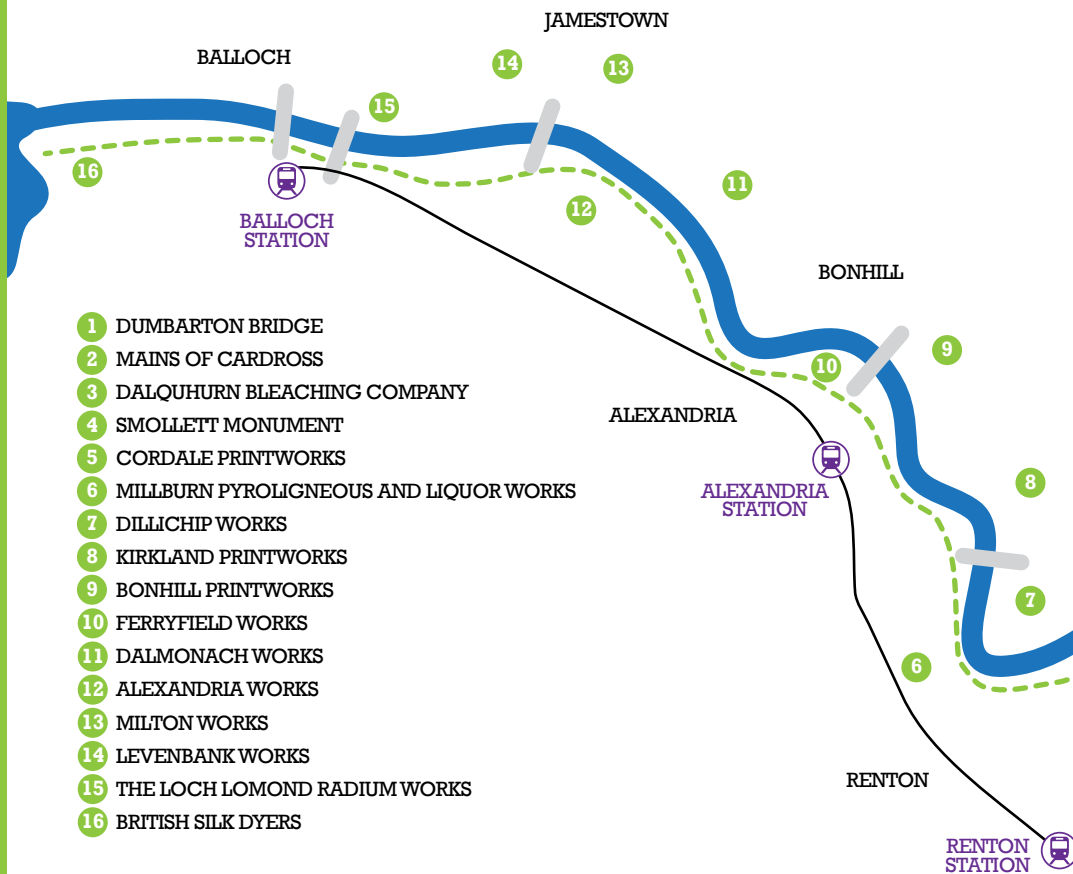




The River Leven Heritage Trail





“On Leven’s banks, while free to rove,
 And tune the rural pipe to love;
 I envied not the happiest swain
 That ever trod th’ Arcadian plain.”

