans Creeks (O'Connor, OH 111). Stories from a number of residents, including Frank Cook, recalled that cod were present in the lower reaches of both the 'Back' and 'Little Back' (Wild Dog) Creeks at Nillahcootie (O'Connor, OH 111; Redge O'Connor, pers. com.). Upstream of Benalla both cod species were taken and old anglers told Ambrose Doxy that 'bluenose' (Trout cod) had been common in the early years of the twentieth century (Ambrose Doxey, pers. com.). The available evidence suggests that both species of cod had been common in the Broken River and larger creeks of the slopes zone and were present in some small creeks.

Macquarie perch were abundant in the Broken River in the Williams Bridge and Barjarg areas (Doxey, OH 110; *Argus*, 15 January 1924) and in the Hollands Creek near Tatong, the Ryans Creek near Mollyullah, the Back Creek (O'Connor, OH 111; Redge O'Connor, pers. com.) and were taken from the Broken River near the Mansfield-Whitfield Road Bridge during the early 1980s (Author's pers. obs.). Blackfish were also very common to abundant in those streams (Doxey, OH 110; O'Connor, OH 111) and at times were considered a nuisance when fishing for perch (Redge O'Connor, pers. com.). They were abundant in the Lima area where, on one occasion, an angler reported taking in the vicinity of a hundred fish from the river (*Argus*, 15 January 1924). The oldest resident to provide information, Frank Cook, indicated that up to the 1920s Catfish had a presence at the bottom of the slopes zone in the Hollands Creek, upstream to Tatong, and further upstream in the lower reaches of Back Creek (O'Connor, OH 111; Redge O'Connor, pers. com.). A newspaper story supports Cook's account recording 'good sport' being had with several fish species in the Broken River and creeks near Lima. This sport included Catfish, and noted their superiority as a table fish, suggesting that they were regularly captured (*Argus*, 15 January 1924). There are no historical records of Golden perch or Silver perch in the slopes zone though captures of Golden perch have occurred in recent years. These captures are likely to have come from hatchery released fish. Based on evidence of their presence in similar habitat in the adjacent Owens

catchment it is suspected that these two species had a minor presence in the lower reaches of the slopes zone of the Broken River.

13.2.4 The Lowland Zone

Redge O'Connor's recount of the memories of Frank Cook, as well as the stories from other anglers, indicates that that cod were common in some lowland creeks near Benalla including the Baddaginnie and lower Ryan Creeks (O'Connor, OH 111). In the early years cod were very common to abundant in the Broken River with fish up to 75 lb. (34.0 kg) being taken (Doxey, OH 110; O'Connor, OH 111). Further downstream at Nalinga, cod had been abundant (Jones, OH 112). An early newspaper account described very small cod as being 'plentiful' along the length of the Broken River (*Argus*, 3 July 1917). Large cod were common near Nathalia in the Broken Creek in the 1920s (*Argus*, 21 April 1925) and on one occasion three anglers captured 'fish weighing 35lb., 13lb., 9lb., and half a dozen between 3 and 4lb. in weight' (*Argus*, 1 February 1923). Cod were abundant in the Boosey Creek near Naring (Wallden, OH 113) and during a drought large numbers of cod were taken from the Boosey Creek in Tungamah, with fish up to 30 lb. (13.6 kg) being captured (*Argus*, 23 April 1902). Murray cod were also common in the Winton Swamp (Norris, OH 71) and in lagoons along the lower Broken Creek (Laddie Clifford, pers. com.)

Two records exist at the *Australian Museum* of specimens of *Maccullochella macquariensis* being captured from the Benalla area in 1890, but neither survives. It is unknown whether they were Trout cod or Murray cod (*Australian Museum* database). Ambrose Doxey regularly captured small numbers of Trout cod near Benalla prior to the Second World War, though considered Murray cod to be prevalent (Doxey, OH 110). George Jones, while never personally seeing the species when young, indicated that his father had talked about odd captures of 'rock cod', which he was certain were Trout cod, taking place in the past at Nalinga, and he caught specimens near Benalla after they were stocked in the 1990s (Jones, OH 112; George Jones, pers. com.). Bert Roberts was familiar with the species in the Murray River, and recalled only catching Murray cod in the Broken Creek near Devenish, in the 1930s (Roberts, OH 63). In the lower Broken Creek near Barmah, Trout cod were regularly taken in the 1930s but were not considered to be particularly common (Laddie Clifford, pers. com.). Confirmation of their original presence in the Broken River comes in the form of a photograph of a specimen caught by Keith Henderson of Harcourt during the mid-1970s, known with certainty to have been taken from the Broken River. The exact location of its capture is unclear but thought to be near Benalla (Photo BR1, Lyn Allan, pers. com.). Collectively the evidence suggests that Murray cod had originally been abundant in the rivers and larger creeks of the lowland zone while Trout cod were definitely present but, on the few available records, had been less common.

