

## **River Aire Fish Populations 2012** *Kevin Sunderland, Bingley (February 2013)*

### **Introduction**

As far as is known, the last list of fish in the River Aire, entitled the Fishes of Upper Airedale, was produced by Wm H Whitaker of Utley, and was published in the Bradford Scientific Journal, Volume 2, 1907 -1910 (Note 1). It was far easier to compile an accurate list at that time as there were thought to be no fish populations downstream of Shipley where the grossly polluted Bradford Beck entered the river.

The information shown below has been mainly derived from conversations with anglers, recent Environment Agency reports, press articles, records in libraries, and personal observations. A great source of historical information has been the Pollution Commission Report of 1867 (Note 2). A number of the paragraphs of this report are referred to in this article.

Many stretches of the Aire are relatively inaccessible and remain seldom fished and little surveyed by the Environment Agency. This leads to information being biased towards certain areas which can then result in omissions of some fish populations. However, it is hoped that the information given will help to give a reasonable overall view which can be used in the future to show the position in 2012.

Although the Aire generally reflects the usual zones for fish, such as trout in the higher reaches, and roach in the lower reaches, the river is very patchy due mainly to the presence of thirty or so weirs. The weirs have a big effect on the fish populations due to their pooling effect. The species of fish in the slow deep water above a weir may be completely different to those in the shallow fast water below the weir.

### **Current Position**

As recently as 1974, Dr D J Shilcock, the then Fisheries Officer for the Yorkshire Water Authority, stated that the fishery on the Aire ended at Esholt (Bradford), and below there, there were only sticklebacks (Note 3). Since that time, particularly over the last twenty years, there has been a huge improvement in the water quality of the River Aire, and there are now fish populations all the way down the river and in most of the tributary becks which flow into it. Investment in sewage treatment, work on combined sewer overflows, regulation of industrial discharges and the collapse of the textile industry, have accounted for this improvement.

Two major developments have recently taken place which will have great bearing on the fish populations of the River Aire in the future. One of these was the upgrade of the sewage treatment works at Esholt, Bradford, and at Knostrop, Leeds. This work was brought about by the European Freshwater Fish Directive and the primary purpose was to reduce ammonia levels in the effluent from the works. The £75 million scheme at Esholt was completed in late summer 2009, whilst the staged improvements at Knostrop continued to be completed shortly afterwards.

The other major development is the Humber District Plan of the European Water

Framework Directive (WFD) which was signed off by the Secretary of State for the Environment in December 2009. The WFD addresses many problems in Europe's rivers. The EA's commitments in the Humber District Plan include the removal of all artificial barriers to fish migration and the return to all the Humber Region rivers of self-sustaining spawning populations of migratory fish by 2021. The fulfilment of these commitments should have a great effect on the fish populations of the Aire.

### **Weirs, Hydros and Fish Passes**

Although corn milling weirs have been on the River Aire since Norman times, it was the Aire and Calder Navigation, founded in 1699, and the following Industrial Revolution, which led to additional better maintained weirs being built. These weirs eventually led to the demise of migratory salmonids in the Aire. As mentioned above, the Water Framework Directive is expected to deal with most of the problem weirs during the period to 2021. At the present time there are fish passes on the weirs at Fleet, Lemonroyd, Rothwell, Thwaite Mills, Castleford and Rodley. The fish pass at Castleford having been opened in 2007 and the one at Rodley as recently as late autumn 2012.

The once very difficult task of restoring migratory fish to the Aire has been made far easier by the disappearance of numerous weirs, some having been removed for flood relief and drainage purposes, whilst others have collapsed and been removed by the forces of nature. Historic weirs which no longer exist were previously found at Hunslet Old Mill, Calverley, Esholt Hall, Upper Esholt, Buck Woods, Dowley Gap, East Riddlesden, Stockbridge, Silsden Bridge, Cononley Bridge, Carleton Bridge, Inghey Bridge and Aireton. A list of weirs in 1867 can be found in paragraph 5779 of the Pollution Commission Report of 1867 (Note 2).

The announcement by the Government on 7<sup>th</sup> February 2013 that funding has been made available for the Leeds Flood Alleviation Scheme has huge implications for the migratory fish populations of the River Aire. The scheme, scheduled to commence in 2014, includes the removal of the weirs at Crown Point and Knostrop in Leeds. The weirs will be replaced by movable weirs which will include fish passes. As Knostrop Weir has been a virtually impassable barrier to migratory fish, its alteration should have a hugely beneficial effect.

Once Knostrop Weir has been altered, the remaining major barrier below Leeds will be the Canal and River Trust's weir at Knottingley, where fish have to wait for suitably high flows until they can ascend. An expression of interest in putting a hydro on Knottingley Weir previously meant that Government funding for a fish pass there could not be used as the hydro operator would have been obliged to pay for the fish pass. The hydro operator has now decided to withdraw its interest so funding sources for a fish pass can now be looked for by the Canal and River Trust and other interested parties.

### **Previous Records**

There are few available records of the fish populations prior to the onset of the massive increase in pollution which took place from 1830 to 1850. The best records relate to the Keighley area and the first of these was made by the Reverend Miles

Gale, rector of Keighley from 1680 to 1720. In his manuscript (Note 4), he stated that in 1690 the local River Aire contained dace, grayling, minnows, perch, eels, gudgeon, trout, smelts (salmon smolts) and salmon.

In 1733 an anonymous writer in Thomas Gent's "The History of the Loyal Town of Ripon" (Note 5) confirmed the above species to be still present in the vicinity of Keighley but also added sticklebacks, ruffe, chub, bullheads and pike. The 1733 list stated that the Aire at Keighley "affords Dares, Gralings, Menards, Bonestruckles, Pearch, Eels, Gudgeons, Ruff, Chub, Trout, Salmon and Salmon-Smelts: The former, when out of season, come up the river to spawn, and return into the salt water again. There is plenty of Millers Thumb and Pike, which the River was first stored with by Mr Tempest's Fish Pond of Broughton, breaking into the River".

In "Keighley Past and Present" published in 1858 (Note 6), the author compared the fish populations in 1858 with those in 1733. He pointed out that grayling, ruffe, salmon and salmon smelts, had all disappeared and that dace were now seldom caught, but that these species had been replaced by an abundance of roach and some crayfish. The bursting of a gentleman's pond is described as having caused the introduction of roach to the Aire around Keighley, and the crayfish having been introduced by the Garforths into a small brook near Steeton.

A number of references to fish species in the Aire were made in the 1867 Pollution Commission Report. In paragraphs 5481 onwards, William Ferrand stated that he regularly fished the river in Bingley from 1817 to 1826 and that the river contained vast quantities of trout, grayling, eels and crayfish. The abundance of trout at Cottingley Bridge (near Bingley) in 1820 was confirmed by the observations of a member of the Busfeild Family (Note 7).

Due to physical modifications to the river in the mid 19<sup>th</sup> century, the fish populations of the river may never return as formerly. In a number of areas the river has been straightened or deepened. The river above Keighley has had a number of meanders taken out and weirs removed, thus causing the river to flow straighter and faster. Much of the work was carried out by the Airedale Drainage Company and resulted in the surface water being lowered by an average of four feet between Stock Bridge, Keighley, and Skipton (Pollution Commission Report, para. 5515). The alterations probably made the habitat more suitable for salmonids, and less suitable for some coarse fish. The effect of this was not noticeable until pollution was alleviated in the late 20<sup>th</sup> century. As water quality improved, there was a rapid expansion of trout and grayling numbers and a decline in coarse fish populations.