Tobias Smollett

The River Leven Heritage Trail

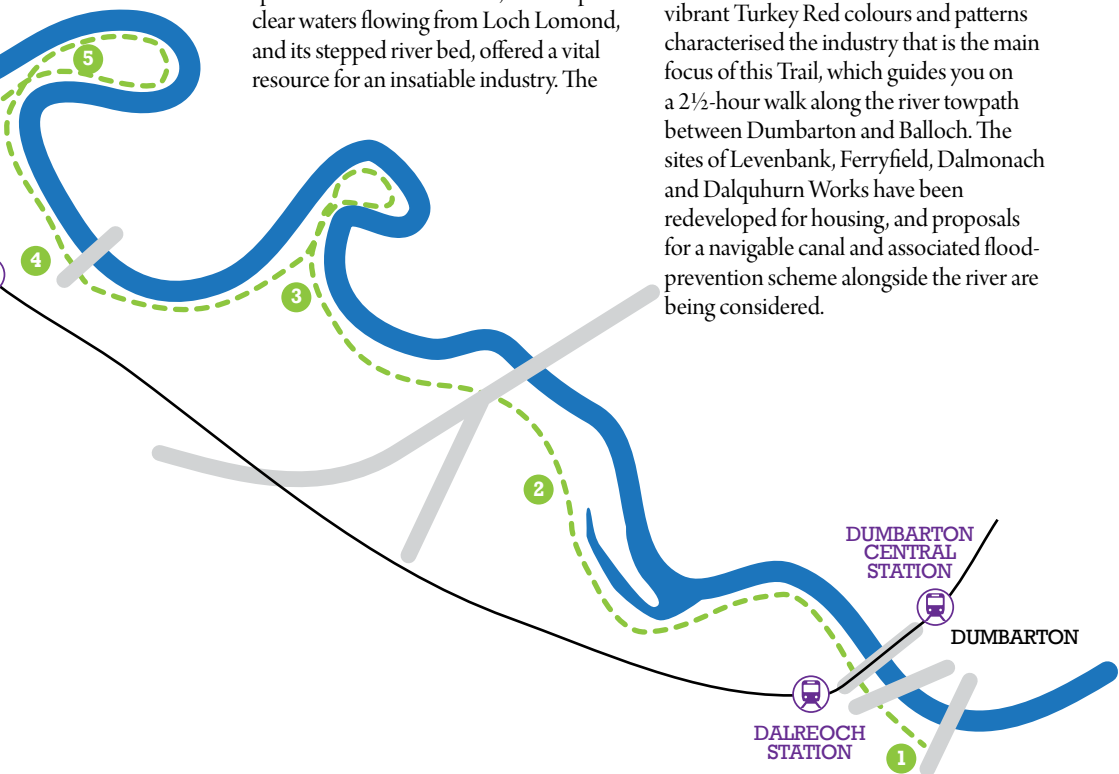
The River Leven from Dumbarton to Balloch was once one of the most beautiful valleys in the country, romanticised in song and poetry (like Tobias Smollett's "*Ode to Leven Water*" opposite).

Despite its exploitation by the textile dyeing and printing industry, we can still enjoy the natural heritage of this important river, which promises unexpected wildlife encounters.

The name 'Leven' is derived from the Gaelic 'Leamhan', meaning Elm Bank, and today the river between Dumbarton and Dalquhurn still evokes a hint of lush splendour. The River Leven, with its pure clear waters flowing from Loch Lomond, and its stepped river bed, offered a vital resource for an insatiable industry. The

river was the focus of a huge textile industry which began before the Jacobite Rising and the Industrial Revolution, and which lasted for over 200 years. Sadly, little physical evidence survived the demise in 1960 of one of the greatest industries of Europe.

At its peak, in the 1880's, over seven thousand people – from top-grade engineers, designers, printers and chemists to exploited labourers, women and children – worked among the industry's 27 'stalks' or chimneys. In one year, 165 million yards of cloth and 20 million pounds of cotton yarn were dyed and printed. The world-famous vibrant Turkey Red colours and patterns characterised the industry that is the main focus of this Trail, which guides you on a 2½-hour walk along the river towpath between Dumbarton and Balloch. The sites of Levenbank, Ferryfield, Dalmonach and Dalquhurn Works have been redeveloped for housing, and proposals for a navigable canal and associated flood-prevention scheme alongside the river are being considered.



1 *Dumbarton Bridge*

The walk starts on the towpath at Dumbarton Bridge (Listed 'B'), built in 1765 by John Brown. On the opposite bank we pass Dumbarton Health Centre on the site of the 1777 Dumbarton Glassworks and the later Denny Engine Works. Before the embankments were established in the 1850's, the meandering Leven's flood-plain included Broadmeadow and parts of the town centre.