Macquarie perch were abundant in the Broken River at Benalla and the lower Ryans and Hollands Creeks, and were common in smaller creeks such as Baddaginnie Creek (O'Connor, OH 111). In the Broken River at Nalinga the species was also abundant with a typical catch consisting of five to six fish in an afternoon (Jones, OH 112). Lake (1959) mentioned that Macquarie perch were present in the Broken Creek, and a newspaper account specifically records Macquarie perch as having been present in that stream (*Argus*, 21 April 1925). In the 1940s they were regularly taken from the lower reaches of the Broken Creek near Nathalia (Laddie Clifford, pers. com.). Large numbers of 'perch' were reported in the Boosey Creek (*Argus*, 23 April 1902) but their actual identity is unclear. The Broken River was the source of many thousands of Macquarie perch that were translocated to other waters. In 1936 about 800 fish were reportedly taken from the Broken River near 'Violet Town' (*Argus*, 1 April 1936) and a Violet Town resident described small Macquarie perch as being 'plentiful' in the nearby Broken River (*Argus*, 8 January 1938). The closest point of the Broken River to Violet Town is at

Nalinga. In 1962 400 Macquarie perch were netted for translocation from the Broken River at Nalinga (Cadwallader, 1981).

Golden perch were regularly taken in small numbers at Nalinga (Jones, OH 112) while at Benalla they were caught, particularly after floods, but not considered to be common (Doxey, OH 110; Ambrose Doxey, pers. com.). Further downstream Golden perch were present in the Broken Creek (*Argus*, 21 April 1925) and were very common near Nathalia with fish being taken up to 13 lb. (5.9 kg) (Trefall, OH 132). They were abundant in the lower reaches of the Broken Creek near Barmah (Laddie Clifford, pers. com.). Golden perch were regularly captured but not common in the Boosey Creek near Naring in the 1930s (Wallden, OH 113).

George Jones recalled Silver perch as far more common than Golden perch in the Broken River at Nalinga when he was young, rivalling Macquarie perch in abundance (Jones, OH 112). They were regularly taken in small numbers in the Broken Creek near Devenish (Roberts, OH 63). One newspaper account indicates that Silver perch were originally common in an unidentified tributary of the Broken River (*Argus*, 15 May 1908) and large schools were present in the lower Broken Creek (Laddie Clifford, pers. com.). Ambrose Doxey could not recall capturing Silver perch in Benalla (Doxey, OH 110) and suggested that the absence of Silver perch and the relatively low abundance of Golden perch in the twentieth century at Benalla may have been the result of the Caseys and Benalla Weirs impeding their upstream migrations (Ambrose Doxey, pers. com.). The weight of the limited available evidence points to Macquarie perch having been the most abundant and prevalent perch species in the top half of the lowland zone, followed by Silver perch, with Golden perch being comparatively scarce. Golden perch steadily increased in numbers downstream, to become abundant in the lower half of the lowland zone where it appears that all three perch species were regularly taken.

Catfish appear to have been widespread and common, particularly in the billabongs and creeks. They were regularly captured in the Baddaginnie Creek, the lower Ryans Creek and Broken River near Benalla (Doxey, OH 110; O'Connor, OH 111). They were common in lagoons and Galls Creek near Nalinga (Jones, OH 112), and were abundant in the Boosey Creek near Naring (Wallden, OH 113). They were very common in the Broken Creek near Devenish in the 1930s, being taken up to a weight of three lb. (1.4 kg) (Roberts, OH 63) and were also originally abundant in the Winton Swamp (*Argus*, 6 December 1921). Blackfish were very common in the Baddaginnie and other small creeks near Benalla, and were taken from the Broken River itself (O'Connor, OH 111). At Nalinga they had been very common, with typical catches being three to six fish in certain locations (Jones, OH 112). Blackfish were abundant in the Boosey Creek at St. James, in the 1930s (Neil McQualter, pers. com.), the Broken Creek near Devenish (Roberts, OH 63) and in the lower reaches of the Broken Creek and adjacent lagoons near Barmah (Laddie Clifford, pers. com.). Overall Blackfish appear to have been very common to abundant in most habitats in the lowland zone.

13.2.5 Estimates of Native Fish Abundance in the Broken River Catchment at European Settlement

Presented are the rarity scores used in the *Sustainable Rivers Audit* (Davies *et al.*, 2008) which were developed by an expert panel using historical evidence available prior to 2008. They indicate the probability of capturing a particular fish species using standardized survey techniques such as electrofishing. They are compared to those developed in the *True Tales* Project using more recently obtained historical evidence and are based on the typical size of angler catches in the oldest accounts.