### **Salmon** (*Salmo salar*)

The Pollution Commission Report of 1867 includes interviews with various witnesses who could remember the fish populations before pollution above Shipley, and gross pollution from Shipley downstream, affected the River Aire. It is interesting to note that few of the witnesses spoke about the presence of salmon in the river, although salmon and smelts (in actuality, smolts) were recorded as still being at Keighley in 1733 (see above). This leads one to believe that salmon disappeared from the reaches above Leeds during the latter half of the 18<sup>th</sup> century and that the major cause was

impassable barriers and not the ever increasing pollution in the nineteenth century.

As late as 1867, Mr Bartholomew was recorded in the Pollution Commission Report (Para. 7311) as stating that salmon frequently used to come over the dam at Haddlesey (the bottom weir on the Aire), and he believed that they had done so up until the previous year.

The corn miller on the south bank of the river at Castleford, said that up to 1850 he had generally seen salmon leaping at the dam there in October and November, but had never seen them since (Para. 15698 on). These salmon, of course, might have been heading for the River Calder, or might have remained in the river well below Leeds.

A witness from Leeds (Pollution Commission Report, Para. 7736 on) stated that around 1800 the river and becks were very clear and offered excellent fishing, even in the centre of Leeds. In the town there were only scale fish, but two or three miles downstream there were occasional trout, and four miles downstream opposite Temple Newsam, the river abounded with trout and grayling. The witness made no mention of the presence of salmon at that time, only that he had been told that someone had speared one of more than 20lbs around 1756.

Above Leeds, John Holmes, the gamekeeper at Esholt Hall from 1839 to 1867, declared the river at Esholt Hall (below Shipley) as having been full of fish, but that he'd never heard of salmon being there, nor of the Salmon Fishery Commissioners having been there (Para.9505 on).

At Bingley, William Ferrand regularly fished the river from 1817 to 1826, and although noting that the river was beautiful and clear in those years and contained vast quantities of trout, grayling and eels, he makes no mention of salmon (Para.5481 on).

From the foregoing, it would appear that although some salmon were able to reach Castleford up to about 1850, they were not progressing much further up the Aire, although the 44<sup>th</sup> Report of the Yorkshire Rivers Board (Note 8) did mention that they were seen at Allerton Bywater, just upstream of Castleford, as late as 1850. As the Pollution Commission was asking for evidence of the previous state of the river, it is highly likely that witnesses would have mentioned the presence of salmon in their lifetime, if the fish had been present in the river. As mentioned above, the conclusion must be drawn that it was not pollution which initially led to the demise of the salmon, but the erection of the barriers to upstream movement.

In paragraph 16179 of the Pollution Report of 1867, Mr W N Wilkinson, a resident of Castleford and agent to the Aire and Calder Navigation, stated that stopping the discharge of sewage to the river "would be the most desirable thing possible. I do not say that it would clear the river altogether and make our salmon come back, but it would be a very great thing".

Proof of the return of the return of salmon took place in November 2002, when pike angler Colin Haggerty, whilst fishing at Eggborough, a mile or so below Chapel

Haddlesey, caught a 16lb salmon. The fish was photographed by his son, and then returned to the water unharmed. The photograph was sent to the Environment Agency in Leeds and the fish was verified as a salmon.

Other unverified sightings of salmon in the tidal reaches had previously taken place, one of which was recorded around 1930 in the 36th Annual Report of the West Riding of Yorkshire Rivers Board (Note 9), the salmon, about two and a half feet in length and not in healthy condition, having been observed for a considerable time near Carlton Bridge, near Snaith.

The first confirmed salmon sightings in the non tidal Aire in recent times took place when Environment Agency staff inspected film of numerous fish attempting to ascend Knottingley Weir and were able to confirm that some, if not all of the fish, were salmon. The film submitted to the Agency had been taken by K Sunderland and A Tremethick on 1<sup>st</sup> October 2007 and 31<sup>st</sup> October 2007. The following month, the EA caught 8 salmon and 2 sea trout below Chapel Haddlesey Weir, and then a further 2 salmon, a very large brown trout and a flounder, a few days later. The numbers of salmon caught and seen, resulted in the EA's Fisheries Team Leader for the area, confirming that there were probably hundreds of salmon in the lower Aire in 2007.

The sightings in 2007 led to high expectations in 2008 but although leaping fish were seen at Knottingley Weir, they were not in numbers approaching those of the previous year. However, on 27<sup>th</sup> October 2009 expectations were met when, in the space of an hour, K Sunderland witnessed 29 fish leaping at the weir. Due to the distance from the bank to the leaping fish, it was not possible to verify that they were all salmon, but some of those leaping close to the bank were definitely identified as such. Further sightings at Knottingley Weir were made in 2010, 2011 and 2012.

In the years prior to 2007, there had been reports of salmon having been seen in Leeds at Thwaite Mills and at Knostrop Lock Weir. Due to the difficulty in differentiating between salmon and trout, it had not been possible to positively identify the fish, but it is highly likely that some of them were salmon. In addition to these sightings, it was reported that a Leeds angler, Steve Harness, had caught a 5 lb salmon near the Armouries Museum in Leeds whilst fishing for chub and perch (Note 10).

As yet, there are no confirmed reports of salmon above Leeds, and no juvenile salmon have been found in the Aire or its tributaries.

#### **Eel** (*Anguilla anguilla*)

There is no doubt that eels were historically present in the Aire in large numbers, as would have been the case with most, if not all, of the Yorkshire rivers. Although there are not many detailed references to fish species in the Aire, the ones that there are prior to the 1850s, tended to mention eels. Eels appear to have ascended the river to at least as far as Keighley, and probably beyond. As eels were in the river long after obstructions had prevented salmon migration in the 18<sup>th</sup> century, and continued to be there until gross pollution commenced, it would appear that pollution was the cause of the demise of eels in the Aire.

The Reverend Miles Gale's list of species at Keighley around 1700 includes eels, as does the list printed in Thomas Gent's History of the Loyal Town of Ripon in 1733. In the 1858 History of Keighley, the writer does mention the species which are no longer in the river at Keighley, and as he does not mention eels, it might be construed that they were still there in the Keighley area.

A number of references were made to eels in the 1867 Pollution Report, but they suggest that eels had been prevented from ascending the river by the onset of gross pollution. The corn miller at the mill on the south side of the dam at Castleford remarked that the coarse fishing was good up to 1850 and that his brother had caught lots of eels there with a leap (net). (Pollution Commission Report, para.15698 on).

In his statement to the Commission, William Ferrand said that the Aire at Bingley had contained vast quantities of fish, including eels, during the period he had fished there from 1817 to 1826 (Para. 5481 on).

John Holmes, the gamekeeper at Esholt Hall from 1839 to 1867, listed eels as one of the species which had been in the river at Esholt, but then went on to say that in the summer of 1865 all the fish ("eels and everything") were killed by pollution, right down to the Stansfield Estate (at Esholt).