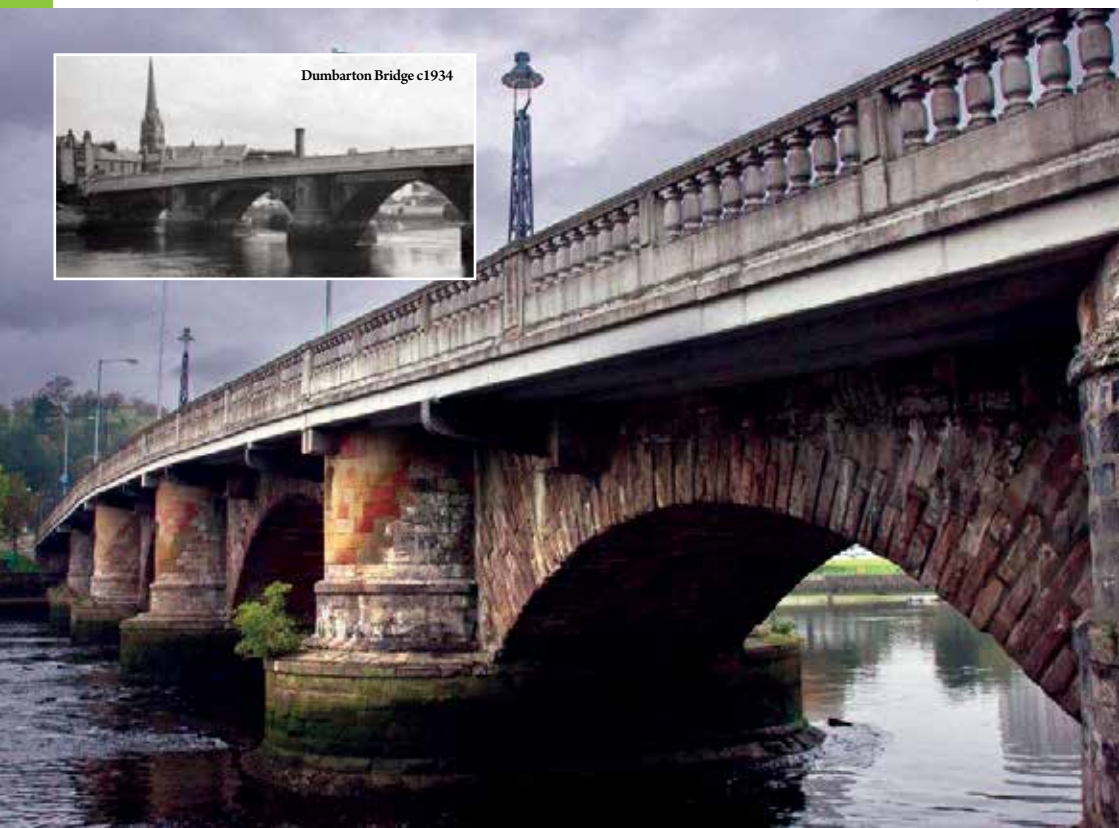
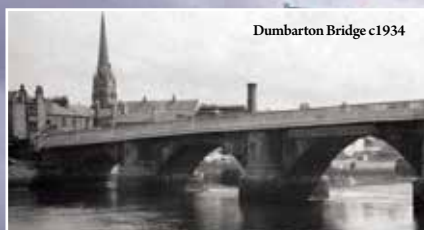
Second fastest river in Scotland, the Leven soon takes on a quiet, rather sluggish temperament as we walk northwards. Here the river opens up to the Leven Marshes, where the fresh waters of Loch Lomond meet the salty tides of the Clyde. These sprawling brackish waters create a unique swamp and marshland habitat of outstanding natural importance, and represent

one of the best wildlife sites in the Leven Valley. Popular with anglers, the river is a vital corridor between Loch and open sea for salmon and sea-trout, and a haven for feeding birds, otters, bats and insects. Look out also for the large red damselflies, common blue dragonflies and peacock butterflies on the tall, yellow tansy flowers.

2 *Mains of Cardross*

Half a mile upstream of Dalreoch, nearing Dalmoak, we are tantalisingly close to the uncertain site of Mains of Cardross. This was where King Robert The Bruce, hero of the First Scottish War of Independence (1296-1328), built his long-vanished manor-house, and where he died on 7th June 1329. Look out for the blue interpretation panel giving you more information.

Below: Dumbarton Bridge present day





Dalquhurn Bleaching Company



Smollett Monument

3 Dalquhurn Bleaching Company

Initially, open-air bleach-fields established in 1715 at Dalquhurn relied on the summer-time action of the sun on soured milk, but the notorious Scottish weather made it difficult to emulate the success of, or compete with, Dutch rivals. Government subsidy ensured the eventual success of the Dalquhurn Bleaching Company of Walter Stirling and Archibald Buchanan. Twelve acres of bleach-fields were sheltered by beech hedges and irrigated by canals from the river. These lades were used in later years to provide water power for steam boilers, and to contribute to the development of sophisticated chemical processes. In 1897 Dalquhurn became one of six combined works forming the United Turkey Red Company Ltd (UTR). Dalquhurn was largely closed in 1942, and UTR as a whole collapsed in 1960.

4 Smollett Monument

Rounding Dalquhurn Point and approaching the village of Renton to the left, we can see the Tuscan column of the Smollett Monument [1774] by the roadside. This commemorates the birth at the nearby Dalquhurn Farmhouse in 1721 of Tobias Smollett, regarded as one of the originators of the English novel style.