Table 13.1 Broken River Catchment Rarity Scores (Main River Channels)

Species	Lowland*		Slopes*†		Upland†	
	(Murray & Goulburn Rivers to Yin Barun & Mollyullah)		(Yin Barun & Mollyullah to Barwite)		(Upstream of Barwite)	
	SRA	True Tales	SRA	True Tales	SRA	True Tales
Trout cod	5	3	3	3?	3	L3?
Murray cod	5	5	3	3?	3	L3?
Golden perch	5	3	1	L1?	1	0
Silver perch	5	L5	0	L1?	0	0
Macquarie perch	3	5	3	L5	3	3
Catfish	3	3	0	1	0	0
'Blackfish'	5	5	3	5	3	3

Key

0 = Absent: no credible account reporting the species former presence

1 = Rare: a few individual fish could be expected to be taken by a resident angler each year

3 = Common: regularly taken by a resident angler in small numbers

5 = Abundant: frequently taken by a resident angler in good numbers

L = abundance at the lower end rating

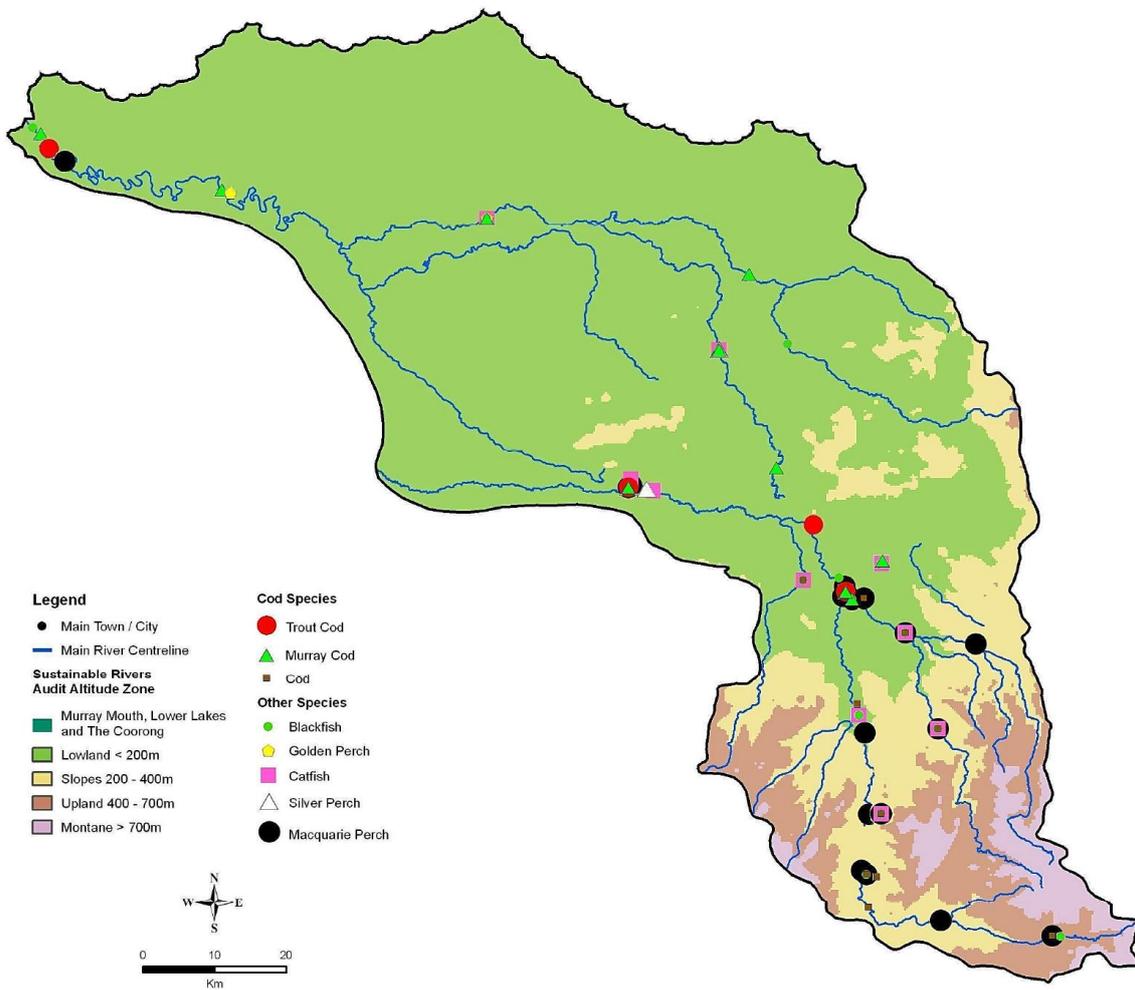
U = abundance at the upper end rating

Ratings in bold type supported by multiple accounts or lines of evidence e.g. Oral history, newspaper accounts, photographs.

* Note: Some of the boundaries used for this zone are at a lower altitude than those used in the *Sustainable Rivers Audit*

† Note: The *Sustainable Rivers Audit* utilised rarity scores for a combined slopes and upland zone whereas in this project these two habitat zones have been scored separately

Figure 13.2 Historical Records for all Native Fish Species in the Broken River Catchment.