As pollution continued to increase, it is probable that eels did disappear from the Aire during the 1850s and 1860s. There are no further specific records of them being caught by anglers, or by the authorities after that time, other than a 37 inch specimen being found in a pipe at Tong Park, Baildon, around 1920 (Note 11).

Eels were certainly returning to the river by the 1980s, as the writer caught one in the late 1980s on his first fishing trip to Eggborough, below Chapel Haddlesey. The Environment Agency also caught six eels at Chapel Haddlesey in 2009. Other recent records have included a sighting of a large eel below Knostrop Lock by a British Waterways grass cutter in summer 2003 and the capture of them by Bradford No 1 AA members fishing at Beal in summer 2005. It is thought that the report of two eels being seen in a pipe at Esholt STW in the 1990s can more than likely be discounted, as they were probably foreign grass snakes which abound in the area. An employee there once described how he'd seen an "eel" which swam across a sewage lagoon at Esholt, and then made its way up the bank. It is far more likely that he'd seen a melanistic grass snake.

A definite sighting of an eel was made in the mouth of Silsden Beck in August 2005 (Note 12) when an eel, just under a foot in length, was found in a traffic cone which was retrieved from the beck. Further investigation revealed that around 1998, the Environment Agency had stocked two tributaries of the Aire, Silsden Beck and Eshton Beck, with elvers. At the time the question was raised as to whether this eel was an Environment Agency stocked eel or one which had found its own way up the Aire. However, the question may have been answered in April 2006 when an eel, no more than 8 or 9 inches long was seen swimming in the River Worth above Coney Lane Bridge in Keighley (Note 12). This was followed within a couple of days, by a sighting of another eel, about a foot long, by the side of Eastburn Beck at Glusburn.

The eel was dropped by a heron and returned alive to the beck by a bystander. It is thought that the size of the River Worth eel would preclude it from being an elver stocked 8 years previously, and would indicate that eels have returned naturally to the Aire system. The sightings mentioned above were followed by the EA catching an eel whilst electro fishing at the top of Silsden Beck in 2007. Recent records in 2011 include a large dead eel at Rodley Nature Reserve and angling captures of one above Crown Point Weir, Leeds, and another below Saltaire Weir.

Whether eels will return to the Aire in anything like their former numbers is open to conjecture. In recent years the European eel population has plummeted and the number of elvers returning from the Sargasso Sea is said to be as little as 5% of the numbers returning in the early 1980s. The reduction on the East Coast of Britain has been more pronounced than that on the West Coast. A variety of reasons for the fall in numbers have been advanced, among them being global warming affecting sea currents, habitat destruction, a parasite which has been acquired from Japanese eels, and the construction of dams in Morocco. Another possibility is that eels are still suffering from the lingering effects of chemicals such as DDT which were in use in the 1970s.

In order to improve eel populations the EA stocked the Aire at Rodley with 63,000 elvers in March 2007. Even in the early part of the 20<sup>th</sup> century William H Whitaker noted that young eels had been introduced by local angling clubs, probably in the Keighley area (Note 1).

### **Grayling** (*Thymallus thymallus*)

As water quality improves throughout the United Kingdom, grayling populations have increased on a national basis in recent years. The Aire has been no exception to this trend, and grayling have been found to be spreading down the river. Being a fish which requires a high water quality, the grayling suffered badly from pollution and was eventually only found in the Aire above Skipton. In 1891 Johnnie Gray noted that the stretch from Gargrave to Carleton, near Skipton, held a considerable number of grayling (Note 134, and in 1894 the stretch from Eastburn Beck to Keighley was described as including the occasional grayling. A notable specimen was caught by J Preston near Carleton (Skipton) in 2004, weighing in at 2lbs 10oz (1.19 kgs).

In recent years the grayling has been expanding its range downstream from the Skipton area, and since the year 2000, grayling have been caught on a consistent basis by anglers in the Kildwick to Steeton stretch of the river. In the winter of 2009 to 2010, the grayling population in this area had expanded to such an extent that grayling and brown trout were making up 100% of the catches in Keighley Angling Club matches. By January 2013 the Bingley Angling Club was having the same experience at Myrtle Park, Bingley. For match purposes, the brown trout were excluded from the weigh-in.

The fish have continued to spread down the river and since 2004 grayling have been caught on a regular basis in the River Worth between its confluence with the Aire and the bottom weir near Aireworth Road. The Environment Agency caught a grayling below Crossflatts Weir in 2004 and the fish are now thriving much further

downstream. Some of the spread is undoubtedly due to EA stocking which took place in August 2006 when they introduced 1000 grayling below Hirst Mill Weir, Saltaire, and a further 1000 in Myrtle Park, Bingley. The introduced fish were about 5 inches in length. However, as some of the angler caught fish were considerably larger than this, it would appear that much of the downstream expansion has been of natural fish populations. Increasing numbers of grayling are now being caught by anglers at Apperley Bridge and occasional ones as far downstream as the centre of Leeds.

Oumer (a former name for grayling from "ombre" the French name for a shadow) were included in the Reverend Miles Gale's list of fish at Keighley around 1700, but by 1858 the first History of Keighley stated that there were now "neither oumers nor gralings" there. As oumer was the name formerly used locally for grayling, there is some confusion caused by this statement. However, no matter how it is interpreted, it would appear that grayling had gone from the area by this time.

Historically grayling were present much further downstream. William Ferrand included them as being one of the species which were at Bingley in vast quantities during the period from 1817 to 1826, but it is noticeable that John Holmes did not mention them as being at Esholt when he was gamekeeper there from 1839 on. This may have been due to the deteriorating water quality below Shipley. Another witness quoted in the 1867 Pollution Commission Report (Para.7736) stated that around 1800, the Aire opposite Temple Newsam, about four miles downstream of Leeds, abounded with trout and grayling.

#### **River Lamprey (*Lampetra fluviatilis*)**

Thomas Bunker, the Goole naturalist, recorded the migratory river lamprey from the Aire, and also the Ouse, in the 1880s (Note 14). As far as is known, there are no confirmed records of migratory lampreys in the non tidal River Aire. It should be emphasised that it is the records that are missing and probably not the fish. As lampreys are to be found in the other Yorkshire rivers, it may well be that they ascend the Aire to spawn as in times past. Due to lampreys not taking anglers' baits, their presence can remain undetected. As weirs are fitted with fish passes, and water quality continues to improve, it may well be that river and sea lampreys will be found in the Aire.

In February 2008, a local angler fishing in the Aire at Stockbridge, Keighley, caught a pike which then regurgitated a half digested river lamprey (Note 15). Whether the lamprey was a bait previously discarded by another angler, or was the first evidence of river lampreys returning to the Aire remains to be seen.

#### **Sea Lamprey (*Petromyzon marinus*)**

The migratory sea lamprey occurred in the Aire, presumably in the lower reaches, during the 19<sup>th</sup> century (Note 14a).