5 Cordale Printworks

Further upstream at the river's loop, originally known as Heron's Point, was Cordale Printworks, opened by William Stirling & Sons in 1770. From its inception, Cordale was a calico-printing works. Sycamore blocks were hand-carved with selected sections of each pattern, then repeatedly hand-printed, changing dyes and blocks as required. In the 1780's, engraved copper plates and cylinders were first used, enabling faster machine-printing. A two-colour machine was introduced at Dalquhurn in 1814 and a five-colour machine at Cordale in 1846; many finishing processes were also undertaken on site. Alexander Wylie, whose father had been a colour-mixer, became sole proprietor in 1878 (he was also secretary of the Renton Football Club World Cup-winning team of 1888, and later became a Liberal-Unionist MP). Along with Dalquhurn Works, Cordale became part of the UTR combine in 1897. A walk around Cordale and Dalquhurn Points can offer a worthwhile chance to watch the goosander rear her young, or spot a heron competing with local fishermen.

Cordale Printworks



6 Millburn Pyroligneous and Liquor Works

By the railway line, above the Vale of Leven Academy and Millburn Sensory Gardens, lay Millburn Pyroligneous and Liquor Works, established by the Turnbull family in the early 1800's to supply Dalquhurn and Cordale. As the name suggests, it produced dyeing liquors distilled from wood, and was one of several ancillary industries (block-makers, copper-works, engravers and colour manufacturers) supplying the industry. Millburn Works survived the arrival of the Dumbarton to Balloch Railway in 1850, and became part of the UTR combine in 1897, but closed a few years later. The Turnbells also owned the Pyroligneous Acid Works at Balmaha, and a similar wood-acid works at Millburn, in New York State.

7 Dillichip Works

Across the Cordale loop in the river, on the east bank, lay Dillichip Works (now a bonded whisky warehouse), begun by Turnbull and Arthur as a bleach-field in the 1820's, and operated as a printworks from 1848. It was taken over in 1866 after calico printing began by one of the greatest names in the industry – Archibald Orr Ewing; at that time the Works



were extended and yarn dyeing was begun. Dillichip became part of the UTR combine in December 1897, and was closed in 1936. Two lades are still clearly visible, and the railway bridge carrying the Dillichip spur from the Balloch to Dumbarton railway still straddles the river. It is commonly thought that 'Dillichip' comes from the Scots meaning 'place of the lash',

but excavations in 1940 unearthed a bronze-age burial casket, suggesting the Gaelic word-origin meaning 'burial knoll'.



Dillichip Works



Orr Ewing Label (Glasgow Office)

8 Kirkland Works

On the north side of Dillichip lay two of the longest-defunct works. Kirkland Printworks was set up as a bleach-field some time before 1836; later a large block-printing works was operated until the site was bought in 1860 by Archibald Orr Ewing, who had the works demolished.

9 Bonhill Printworks

Between the Kirkland site and Bonhill Bridge lay 'Lang's Wee Field' or Bonhill Printworks, opened in 1793 by Gilbert Lang & Co. Women and children comprised much of the workforce, and over 100 children were employed at this works alone, working an average week of 60 hours. The works were closed and demolished by 1840.

10 Ferryfield Works

To the north of Bonhill Bridge, on the west bank of the river, lay Ferryfield Works, named after the chain ferry which precariously ferried workers across the fast-flowing Leven before the building of the 'Bawbee Brig' in 1837. A printworks was established here in 1785, and the associated bleach-field of 1790 was taken over by Guthrie & Kinloch in 1835 and converted to calico block-printing and dyeing. After several changes of ownership, the Works became part of the Calico Printers Association in 1906; this was a Manchester-based combine rivalling United Turkey Red Ltd. Their takeover of Ferryfield was not a success; the Works closed in 1915 and were demolished in 1926.