Photograph 13.1 Broken River Trout Cod



Photo BR1: This Trout cod was caught by Keith Henderson of Harcourt from the Broken River near Benalla c1975 while attempting to catch Macquarie perch for his native fish breeding program. It was brought back alive and kept in an aquarium but died in a few days. The photo is significant for two reasons. Firstly, it is conclusive proof the species past presence in the Broken catchment. Secondly, it also demonstrates Keith's familiarity with the species and thus makes his accounts of the presence of Trout cod in the Campaspe catchment in the past reliable. Photo courtesy of Mrs Lyn Allan.

Photograph 13.2 A Huge Macquarie Perch



Photo BR2: This image probably contains the largest Macquarie perch ever recorded photographically. Tipping the scales at six lb. (2.7 kg) this fish was captured by Paul Berner from Lake Nillahcootie c1974. Specimens captured from Lakes Dartmouth and Eildon by scientists have exceeded three kg in weight whilst professional fisherman 'Laddie' Clifford of Barmah once informed the author that a number of eight pound specimens had been taken by professional fishermen in that area in past years. Macquarie perch once dominated the Broken catchment which was used as a source for translocations elsewhere. A relic population existed in the lake and the Broken River upstream to near Mansfield until the mid-1980s. Recent reports suggest it may still persist. Photo courtesy of Paul Berner.

13.3 The Changes

13.3.1 Changes to Native Fish Distribution and Abundance

In the upland zone significant numbers of Macquarie perch and cod were taken in the early twentieth century, but by the 1940s only a few individual fish were taken (O'Connor, OH 111; Moore, OH 115). Today the only large native fish that are present are Blackfish (Author's pers. obs.).

Cod were very common in the slopes zone in the 1930s but had become scarce by the 1950s, after which they were rarely captured (Doxey, OH 110; O'Connor, OH 111; Ambrose Doxey, pers. com.). It appears that during the 1930s cod populations started retreating downstream from the upland/slopes habitats. Trout cod were scarce in the area by that time and have not been subsequently reported (Ambrose Doxey, pers. com.). Macquarie perch remained abundant in the slopes zone in the Broken River until the early 1950s (Doxey, OH 110) and were common in the lower reaches of the Ryans and Hollands Creeks until the 1960s (O'Connor, OH 111), by which time a serious decline was evident. After the construction of Lake Nillahcootie in 1967, occasional captures occurred in the lake (Paul Berner, pers. com.; Photo BR2), and in small numbers each spring further upstream in the Spring Creek area, near Mansfield, during the early 1980s (Author's pers. obs.). Catfish have not been reported from the slopes zone since the 1920s (O'Connor, OH 111).

In the lowland zone some reduction in cod catches was evident by the 1940s and they had become scarce in smaller creeks near Benalla including Baddaginnie Creek by that time (Ambrose Doxey & Redge O'Connor, pers. com.). Cod remained common in the Broken River, though small fish were less prevalent, and a further decline was evident during the 1960s (Jones, OH 112). In the Boosey Creek cod disappeared after a large fish kill in the late 1920s (Wallden, OH 113). Trout cod, which had regularly been taken from the Broken River near Nalinga and Benalla in the early twentieth century, had virtually disappeared by the 1940s, with rare captures occurring up to the 1970s (Ambrose Doxey, pers. com.; Photo BR1). In the lower Broken Creek the species had disappeared by the 1960s (Laddie Clifford, pers. com.).

In the Broken River at Benalla and Nalinga, Macquarie perch, while still common, showed evidence of some decline in the 1940s. By the 1960s a serious reduction in abundance had transpired, with their virtual disappearance by the 1970s (Doxey, OH 110; Jones, OH 112; Ambrose Doxey, pers. com.). The oral history is supported by translocation records which suggest declining catches in the Broken River from the 1930s to the 1960s (Cadwallader, 1981). Similarly Silver perch became scarce at Nalinga by the 1960s (Jones, OH 112) and Golden perch had disappeared near Benalla (Ambrose Doxey, pers. com.). During the 1920s local anglers observed a decline in catches of Macquarie perch and Golden perch in the Broken Creek, this being associated with the arrival of Redfin perch in large numbers (*Argus*, 21 April 1925).

Catfish appear to have undergone a decline during the 1930s in the lowland zone, having been common up to the 1920s. Ambrose Doxey had not seen a Catfish at Benalla for over fifty years suggesting their scarcity since at least the 1940s (Doxey, OH 110). George Jones recalled his father's stories of Catfish at Nalinga but at 72 years of age had never himself seen one. George pinpointed a drought which he suggested as taking place towards the end of the 1920s as exterminating Catfish populations near Nalinga (Jones, OH 112; George Jones, pers. com.). Their disappearance from the Boosey Creek was also linked to a drought in the late 1920s (Wallden, OH 113). Neil McQualter of the Benalla Historical Society recalled that 'greasies' (Blackfish), which were common in the Boosey Creek, near St. James, when he was a boy in the 1930s, disappeared during the 1940s (Neil McQualter, pers. com.).