#### **Brook Lamprey (*Lampetra planeri*)**

The non migratory brook lamprey would appear to have always existed in the Aire catchment. The Bradford Scientific Journal, volume 3, 1910-1912 stated that several small lamperns (brook lampreys from the description) had been reported from the

middle reaches of the tributary River Worth. Mr A Rushworth of Keighley remembers seeing them between Ponden Mill and Oakworth on the River Worth in the late 1950s, and the Environment Agency have also caught them in recent years whilst electro fishing on the Worth, the locations being below Ponden Reservoir, at Providence Lane in Haworth, and at Hermit Hole above Keighley. Large numbers of lampreys have been found at these sites, the fish being found in the mud beneath the roots of trees. Brook lampreys were also seen in 2008 downstream of Ingrow in Keighley.

The EA has also caught specimens in the Aire at Hanlith Bridge, Newfield Hall, Gargrave, Carleton Bridge, Cononley, Silsden Bridge and Cossflatts whilst electro fishing.

The EA also record them as being in Broughton Beck and the Eller Beck , whilst a further recent record of them in Eshton Beck is provided by British Waterways' staff. An old card in Cliffe Castle Museum, Keighley, also mentions a specimen from Cullingworth, presumably from Harden Beck, or a tributary thereof.

### **Barbel** (*Barbus barbus*)

The barbel has been a longstanding source of controversy amongst anglers on the River Aire. The vast majority of anglers wanted barbel to be (re)introduced, whilst a very small minority resisted this measure. The fish is found in all the other West and North Yorkshire rivers, but there is no record of it being historically present in the River Aire. Common sense tells us that the barbel would have been in the Aire, and in fact it could be argued that there is an historic record of its presence in the Aire system. The River Calder is a tributary of the Aire and there is a record from 1775 of barbel in the Calder (Note 16). The incumbent of Mirfield Church at that time included it in a list of the fish produced by the river. The likelihood is that the barbel was present in the lower and middle reaches of the Aire but that nobody actually wrote the fact down. As it was not regarded in England as being a desirable edible fish, it might well have not been thought worthy of mention on some occasions, and being a bottom feeding fish, it would not have been caught by fly fishermen. It is worth mentioning that references to it on the Calder are also extremely limited.

The disappearance of the barbel from the Aire may well have been a combination of pollution and impassable weirs. As far upstream as Skipton and Cononley, the river was affected by pollution. The sulphate of barites which were discharged from the Duke of Devonshire's lead mine at Cononley was thought to have been very poisonous (1867 Pollution Commission Report para. 8141) and the smell from the sewage works and dye works at Skipton was said to be perceptible two miles away.

The barbel is a fish which is highly prized by coarse fish anglers due to the size it can reach and its fighting qualities. A move was made to introduce barbel to the Aire in the vicinity of Bingley in 1980 but permission to do so was refused by Yorkshire Water Authority's Fisheries Officer. This was later amended to permission to introduce 300 male fish below Bingley. Due to the problems in acquiring fish of one sex, the permit was not acted upon.

A further attempt was made to introduce barbel in 1999, but this time the Environment Agency, which had now taken over responsibility from Yorkshire Water, decided that an introduction could not be made as the barbel was not a fish which was native to the River Aire. The national EA policy was clarified in 2003 and it was established that the Agency's policy on native fish relates to whether they are native to the UK, and not to a specific river. Additionally, the presence in the Calder would have been sufficient to say that barbel had been in the Aire system in the past.

It would appear that some unofficial stocking of barbel had taken place over the years as they started to be caught in small numbers. In March 1997 an angler, fishing at Saltaire, hooked and lost an estimated 6 lb barbel. The fish was described by members of Saltaire Angling Association, as being only the third to be seen in the Aire for 40 years (Note 17). Since that time, increasing numbers of barbel have been caught at Saltaire. The Environment Agency caught a couple in 2004 whilst electro fishing below Crossflatts Weir (above Bingley), and have also found them at Saltaire. There have also been reports of them being caught below Armley Mills Weir in Leeds. It is not possible to say where these fish had come from, but they had not been officially introduced. The probability is that they had been introduced illegally over the years by individual anglers, and that improved water quality meant that they were able to breed successfully. The largest known Aire barbel to date weighed 9lb 7oz and was caught at Saltaire in late 2012.

Barbel catches have also been reported by anglers from the river below Knottingley. These fish may have dropped down from the Calder or may have made their way up the river from the tidal section or could possibly be the result of illegal local stocking in the past.

On 26<sup>th</sup> October 2007, the first officially sanctioned and long awaited stocking of barbel into the Aire took place when Saltaire AC, Bingley AC and Keighley AC, put a total of 700 fish into their local waters. The fish, mainly 8" to 10", were introduced below Hirst Mill Weir (200), in Myrtle Park (200), at Steeton Bridge (150) and at Kildwick Bridge (150). In the following November the Barbel Society provided Keighley AC with a further 180 barbel for stocking below Kildwick. All these introductions were welcomed by groups of anglers congregating at the various stocking points along the river.

Subsequent to the initial stocking in October 2007, the EA introduced almost 5,000 smaller barbel at Apperley Bridge, Rodley, Kirkstall, Armley and Thwaite Mills, and further boosted the stocks upstream of Saltaire in 2009 when they introduced a total of 1,500 fish at Hirst Mill, Myrtle Park and Kildwick Bridge. Annual EA stocking continues to take place with about 3,000 per year being introduced at various locations between Kildwick Bridge and Thwaite Mills (Leeds). The stocking scheme is expected to end in 2014 when a total of over 21,000 barbel will have been officially stocked into the river between Thwaite Mills and Kildwick Bridge.

### **Roach (*Rutilus rutilus*)**

Roach continue to be found below Bingley but mainly in the slower stretches of river, particularly above weirs. In the faster stretches, trout, chub and latterly grayling, tend

to be more common. There is a good population of roach above Hirst Mill Weir at Saltaire, and also at Apperley Bridge, and Kirkstall Abbey. From central Leeds downstream, particularly at Castleford, Knottingley and Beal, the numbers greatly increase. Recent fishing matches at Beal have produced some outstanding catches of roach.

One of the main questions on the Aire since the 1980s has been that relating to the disappearance of roach from Skipton down to Bingley. Older coarse anglers look back to the 1950s and 1960s, when there were abundant populations of fish in these areas. However, when questioned about it, it soon begins to become apparent that what they are missing is not fish in general, but roach in particular. Although a fine specimen weighing 2 lbs 10oz 11 drams (1.21 kgs) was caught at Carleton, near Skipton, in 1989, the numbers of roach continued to diminish in that area and they are now rarely seen there.

It would appear that roach were not present in the Keighley area in 1690 when the Reverend Miles Gale produced his list of fish. Nor were they there when his list was amended in 1733 by Thomas Gent. It is unlikely to be an oversight as Gent corrected the previous list by mentioning the additional presence of bulheads, minnows and sticklebacks, but still did not mention roach.

By the mid nineteenth century, the situation had changed dramatically, and there was said to be an abundance of roach in the Keighley area. In *Keighley Past and Present*, 1858, (Note 6) it was suggested that the roach had got into the river via the canal when a gentleman's pond had burst. This may, or may not, have been the case, but it is highly likely that they did well up to the late twentieth century as they tended to benefit from the effects of mild pollution. The writer in 1858, as well as mentioning the increase in roach, also mentioned that grayling had disappeared. This would indicate water quality problems. As those problems alleviated in the late 20<sup>th</sup> century, the roach disappeared and the grayling began to return. The same thing has happened in recent years on the River Calder as the roach above Brighouse have disappeared, and large quantities of grayling and trout have returned.