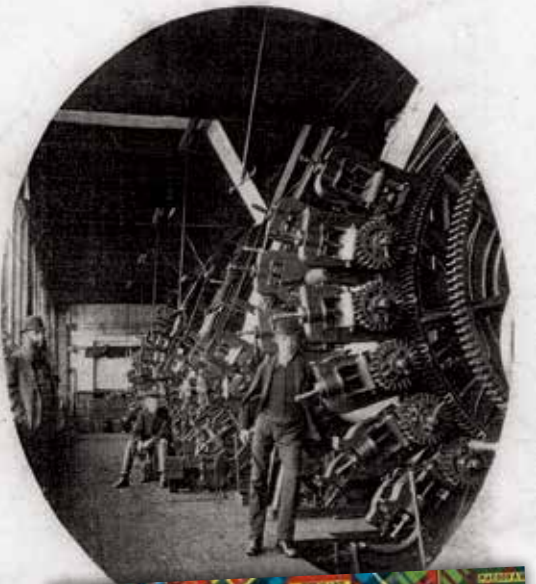
Bonhill Printfield c1793



11 *Dalmonach Works*

Across the river from Ferryfield, John & James Kibble & Co. opened Dalmonach Works in 1785. The Works burned to the ground and were rebuilt in 1812 by Henry Bell during the period of his construction of *PS Comet*. Machine-printing with engraved cylinders was then introduced. About 1837, with James Black & Co. as owners, another innovation was the opening of Dalmonach School – a highly-successful philanthropic action of widespread benefit. The first two-colour printer, horse-drawn from Glasgow, attracted a large crowd of sightseers, but the later delivery of machines by steam engine provoked even greater public excitement. Dalmonach boasted 28 printing

Rare 1865 photograph



machines, some capable of printing 60 inches width; and the only machines in Scotland capable of printing sixteen colours simultaneously. Dalmonach had a deserved reputation for both industrial and social advance. In 1899, Dalmonach became one of 46 British textile companies to join the Calico Printers Association. However, remote management was a disaster, and Dalmonach closed in 1929.

(The 1865 photograph of Dalmonach is from a very rare series. Although top craftsmen such as printers, colour mixers and engravers were poached from company to company, managements were fearful of what we know as 'industrial espionage'; most workers were discouraged from changing jobs or employers, and drawing and photography were strictly forbidden).

Pause at the steps just beyond Dalmonach Works – if you have a keen eye, you may spot the kingfisher, with his distinct silvery-blue iridescent plumage, often seen flying low across the river from the near bank to the corner of the Works under the willow. The heron too often sits motionless in the low willow branches, and can be easily overlooked.

12 *Alexandria Works*

Look upstream to Linnbrane Hole, ancient fishing-station of monks from Paisley Abbey, where the illegal practice of salmon and trout-tickling was common in the shallow aerated pools. Where the two lades rejoin the west bank of the river was Alexandria Works. Known locally as the Craft Corner, this huge site incorporated three older companies. **Levenfield Printworks** was established in 1768 by John Todd & Co. as the first printworks in the Vale. In 1790, **Croftengea** came into being as a bleaching field, with dyeing and printing introduced by 1845. The



Alexandria Works, 1994

third element in the Alexandria Works was **Charleston Engraving Works**, opened in 1830 for the engraving of printing cylinders.

Croftengea had been established by William Stirling & Sons (of Dalquhurn and Cordale). Here, an event occurred that had a major impact on the industry and made most owners very wealthy. For many years, a fast brilliant red dye had eluded the industry, but in 1827 Croftengea successfully used a new, complicated, expensive and time-consuming process called Turkey Red; Dalquhurn succeeded with the new method the following year. The ancient and secret process based around the madder plant was brought from Turkey (where it had been known as Rouge d'Adrianople) to Normandy, and from there by the Glasgow textile barons George Macintosh and David Dale. It used sheep dung, bulls' blood and rancid olive oil (for their naturally occurring enzymes and 'oily' texture). Local farmers were happy to begin the new ancillary industry of slaughtering (130,000 gallons of blood being required each year at Dalquhurn alone). In the early days, the process employed 38 stages and each fabric batch had to withstand many weeks of harsh processing.

In 1860 John Orr Ewing (older brother of Archibald, of Dillichip) bought Levenfield and Croftengea, renaming them Alexandria Works. He had fallen out with his brother, who then owned Dillichip, Milton and Levenbank on the opposite side of the river.

Commercial success became compromised by cheap Japanese imports, by export difficulties to India, which had been a highly lucrative market, and by resistance to new artificial dye technologies. Rivalries were abandoned, and in December 1897 United Turkey Red Ltd was formed, combining Alexandria, Dalquhurn, Cordale, Dillichip, Levenbank and Milton. The other two works, Dalmonach and Ferryfield, became part of the Calico Printers Association.

Alexandria Works, in common with the others, began to fail after the First World War. It was finally closed in 1960 and equipment and archives were stripped out and sent to Manchester, or dumped. In 1964 the 306-foot Craft Stalk chimney, the last iconic structure of the textile industry, was demolished.