13.3.2 Changes to Habitat

Early photographs reveal that much of the habitat immediately upstream of Barjarg had been cleared of virtually all tree cover by the 1890s (eg, State Library of Victoria, H85.162/26; H85.162/86). Land clearing resulted in the mobilisation of large volumes of sediment which was transported down the Broken River (De Rose *et al.*, 2003). Weirs were constructed on the Broken River along its course as early as 1890s, with Caseys Weir downstream of Benalla being constructed to divert water from the Broken River into the Broken Creek. A number were subsequently constructed along the creek to provide suitable holes for pumping and storing water for farming (*Argus*, 30 April 1895; Bassett & Latch, 1984; Wallden, OH 113). Caseys and Benalla Weirs have been implicated in reducing the abundance of Golden and Silver perch near Benalla by acting as instream barriers to fish movement (Ambrose Doxey, pers. com.). During the 1960s sections of the Broken Creek near Nathalia were dredged to improve drainage of nearby farmland (SKM, 1996). Tenders were called for the removal of snags from the Broken River in 1935 (*Argus*, 3 July 1935). Further 'river improvement' works involving removal of snags occurred downstream of Benalla in the 1960s, after which many of the deep holes filled with sand (Jones, OH 112).

While touted as early as 1909, it wasn't until 1967 that a sizeable water storage on the Broken River was constructed with the commissioning of Nillahcootie Dam. Further storage of water in the catchment was realised in 1971, with the completion of a wall at the Winton and Green Swamps to form Lake Mokoan, storing water diverted from the Broken River and Hollands Creek by channels. It has been suggested a diversion weir for Lake Mokoan on the Hollands Creek created an instream barrier, which inhibited migrations of Macquarie perch (O'Connor, OH 111). Downstream of Nillahcootie Dam there is evidence that irrigation releases may depress temperatures by up to 5 °C (Ryan *et al.*, 2001).

Brown trout were introduced to streams in the Tatong area in 1873, being amongst the earliest releases into the Murray-Darling Basin in Victoria (Ritchie, 1988). Trout flourished in a number of streams in the upland and slopes zone of the Broken, being regularly captured near Benalla in the 1950s (Doxey, OH 110) and occasionally at Nalinga (Jones, OH 112) in the lowland zone. Redfin perch were introduced to a dam in Tungamah in 1904 and at about the same time near Numurkah (*Argus*, 14 May 1907). They became abundant in the Broken Creek by the 1920s, and local anglers observed a decline in catches of Macquarie perch and Golden perch after their arrival (*Argus*, 21 April 1925). Redfin perch were also associated with the disappearance of Blackfish in the Boosey Creek during the 1930s (Neil McQualter, pers. com.). They arrived at Benalla and Nalinga in the 1930s, becoming abundant (Doxey, OH 110; Jones, OH 112). Redfin perch were present in the Nillahcootie area in the 1950s (Ambrose Doxey, pers. com.) and, after Lake Nillahcootie filled, were abundant in the lake (Ambrose Doxey & Paul Berner, pers. com.). Acclimatisation activities continued until as recently as 1941 when Tench were liberated into some waters in the catchment including Ryans Creek (Ritchie, 1988). European carp reached Benalla in the 1970s (Doxey, OH 110).

Large kills of cod due to drought were reported in the Boosey Creek in 1902 (*Argus*, 23 April 1902) and again in the 1920s (Wallden, OH 113). Large kills in both the Broken and Boosey Creeks in January 1931 were associated with floods and decaying vegetation (*Camperdown Chronicle*, 31 January 1931). Catfish died in lagoons and creeks near Nalinga and the Boosey Creek during a drought in the 1920s (Jones, OH 112; Wallden, OH 113). Lake Nillahcootie was one of the earliest waters identified as harbouring EHN virus which caused the mass mortality of Redfin perch in 1985 (Langdon & Humphrey, 1986). The virus has been reported as being particularly lethal to Macquarie perch and has therefore been implicated in the decline of the species in some areas (Langdon, 1989). It is plausible that the virus may have been present and active in the Broken catchment prior to 1985 but evidence for its presence in the region before the 1980s is lacking. If the EHN virus began to exert its influence in the Broken during the 1980s then it played no more than a minor role in the demise of

Macquarie perch populations which had almost disappeared by that time. Major kills of Murray cod occurred in the Broken Creek in the early 1990s and November 2002. The causes of these kills is uncertain but is thought to be related to water quality issues including low dissolved oxygen (McKinnon & Shephard, 1995; Rees, 2006).