There are few records in the early part of the nineteenth century, but in the latter part there are various books and newspaper articles to give us information. In 1891, Johnnie Gray (Note 13) mentions catches of more than 20lbs of roach between Carleton, near Skipton, and Kildwick. He also mentions that three anglers, on two successive Saturday half days, killed over a hundredweight (112 lbs) of nothing but roach at Bradley near Skipton. By the 1850s the river below Shipley was suffering from gross pollution, but after that time, fishing catches between Shipley and Skipton are invariably noted as including roach. As mentioned previously, in recent years the number of roach above Keighley is greatly diminished, this being despite the introduction of almost 30,000 roach into the Keighley section of the river from 1975 to 1980. Although small roach are still occasionally caught above Keighley, they rarely occur in fishing match catches and, other than a single fish at Cononley in 2005, have not been found in recent EA surveys of that part of the river.

Surprisingly, there are records of roach being present in the grossly polluted stretch of

river below Esholt during the first half of the 20th century. The 72nd (1938) Annual Report of the Yorkshire Fishery District (Note 18) records that a report had been received that anglers were catching good quality roach below Castleford Weir. The 74th Annual Report (1940) mentions that fish were being netted below Cardigan Weir (Note 19). This is presumably a reference to Armley Weir which is in the Cardigan area along Kirkstall Road in Leeds. Although roach are not specifically mentioned, it is assumed that they were probably the fish concerned. A further reference to coarse fish in the grossly polluted reaches, is made in the West Riding of Yorkshire Rivers Board 43rd Report for the year to 31st March 1938 (Note 20), which mentions that coarse fish had been seen in the Aire near Knottingley in August 1937, the third year in a row in which this had happened. On all occasions, the sightings had taken place when the river was low and clear after a fairly long spell of dry weather.

**Rudd** (*Scardinius erythrophthalmus*)

A rudd was caught by the Environment Agency in the tidal Aire below Chapel Haddlesey Weir in 2009. No other catches of rudd have been brought to the author's attention.

**Minnow** (*Phoxinus phoxinus*)

The minnow is the most numerous fish of the River Aire, particularly above Shipley. Although still present in their millions, numbers do seem to have declined somewhat. Anywhere from Gargrave to Leeds, they are still regarded by anglers as something of a pest. When the Aire in the region of Cononley still suffered from mild pollution in the 1950s and 1960s, the minnows were a sight to behold. Vast shoals swimming alongside the bank were highly visible. In the late spring and early summer, minnows still congregate in huge numbers at certain spots, including Saltaire, the shallows below the Dowley Gap Aquaduct (below Bingley) and in the mouth of Eastburn Beck. Minnows were also to be seen in the bottom half mile or so of the Bradford Beck in the years following 2000, but they then disappeared from the beck as the trout population increased. In early May 2009, the Bradford Beck suffered a very serious pollution incident which wiped out all the fish in the beck below Bradford. The EA retrieved 1300 dead trout from the beck following this incident. Within three months, large numbers of minnows had reappeared in the lower beck around Shipley Station.

Another notable occurrence was seen to take place at Saltaire Weir during exceptionally warm weather around the end of June 2009. Minnows were seen to be ascending the weir over a number of days, and were counted actually successfully completing the ascent at a rate of between 280 and 350 per hour. Huge numbers of minnows were assembled below the weir on the left bank side, and the more upstream fish leaped on to the weir before heading to the right to form a foot wide line of fish. They then swam up the weir, backs out of the water, making numerous stops for a rest. The event continued for hour after hour, and day after day for almost a week. Similar displays were seen over the following two years during periods of hot weather. In 2011, large numbers of minnows were seen ascending the weir as late as 30<sup>th</sup> September (Personal observations by K Sunderland).

Minnows have also been seen making unsuccessful attempts to leap the weirs at Shipley, Bingley and Crossflatts, as well as on Morton Beck.

Environment Agency electro fishing records for 2005 and 2006 show that minnows were present at all locations surveyed between Carleton Bridge, near Skipton, down to Thwaite Mills, below Leeds.

Anglers' reports from a variety of places in 2012 indicated that the amount of minnows in the Aire had diminished somewhat. This may be a temporary phenomenon or possibly the start of a long term trend.

**Stone Loach** (*Barbatula barbatula*)

In the Aire, the stone loach is to be found in habitats similar to those frequented by the minnow. The 2007 survey by the EA found stone loach at all locations surveyed between Carleton Bridge and Thwaite Mills.

**Bullhead** (*Cottus gobio*)

The bullhead is found at various locations all the way down the river from Hanlith Hall, near Malham, down to Thwaite Mills below Leeds. There are also large numbers of them in the River Worth and its tributaries. The likelihood is that they are also present in the becks which flow into the Aire.

**Three-spined Stickleback** (*Gasterosteus aculeatus*)

The stickleback would appear to have always been a resident of the Aire, being mentioned as such in almost all records of Aire fish. Even through the darkest days of gross pollution downstream of Shipley, the river was described as containing sticklebacks. They would have probably been restricted to oxygenated stretches below weirs, and places where rare unpolluted streams ran into the river.

**Bleak** (*Alburnus alburnus*)

There is no mention of bleak in old River Aire records. However, they do appear to be entering the river system from the River Ouse, and an angler, C Haggerty, mentioned large shoals of bleak in the tidal section below Chapel Haddlesey in 2004 and the Environment Agency captured one there in the same year. In 2005 there were reports of them further upstream, an angler catching one at Beal and the Environment Agency electro fishing one at Castleford. This was followed up by a further nine being electro fished at Castleford in 2009.

**Pike** (*Esox lucius*)

Thomas Gent's list of fish in the Aire at Keighley in 1733 included pike, although the article did go on to say that they had first arrived in the river when Mr Tempest's fish pond at Broughton had broken into the river. Miles Gale's list of 1690 did not mention pike.

The 1937 Annual Report of the Naturalist (Note 21) mentioned that on 20th October 1936, a large pike weighing 11.75 lbs had been caught in the Aire, near Skipton, and that it was thought to be the largest recorded for a great number of years. This is noteworthy as the size of the pike was not very large. The Skipton AA record, a pike caught in 2005 weighing 22lbs 8oz, is almost double this weight. An even larger pike weighing some 27 lbs was recorded by another angler whilst fishing at Skipton.

The Environment Agency's fish surveys for 2004 and 2005 recorded good numbers of pike in the upper section of the river from Carleton Bridge (near Skipton) down to Crossflatts (near Bingley), and then at the lower end of the river from Castleford down to Chapel Haddlesey. They did not record any in the long stretch in between, although they have been seen from Bingley down to Apperley Bridge on a regular basis.

Large numbers of pike are also known to be present in the tidal Aire below Chapel Haddlesey Weir.