As you pass the high walls of the 'Craft' and the pillars marking the main factory gate, spot the steps leading down to the river edge and the site of the chain-ferry linking the works on both sides of the river. You may notice a black powdery stain on nearby trees and buildings. This is not pollution, but a disfiguring, wind-blown fungus thriving on the evaporated distillate from nearby whisky bonds.





Milton Works

13 Milton Works

Milton Works (the 'Laigh Field'), was established in 1772 for yarn dyeing by Todd & Shortridge of Levenfield Works, the two works being linked by chain-ferry across the river. Archibald Orr Ewing took over about 1850, when the works were enlarged to include Turkey Red dyeing. They became part of UTR, but were run down in 1911 and closed after the First World War.

14 Levenbank Works

Levenbank Works (the 'Heigh Field') were established in 1784 by Watson, Arthur & Co., for the block-printing of small items. Taken over by Archibald Orr Ewing in 1845, they were greatly enlarged, covering about four times the area of Jamestown village. Orr Ewing introduced Turkey Red dyeing, and after the Works became part of UTR during the amalgamations, some specialised printing techniques remained, but concentration was on dyeing; the Works were closed after the Second World War. (Clearly to be seen in the photograph are the Levenbank lades; the long lade leading into Levenfield and Alexandria Works; and the railway from Stirling and Jamestown crossing the river).

Levenbank Works



There were intense communal as well as commercial rivalries, and much of the lore of the 'Craft' and the other works survives today. Generations of the same families either owned or worked in the rival works. Huge volumes of the highest quality dyed and printed textiles were exported worldwide. Reputations were fiercely made and protected, and vast fortunes were made – by a few. For the great majority, working and living conditions were tough. Many workers were women or young people (who could all be paid less), and priests in Ireland were instructed to identify 'strong subservient farm-girls'. Children as young as six worked from 6am till 7pm and until 12.30pm on Saturdays; both trade unions and the Communist Party flourished; strikes were widespread, notably in 1911 and 1930.

15 The Loch Lomond Radium Works

One unique industry which relied on the clean water of the river deserves mention. The Loch Lomond Radium Works was established in 1915 by John Stewart MacArthur on a former sawmill site at Dalvait. MacArthur had been responsible in the 1880's for the world-wide success of the cyanide extraction process which saved the world's gold and silver industries from expected failure. Since 1911, he had been a pioneer radium producer in Cheshire, but returned to Scotland for access to clean water. The radium salts produced at Dalvait were mainly used in medicine, and in the production of luminous materials for the Admiralty. The Radium

Loch Lomond Radium Works



Works closed a few years after MacArthur's death in 1920. The site – for many years used as a boatyard – has not been completely decontaminated and is still radioactive.

16 *British Silk Dyers*

The last echo of textiles came late, with the establishment of British Silk Dyers in 1929, on a site at Drumkinnon Wood now occupied by the Drumkinnon Gate housing development. Originally under French, then Swiss ownership, the company's final twenty years was under American control. About 500 employees successfully produced 20 million yards of fabrics a year, using complex modern dyes. The company ceased trading in 1980.

Below: Textile Label Designs



At Balloch Bridge, you have now reached the end of your walk, having traversed the 'Bea Lach' or 'pass to the field of calm water', Loch Lomond.



Above: Some examples of textile patterns

At Balloch, the main visitor attractions are **Loch Lomond Shores** (01389-751031); **The Maid of the Loch** (Loch Lomond Steamship Co.) (01389-711865), and **Sweeney's Cruises** (01389-752376). Trains depart regularly to Dumbarton, Glasgow and Edinburgh, and buses to numerous local destinations.

Loch Lomond & Trossachs National Park (01389-722600) and **West Dunbartonshire Council Ranger services** (01389-752977) offer ways to explore more of the local countryside with programmes of Ranger-led guided walks and events.

A superb on-line exhibition, hosted by National Museums Scotland is now live. 'Colouring the Nation' can be accessed online at:

www.nms.ac.uk/turkey_red/colouring_the_nation

It contains over 500 interactive high resolution images of patterns in the NMS Turkey Red Collection as well as contextual essays on the industry. An accompanying book will appear later in 2013.



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This leaflet is one of a series of six Heritage Trails designed to guide you around some of the most fascinating local areas, and to indicate significant social, historical and architectural features. Each leaflet includes an annotated map, detailed narrative, and a number of images relating to the trail. Each leaflet will be available on the West Dunbartonshire Council website, at:
www.west-dunbarton.gov.uk



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