13.4 The Current Situation

The *Sustainable Rivers Audit* concluded that:

The Broken Valley fish community was in Very Poor Condition, with the Lowland Zone community in Very Poor Condition and the Slopes Zone in Moderate Condition. Fewer than half of the predicted native species were found. Although native fish were numerically dominant, these were small species and only one-third of the total biomass. Substantial species richness had been lost, and the biomass was dominated by alien species (Davies *et al.*, 2008).

The moderate rating for the slopes zone was largely derived from the large numbers of Blackfish and smaller native fish species collected from a number of waters during surveys. The slopes zone assessment also included Macquarie perch populations in the Hollands and Moonee Creeks and the Broken River between Nillahcootie and Benalla which had recently been re-established through stockings of juvenile fish, though serious decline has subsequently occurred in these populations during the recent drought. A short section of the Hollands Creek (approximately 25 km) has been designated a 'Demonstration Reach' where a coordinated effort is being made to repair the aquatic habitat to restore native fish populations (Raymond *et al.*, 2007).

In the top half of the slopes zone above Lake Nillahcootie cod are now absent, and Macquarie perch uncommon. Murray cod and Golden perch have been stocked into Lake Nillahcootie which, in the case of the latter, is well upstream of where the species has been historically recorded. Considering the fact that in the lower slopes zone Macquarie perch had been prolific, that it once contained Catfish and that cod are now uncommon, the rating for this type of habitat in the *Sustainable Rivers Audit* appears to be inaccurate, overestimating its true health. Redfin perch dominate some areas of the slopes zone and Brown trout are also present in numbers.

In the lowland zone stocking of Murray cod assisted in recovery of the population. There is evidence of cod spawning in the Broken River regularly, and they exist as a self-supporting population. The Golden perch fishery is probably maintained through ongoing liberations of fingerlings (Humphries & King, 2004). In recent years a series of fishways have been installed at weirs to facilitate upstream fish passage (O'Connor, 2006). In the lowlands Macquarie Perch are absent, while Silver perch and Catfish are uncommon captures, the latter existing as a relic population in the Broken Creek near Numurkah. The overall picture appears to be that downstream of Nillahcootie reasonable stocks of native fish now exist, though some key species are now rare, while upstream Macquarie perch exist as a small relic population. In recent years the upper Broken River has had little flow, sections of it being dry, as a consequence of the recent severe drought.

13.5 Newspaper Highlights

Argus, 23 April 1902

Tungamah. / Large numbers of fish, cod and perch, are being landed from the mud in the town tank, codfish weighing up to 25lb. and 30lb. having been caught.

Argus, 15 May 1908

Murray Silver Perch. "J.M." (Horton) says:- "whilst fishing lately in a tributary of the Broken River I caught several fish resembling in shape the Buffalo fish, as given in "Webster's Dictionary." They weighed about 1½lb., had a "pig" nose (white ring), and gave forth short grunts when drawn from the water. They frequent shallow water, and on a sunny day may be clearly seen basking in the sunshine. They are very shy, the least movement sending them into hiding. When the water is disturbed (as by dropping in of a pebble) they rapidly swim to the spot. They will not touch an ordinary bait at first, and not until they have been fed by worms are they tempted to bite. The flesh is very sweet."

Argus, 3 July 1917

Growth of Murray Cod. Some fisherman or angler familiar with the Murray and its tributaries may be able to give "M.C.D." (Violet Town) some particulars as to the growth of Murray cod. Last December, he says, they caught several Murray cod about three or four inches in length, which were of course returned to the water. / "Anywhere in the Broken River these little Murray cod are extremely plentiful, and the question is, when is there likely to be a prospect of good fishing in this river by reason of the great numbers of small cod which were there twelve months ago?"

Argus, 6 December 1921

Catfish. "Marlin" (Caulfield) says that catfish are plentiful in Winton Lake, and asks what bait is used for them.

Argus, 15 January 1924

/ "R.G.K." (Richmond) says that he has just had a fortnight's fishing in the Broken River and various creeks around Lima (via Benalla). Although he had good sport with Murray cod, bream (Macquarie perch), and catfish, which he remarks is a far finer table fish than is generally realised, he noticed, too, how numerous were the blackfish. He must have hooked over a hundred, but returned them all to the river

Argus, 21 April 1925

Cod and Redfin. Talking to a Nathalia boy during the week, he told me that the "Redfin" or English perch, once pretty numerous in the Broken Creek, had in his locality almost disappeared. The impression is that they are being eaten out by the large cod, of which there are many in the stream. There should be no regret about it, for the native perch of all these waters are far better fish than anything that might displace them. Along the Broken Creek there was a belief that the Macquarie perch (Murray bream) and golden perch decreased in number as the Redfins increased.

13.6 Broken River Catchment Oral Histories

The following oral histories (OH 110-113) mostly discuss the Broken River Catchment.

OH 110

Ambrose Doxey of Benalla was interviewed in October 2006 at an age of 86 years.