### **Chub** (*Leuciscus cephalus*)

Very much a common fish of the River Aire, the chub is in evidence all the way from Skipton to below Castleford. The chub is well suited to the river and no doubt takes advantage of the food source provided by shoals of minnows in the middle and higher reaches. The chub was omitted from the Reverend Miles Gale's list of fish at Keighley in 1690, but was included in Thomas Gent's listing in 1733, so it is likely that Miles Gale's omission was due to an oversight. John Holmes, gamekeeper at Esholt did mention them there in the 1840s before the era of gross pollution. Further evidence of their abundance at Esholt at that time comes from Mr Henry Whitaker's diary of 4th June 1842 (Note 22), where he recorded that despite a thin film of gas-tar on the surface of the river, great shoals of chub were still to be seen. Although chub, as all other fish, disappeared from the Esholt area after pollution took its toll from 1850 on, they continued to thrive from Shipley up to Skipton, and were mentioned in most lists of fish for that area in the late 19th century onwards.

Historic references further down the river are restricted as chub tended to be included with other coarse fish and referred to as scale fish. A witness from Leeds stated in his evidence to the Pollution Enquiry (para.7764 of the Report), that around 1800, he had caught 27 lbs of scale fish (described as chub and dace) in 3 hours whilst flyfishing between Castleford and Leeds.

Although their numbers seem much diminished in recent years, occasional very large chub are still present in the river between Cononley and Steeton. In the late 20<sup>th</sup> century some outstanding fishing match catches were recorded. The most impressive of these took place in October 1988, just above the Eastburn Beck confluence below Kildwick, where N Chaffer had a catch of 115 lb 13 oz of chub. The catch comprised of 48 fish, the largest being about 4 and a half pounds. Another notable all chub catch took place in 2004 above Steeton, when a match was won with 35lbs of chub, consisting of only seven fish.

The Skipton AA record chub was caught in 2000 and weighed just under 6 lbs. It is interesting that chub catches in the late nineteenth century of lower weights were thought noteworthy, Johnnie Gray mentioning a fish of 3 lbs 15 oz which had been caught below Skipton in the 1890s.

Chub were successful above Shipley throughout the 20th century, and in July 2007 an angler had a catch at Saltaire which comprised of 38 chub and 17 trout, the total

weight being over 100 lbs (Note 23). As water quality has improved, chub have been successful below Shipley. Some of the chub might have come from the restocking which has been done by the Environment Agency, but most will be the result of natural spawning of native fish. In the summer of 2005 a huge shoal of chub was to be seen in the shallow water below Armley Weir. Chub also make up the bulk of the catches in the faster water, downstream of Thwaite Mills (Leeds) and are found in large numbers as far downstream as Fairburn and beyond.

**Dace** (*Leuciscus leuciscus*)

Dace are to be found in the Aire at various locations from Carleton Bridge downstream to Castleford. They are numerous from Dowley Gap (Bingley) to Saltaire, at Apperley Bridge, Kirkstall, central Leeds, and Thwaite Mills.

**Perch** (*Perca fluviatilis*)

Other than in the parts of the river which suffered from gross pollution at the time, perch would appear to have been present all along the river downstream of Skipton, albeit in small numbers. The early 18th century records show them at Keighley. A report in the Bradford Telegraph around 1885 recorded that Mr Sutcliffe Rhodes of the Bradford Eagle Angling Club, whilst fishing below Skipton, had caught 3 perch weighing 2lbs 2oz, 1lb 6oz, and 2lbs 13oz. Mr Rhodes ceased fishing at 1PM, and at 4PM, having been out of the water to this time, the perch were displayed alive and “kicking” on the tables of the Eagle Hotel at Bowling in Bradford.

Writing in the early years of the 20<sup>th</sup> century, William H Whitaker regretted that the perch was gradually disappearing from the Aire (Note 1).

The current Skipton AA record is slightly over 2lbs and dates from 1985. More recently, perch have been seen at Dowley Gap, Bingley, and are regularly caught in large numbers in the Leeds area.

The Environment Agency's fish surveys for 2004 and 2005 did not reveal any perch above Leeds. However, from Leeds down their numbers continued to increase and they were recorded in large numbers at Castleford and Chapel Haddlesey.

**Brown Trout** (*Salmo trutta*)

In the higher reaches of the river from Malham to Gargrave, the brown trout is the dominant fish. There are also healthy populations of minnows and bullheads. As water quality below Skipton has improved, it is perhaps surprising that trout have not quite increased their numbers as would be expected. A number of the becks have weirs at, or near, their confluence with the main river, and this may restrict the spawning grounds for trout, which often use small streams for this purpose. The weirs have been introduced for a variety of reasons, some being to prevent flooding. Tributaries which are currently cut off, or partially cut off, from the main river in this way include Broughton Beck, Eller Beck, Cononley Beck, Eastburn Beck, and Eshton Beck.

Prior to the mid 19th century, trout were found all the way down the river to Leeds.

William Ferrand observed that the river at Bingley in the 1820s contained vast quantities of trout etc, and a member of the Busfeild family remarked on the great quantities of trout there at that time. The record for a rod caught fish of that era belonged to Mr Crompton Junior who took a 7lb trout at Esholt in June 1821 (Note 24). Trout of 6 lbs and 7 lbs were also taken from below Steeton Bridge by Mr Adam Ellison. In 1800 the river at Temple Newsam, below Leeds, abounded with trout, but 2 or 3 miles upstream of Leeds, the trout was said to be an occasional fish.

After the 1850s, trout was still the main fish above Skipton, but numbers declined from Skipton to Shipley. The trout were still there but coarse fish became the dominant species, and downstream of the confluence with the River Worth at Keighley the number of trout was very restricted. There are conflicting reports of the trout population at Bingley. Mr Laycock in his evidence to the Pollution Commission in 1866 saying that he'd been told that the river there was almost lifting with trout, whereas a member of the Ferrand family said in the 1870s that over the previous twenty years, the pollution had increased and the joy of fishing ceased. It is true to say that by the 1890s, when Johnnie Gray was commenting on the fish populations, that there was little mention of trout below Keighley. Above Keighley, huge stocking of trout took place, Johnnie Gray remarking on 8000 Loch Leven trout being introduced in 1891, 18000 in 1893, and that this stocking was taking place for a number of years. It is thought that the stocking took place above Carleton, a mainly trout fishery, rather than below where coarse fish predominated.

Trout have now returned to all reaches of the river above Leeds, and even below on suitable stretches. They tend to dominate where the river is fast moving and relatively pollution free. More and more trout are to be seen in the river in places like Saltaire, Esholt and Apperley Bridge, but the really remarkable thing about the trout is not their numbers, but their size. The Skipton AA record of 3lbs 9oz 8drams stood from 1958 until 2005, but fish far larger than this are now caught on a regular basis further downstream. In the Bingley area, a 4lb fish would not be particularly unusual, and in Leeds, fish have been caught up to 9lbs. The largest trout recorded at Bingley was a fish of seven and a half pounds which was caught in Myrtle Park by Brendan Bailey in 2009 (Note 25).

Environment Agency personnel are of the opinion that the trout in Leeds have not been born there, but have travelled downstream, presumably in search of feeding opportunities, and then become trapped below the weirs. Every autumn, trout can be seen leaping at the weirs at Crown Point, Knostrop Lock, Newlay Bridge, Rodley, Saltaire and Hirst Mill, whilst trying to ascend. It is thought that the trout get up the lower weirs such as Shipley and Bingley without a great deal of difficulty, which accounts for why they are not seen leaping there.

### **Sea Trout** (*Salmo trutta*)

The lack of references to sea trout in the Aire in historical documents is something of a mystery. It may be that there was no distinction made between brown trout and sea trout. On the other hand, it may be that the references made to smelts, may be to sea trout. Smelt was an old Yorkshire word for a smolt (juvenile salmon or trout), but it is possible that it also encompassed adult sea trout. It would have been most unlikely

that sea trout were absent from the Aire in the days when salmon regularly ran the river.

The first record of an Aire sea trout in modern times, occurred when the Environment Agency caught two in the tidal stretch below Chapel Haddlesey Weir in November 2007. There have also been reports of sea trout in the Calder but no proof has been forthcoming.

The first record of a sea trout in the non tidal Aire, documented by a photograph, took place on 24<sup>th</sup> January 2010 when Bingley angler, Carl Chadwick, caught a 23 inch specimen in Roberts Park, Saltaire. Although no scales were taken from the fish, it was confirmed as a sea trout by game anglers and Environment Agency employees with great experience of sea trout on other rivers.

### **Rainbow Trout** (*Oncorhynchus mykiss*)

Rainbow trout have been in the River Aire for many years but have never been present in significant numbers. William H Whitaker's article in the Bradford Scientific Journal Vol. 2 1907 – 1910 (Note 1) stated that rainbow trout were occasionally captured in the Aire, and this is still the case. Whitaker described them as being introduced by angling clubs, whereas these days their presence is usually attributed to them escaping from a fish farm or a stocked lake or reservoir.

Over the last year or two, a number of rainbow trout were said to have been taken from the river above Castleford, near the confluence with the Calder.

### **Gudgeon** (*Gobio gobio*)

Gudgeon were included in the list of fish at Keighley in both 1690 and 1733. They are now present all along the river downstream of Skipton. They are definitely one of the species which have returned naturally to Apperley Bridge and good sized specimens are caught there.

At a Yorkshire Water seminar in February 1988 (Note 26), the Fisheries Manager described gudgeon as being present below Skipton, at Crossflatts, Knostrop, and very common below Skelton Grange power Station Weir. The fish surveys for 2004 and 2005 showed Castleford as having the largest numbers of gudgeon.

### **Common Bream** (*Abramis brama*)

There are no historic records of bream in the River Aire. Perhaps, they were ignored like the barbel. However, there is no doubt that bream are present now, but on a somewhat patchy basis.

Shoals of bream are said to be in the river above Stockbridge, Keighley, have been seen opposite Marston's Nature Reserve below Shipley and between Crown Point and Knostrop Lock in Leeds. All the stretches mentioned are slow flowing, and it is probable that there are large bream in such areas all along the lower stretches of the Aire. It is noticeable that the EA tend not to catch bream whilst electro fishing but they did catch two in the tidal stretch below Chapel Haddlesey in 2005.

A noteworthy catch took place in late January 2010, when a local angler, Carl Chadwick, caught a 5 lb 11 oz bream in Myrtle Park, Bingley.

**Silver Bream** (*Abramis bjoerkna*)

As most anglers do not distinguish between silver bream and small common bream, records of silver bream are very limited. However, the Environment Agency have caught them in the tidal Aire at Chapel Haddlesey on a couple of occasions over the last few years.

**Common Carp** (*Cyprinus carpio*)

There appears to be a few small populations of carp in the River Aire. The writer has seen a carp at Cottingley Bridge, near Bingley, and another above the Dark Arches in Leeds, and has had reports of carp around Crown Point in Leeds and also in the Knottingley area where they can be found to almost 30 lb in weight. Not one of the more prolific species in the river, but still there in limited numbers. There is no mention of carp in the Aire in historical records.

**Tench** (*Tinca tinca*)

Not a fish which is usually associated with the River Aire. However, the EA have caught three in the Aire at Castleford so there is obviously a population of tench there. From time to time, angling clubs have introduced tench to the river, but without any appreciable success.

**Ruffe** (*Gymnocephalus cernuus*)

The Reverend Miles Gale mentioned ruffe in his list of fish in the Aire near Keighley in 1690. By 1858, it was said to be no longer in the Aire. However, in the early 1900s W H Whitaker of Utley, near Keighley, stated that in the deeper parts of the Aire, the ruffe was the commonest quarry of the worm fisher. Ruffe are said to be still present in the river about Keighley, but are only rarely caught by anglers.

In 1881, Clarke and Roebuck stated that ruffe were previously found in the Lower Aire but had been exterminated by pollution.

**Flounder** (*Platichthys flesus*)

Flounder are to be found in the tidal Aire. C Haggerty caught one below Chapel Haddlesey Weir in May 2004 and the EA caught another there in November 2007. Prior to the tidal limit being moved downstream to Chapel Haddlesey in the 18<sup>th</sup> century, flounder would probably have been found as far upstream as Knottingley, and may well be again if a fish pass is put on Chapel Haddlesey Weir.

**Smelt** (*Osmerus eperlanus*)

Clarke and Roebuck mentioned in their Handbook of Yorkshire Vertebrata, 1881, (Note 27) that the smelt was then common in the Humber Estuary and abounded in the Ouse up to Naburn Lock. Given recent improvements in water quality, it is to be expected that the smelt will return to the Aire up to the tidal limit at Chapel Haddlesey. The smelt is a separate species and should not be confused with salmon smolts which used to be referred to locally as smelts.

As yet, there are no known records of smelt in the River Aire. However, in summer 2009 a young smelt was caught when Hull University surveyed the tidal ponds which the Environment Agency had created on the River Aire at Airmyrn. The small size of the smelt probably indicates that there may well be a spawning population of these fish in the lower Aire.

### **Common Sturgeon** (*Acipenser sturio*)

The only known record of a sturgeon in the River Aire occurred at Airmin on 24<sup>th</sup> July 1855 when a 7ft (213.36 cm), 67lb (30.39kg) specimen was shot in the river and sold in Goole at 6d. per lb. (Note 27a). Other sturgeon would have most likely entered the river as occasional visitors prior to the onset of pollution, some probably going as far upstream as Knottingley, the tidal limit before Chapel Haddelsey Weir was constructed.

The common sturgeon can grow up to three metres in length and weigh over 200 kg. Its size would tend to make it noticeable in rivers but, even so, only thirteen sturgeon were seen or caught in Britain during the twentieth century and of these occasions, only three were in England (Note 28).

Although the sturgeon is not recorded in the Aire, it has certainly been found in other Yorkshire rivers. In 1884 a sturgeon was netted in the Wharfe at Kirkby near Tadcaster (Note 29). This specimen, seven feet three inches in length and weighing upwards of 12 stones (168 lb), was preserved and can be currently seen on display in the Doncaster Museum (as per C A Howes). Prior to the erection of dams and weirs, sturgeon were recorded as far upstream as Boroughbridge on the Ure and Arthington on the Wharfe (Note 27). A minimum of a dozen were recorded in the River Don between 1824 and 1871. The largest of these fish was nine feet long and weighed 127 kg. (Note 30).

### **Burbot** (*Lota Lota*)

The burbot is believed to now be extinct in Britain, the last sighting having been at Cambridge in 1969. There are no known records of the burbot in the Aire but it was certainly present in the sluggish lower reaches of other Yorkshire rivers in the 19<sup>th</sup> and 20<sup>th</sup> centuries. In 1881 Clarke and Roebuck made mention of them being relatively common in the Hull, Lower Derwent, Whiske, Foss, and the Ouse below Naburn (Note 27).