In the river upstream from Benalla years ago the three most commonly caught fish were the bream, the cod and the Blackfish. All three went up past Nillahcootie. The bream were very common. Mostly the Macquaries were up to about 2 pound. Two of the biggest I caught were over 3, nearly 4 pound. They were caught out in front in the old weir. You would get them in the spring and again in the autumn. In the summer the water was too low. Up past Nillahcootie, that was THE home of the Macquaries. Big, long, sandy stretches. Just after the war, about 1946, we fished up above William's Bridge. That was a long trip up there. Back then it was a dirt road! It was a Friday, about 4 o'clock and there was a big storm. We got 23 fish, mostly Macquaries up to about 4lb, fishing off a bank about 4 feet high. One would be on top of the bank fishing, the other at the bottom to land them.

Good cod were caught up past Mansfield. Up past Barjarg there were some good cod spots, really good holes. There were two types of cod, though we didn't take much notice back then. I think the second type were called bluenose, in amongst the normal cod. Around Benalla very few really, at least in my time. You saw them but you didn't take much notice. In my younger days Alf Smith the railway ganger, well he was a beauty on the cod. He caught one near the railway bridge in town with a rabbit down it's throat. I saw one caught that was 75 pound caught out of the lake outside the angling club rooms.

Other fish at Benalla, well there were yellowbelly. I can't remember any grunter being caught. The Catfish were caught in the river, but I haven't seen one now for over 50 years. The redfin turned up between the wars, at the time the lakes got built. The native fishermen thought the redfin were rubbish, though some blokes got good money for them. The carp turned up in the seventies. The trout arrived here in between. Well after the war the Macquaries got scarcer, more so after the dam got built.

OH 111

Redge O'Connor was interviewed in March 2007 at an age of 85 years.

I grew up at Nyah West and I can remember at Nyah and at Vinifer the paddleboats. Dad would say "let's go get a cod" and we would go fishing and get cod all the time. Out there in the Vinifer swamp there were lots of clay banks, bridges and holes in which the fish lived under. We'd go to different places to catch the different fish, callop in one place; cod in another, the grunter were in other spots. You never really caught them all together, they were in different places. We never caught a Catfish at Nyah; I've caught them at other places but not there. My grandfather Vernon at Nyah got a cod that went 122 pound; he got it on a centipede. We used to go out where the sleeper cutters were cutting the sleepers for the railway. There would be big rolls of bark and you would get the centipedes in them. My grandfather would cut the head and tail off them so they couldn't bite you and stick them on a real hook, a big one.

The callop and the grunter were plentiful, we weren't so keen on them to eat, the callop. And the grunter were very ranky, they had a strong fishy taste. You got the callop, got them both up to 3 pound, the callop 3, 4, 5 pound. The grunter were up to about 3 ½ pound, it got me with a spike, I got a poisoned thumb from one, had a day off school. The cod we used to catch anything 6, 7, 8 pound, 22 pound, used to throw a lot of small stuff back. I remember once I fished at Patcha, well I swam across the river; I had a handline tied to my belt with a yabby on it. I set it up on a springer, went to the toilet and when I got back I had a 6 pound cod on it. Back then there were no spinners, as I got older the aeroplane spinner came in, and then the floppies, I have still got some

floppies. At Nyah we used to get a rock cod, they were very scarce, hardly ever saw them. I thought they were a deformed cod. Later on when I moved over here from Bendigo, about 1950, they were in the Polly McQuinns Weir near Strathbogie. At Nyah and Polly McQuinns they weren't very big; a couple of pound was what you saw. At Polly McQuinns the rock cod were in the weir as well as down below, there was plenty of them in the weir when I fished it and a lot of the bream. The redfin they were in the Murray as far back as I can remember, when I was a boy. They were only small, there'd be shoals of them, tap, tap, tap, they'd go; they'd get the bait before the bream could. They were more or less a cannibal fish, they ate everything.

When I came over to Benalla the Broken here was full of the bream, the Macquarie perch, and cod. I remember there was lots of them in the Hollands branch and Ryans Creek as well as the river. They were pretty well originally everywhere in the river and the creeks right up into the hills, the bream and the cod. The cod were caught right up to the top of the Broken, that's from the blokes that lived here that have now passed on. There was a little creek just out of town over Sherwell's Bridge; years ago it had the bream in it, and the cod, and beautiful Blackfish. I remember my son once said he was going to catch a bream; he only grabbed a landing net. The bream were going up the Hollands branch to spawn and they were that thick he brought home a couple he caught in the landing net. They were about 2½ to 3 pound. But when they put the channel from Nillahcootie to Mokoan, they broke into the Hollands branch with a pipe, used it as channel. When the bream tried to go up they couldn't get past there, well that stopped them breeding. They are coming back we are getting them now at the junction of the Hollands and Ryans and up at Williams Bridge.

There was one old timer here Frank Cook, he just passed away recently, I used to visit him, he was 97. He told me that when he was a boy back then. All the creeks around here were full of cod, slimies and the Catfish. He said the Ryans Creek, the Hollands Branch and the Back Creek had those fish in them and lots of bream. He said the Baddaginnie Creek was the same back in the 20s, he got Catfish and cod there too as well as slimies. And Myrtleford, he mentioned catching Catfish in the Ovens River in Myrtleford. And Little Back Creek, one lady told me that her grandfather used to catch cod there many years ago.

OH 112

George Jones of Nalinga was interviewed in January 2008 at an age of 72 years.

I'm nearly 72 now, born in Violet Town hospital. Dad was a farmer, and a fisherman, he'd go out with a horse and jig or a bicycle to go fishing. My grandfather, he used to catch the bream and greasies here, and catch a few cod on homemade spinners. The black bream was in Dartmouth, that's the only other place I know of them other than the Broken. Goggle eyes they used to call them over here. In the Broken there was also the silver bream, or grunter. The black bream, years ago you could go down and catch 5 or 6 in an afternoon. Years ago they got 70 out of a drum net, and a trout. Three pound was a good bream, a lot of them a pound and a half, two pound. Used to catch them on a little cross line, out on a log. Silver bream, the grunter they were about the same, just as common. The first redfin at Redge Bensell's pump hole, I caught the first two redfin, then there was a lot of them in the river in a fortnight, come in like the carp. I suppose I was 14, 15, something like that. Years ago there was Catfish here till a drought killed them out. Dad told me he used to get them on the other side of Nalinga, Collin Gall's Creek near the college turn off, and in the lagoons on the Broken. The creek used to be deeper, now it's all muddied up. The yellowbelly you could catch them below the weir, an odd one. Dave Martin caught one nine pound in Woodcock's.

The cod, when I was young the average be 4 pound. Dad had a spinner, took it up the river, ordinary reel, pull a bit of line out, haul it in by hand, that's how he caught the cod. I had the spinner out of the water and a cod it jumped out of the river and grabbed it! I've got three 60s, a 53, a 42, a 36, caught a lot of bloody fish, some illegal, some legal. We used to get a lot on the carp, illegal. I got a water rat in one out of the river, and a black shag out of the 60 pounder. He spewed it out in the back of the ute, god it stunk! It was rotten. There was the

rock cod, dad used to call them that, that's the Trout cod, he mentioned them being around, never heard him say they'd been common here. I never saw one out of the Broken.

The greasies, some used to call them the Blackfish, but they're on the other side of the divide. You'd get them down with the bream, where there was the water lice running around on the water, in the roots of trees. You might get three in an afternoon, half a dozen. They disappeared when they pulled the snags out. We used to get the old tench. I set one, it had died in a bucket, got a 34 pounder, a cod, on a dead bloody tench. The bream, the Macquaries were the best eating fish, some liked the redfin. The grunter, one would be alright, others would be tough. The bream, they disappeared, they went before the carp were in. After the redfin come in. Then they snagged the river, the holes sanded up. Now when they want sand in Shepparton they could get it here, but they won't take it away from here. All the holes now are full of sand. We went fishing just this side of Benalla, there was a nice stream of water there, it was coming from the sewerage farm. I reckon that's one reason why the fish died out.

OH 113

Cyril Wallden of Yarrawonga was interviewed in August 2007 at an age of 92 years.

I'm 92 years old, grew up at Naring between Yarrawonga and Shepparton. I used to fish the Boosey Creek; we lived two mile from it. There was a power of cod in there then, they were caught up to 50 pound. That would have been in the 1920s to the early 30s. There used to be Catfish and redfin and Blackfish. And a few yellowbellies. We used to get a lot of Catfish out of it. The Catfish they'd be about 3 or 4 pound, my father always used to get them, he liked them.

The creek used to go dry in summer but in the big holes was where the cod used to live. Every 2 to 3 mile along the creek there was shire dams, that's where the cod were. My father once put a nightline in and he got a cod about 8 to 9 pound and we brought him back and tethered him in the dam for the weekend on a long string. In the late 20s the cod all died. I was going into school and I went in there one day and there were two blokes from the shire fishing them out and burning them. No one knew what killed them. There's never been no cod in the creek since.

My father used to do a lot of fishing in the Murray, he was a great old fishermen. My father he lived on fishing, he spent a lot of time fishing. There's the photo of what we caught one trip taken about 80 years ago. We used to catch mainly cod and redfin, and the yellowbellies. And there was the grunter fish; they'd be 3-4, 5 pounds. Some liked them all right, but I didn't like them at all, they had a reedy taste about them. The redfin were good eating, but I prefer the cod. We sometimes used spinners but had handlines. My father would put a nightline in occasionally. I used to use mussels or yabbies, or little carp. Mostly yabbies and mussels. At one time we were cutting wood for a charcoal burner and this old bloke had sausages left over. So he put them in and he got two big cod on the sausages. One of the cod, my brother cleaned it and it had a 2 pound cod in it just dissolving off the bone.