### **Crayfish**

#### **American (Signal) Crayfish** (*Pacifastacus leniusculus*)

Following the finding of the claw of a signal crayfish by Environment Agency employees at Silsden Bridge in 2004, plus reports of their presence by anglers, the Environment Agency carried out trapping for them there in June 2005. Three traps were set on a Friday night, and when they were opened the next day, they were found to contain between 15 and 20 specimens. This was the first official confirmation that this species was living in the River Aire (Note 31). The EA carried out further trappings elsewhere on the river but they did not reveal further crayfish. More recently, signal crayfish have been found in the Eller Beck near Skipton Castle and there have been possible sightings in the River Worth, Eastburn Beck and at Bingley.

One of the theories as to how the signal crayfish had arrived in the Aire was that anglers might have been using them as bait. Another more likely possibility is that signal crayfish have been transferred from the River Wharfe by a member of the public. Signal crayfish have been abundant in the upper Wharfe for a number of years and a member of the general public would probably have no idea that the crayfish were foreign ones, nor would they realise the possible ecological harm which could arise from their actions.

There are a number of reasons why signal crayfish could be harmful to the ecology of the river. One is that they carry a plague to which the native crayfish has no resistance, another is that they bully the native crayfish out of their habitat, and thirdly that they eat the eggs of fish. They are said to be able to colonise a river downstream at about a kilometre a year. Reports from Silsden suggest that there are literally hundreds of signal crayfish there and although many of them are no more than a thumb nail in size at the moment, on average they will be expected to reach a size of six inches or more. It is still to be seen whether the river's other predators are able to keep their numbers in check, or whether they will come to take a dominant position in the river's ecology.

#### **Native (White Clawed) Crayfish (*Austropotamobius pallipes*)**

The native crayfish still inhabits the upper Aire above Gargrave, and also Eshton Beck, Harden Beck, the Wyke Beck and Meanwood Beck. In comments upon the distribution of crayfish in 1937, the Naturalist magazine mentioned that crayfish had been seen in the upper reaches of the Aire and also in the Otterburn Beck (Note 21). It would appear that it disappeared from other areas of the catchment due to pollution. However, it may be more widespread than thought as little work has been done to locate it.

In Keighley Past and Present, 1858, (Note 6) it was stated that some crayfish were present in the Keighley area, and that they had arrived there after having been introduced by the Garforths into a small brook near Steeton.

The crayfish is included in the species which William Ferrand described in the Bingley area of the river when he knew it from 1817 to 1826 (section 5481 on, Pollution Commission Report of 1867). The 19th July 1884 edition of Angling in Yorkshire (Note 32) also contained the following "There are, or were until a recent period, some of the best specimens of the common crayfish in England in the Aire, in the immediate vicinity of Saltaire and Bingley. The commonest way of catching them, and that now or formerly employed in the Aire, is by enclosing a piece of old meat, which has possibly been rejected by all the dogs in the parish, in a bundle of twigs, which are sunk in the river all night, and then pulled quickly ashore in the early morning". The same article stated that crayfish were not scarce in Meanwood Beck in Leeds.

It may well be that the native crayfish will recolonise the area around Bingley, now that water quality has greatly improved. However, it remains to be seen what effect the recent introduction of the American crayfish at Silsden will have.

## **Mammals**

The improved water quality and fish populations of the Aire have also been of benefit to various piscivorous mammals.

A report in the Pontefract and Castleford Express of 25<sup>th</sup> January 2007 mentioned that numerous residents of Lock Lane in Castleford had seen a seal in the river there on the previous Thursday.

Another mammal visitor, which is often seen by Environment Agency employees and other workers on the tidal Aire, is the harbor porpoise. The Goole and Thorne Courier of 11<sup>th</sup> March 2008 reported that David Chandler of West Cowick had seen two porpoises swimming near Carlton Bridge, Snaith, on one day in the previous week. In 1907 it was noted by Grabham that porpoises had been shot in the Aire as far inland as Chapel Haddlesey (Note 33).

Otters, although rarely seen, do not appear to be uncommon above Leeds. Otter spraints and tracks have been found at numerous locations on the river and its tributaries.

## **Future Progress**

Most fish species in the River Aire are expected to continue to benefit from increasingly better water quality, removal of barriers to movement and other habitat improvements. The future looks particularly bright for migratory fish such as salmon, sea trout, eels, sea and river lampreys and non migratory fish such as grayling and barbel. Other coarse fish should also do well in the slower reaches of the river.

Implementation of the Water Framework Directive will probably take much longer than anticipated but the eventual benefits to fish stocks and associated wildlife should be great. Anglers and conservationists in the Aire Valley should be able to be confident that the improvement to the River Aire is set to continue.

## **The author**

The author is a life member of Bingley Angling Club, a founder member of the Aire Rivers Trust and has lived most of his life in the Bradford area of the Aire Valley. He is also a member of the Aire Action Leeds Planning and Policy Committee where he has pursued the improvement of fish passage on the Aire for a number of years.

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25) Newspaper article and photo, Telegraph and Argus, 7<sup>th</sup> August 2009.

26) Dr D J Shillcock, Yorkshire Water. "*Water Management in the Aire Catchment*", page 43. (Yorkshire Water Library).

27) Clarke and Roebuck, *A Handbook of the Vertebrate Fauna of Yorkshire, 1881*, pp 103, 104, 119.

27a) Goole & Marshland Gazette 24<sup>th</sup> July 1855

28) Roger Handford, section on common sturgeon in *Freshwater Fishes in Britain* (2004), page 50.

29) Angling in Yorkshire, 5<sup>th</sup> July 1884. (Keighley Library Archives BK 119/2).

30) Christopher J Firth MBE, *Domesday to the dawn of the new millennium*, Appendix 7 Sturgeon in the River Don (1997).

31) Newspaper article – "Killer crayfish are found", Telegraph & Argus, 21<sup>st</sup> June 2005.

32) Angling in Yorkshire, 19<sup>th</sup> July 1884. (Keighley Library Archives BK119).

33) C A Howes, *The Harbour Porpoise in inland water bodies in Yorkshire*, The Naturalist, October – December 2008 (No.1067), pp 116/117 (Leeds Library).

## Appendix 1

The only angling club which is known to specifically keep records for the River Aire is Skipton AC. Their records for the local reaches of the river are as follows.

### Skipton AA Records for the River Aire

	Year	Kg		Angler
Brown Trout	2007	2.270	5lbs 0oz 0drams	J Rushton
Dace	1976	0.432	0lbs 15oz 4drams	E Ramsbotham
Perch	1981	0.920	2lbs 0oz 6drams	M Cockshott
Rainbow Trout	1988	1.690	3lbs 11oz 8drams	A Pinder
Roach	1989	1.210	2lbs 10oz 11drams	J W Preston
Bream	1994	2.430	5lbs 6oz 0drams	M Cockshott
Chub	2000	2.700	5lbs 15oz 4drams	G Heath
Grayling	2004	1.190	2lbs 10oz	J W Preston
Pike	2005	10.20	22lbs 8oz	R Preston

