

Gloucestershire Canal Trade in the Napoleonic Era (1800-1819)

The Napoleonic era saw a vast expansion in the use of canals for transport of raw materials. Over a million tons of goods travelled over the Stroudwater Navigation during this period. This was aided by an ever expanding list of new canals connected to the River Severn during this period. The main changes were:

- 1800: Connection of the Monmouth & Brecon Canal to Newport Docks
- 1810: Opening of the Bullo Pill Railway, a plateway connecting Cinderford's mines and forges to Bullo Pill
- 1810: Opening of Severn & Wye Railway, a plateway linking Lydbrook on the Wye to Lydney on the Severn through the heart of the Forest of Dean
- 1813: Opening of the Lydney Canal, linking Lydney's foundries to the Severn
- 1815: Opening of the Worcester and Birmingham Canal, with new stop locks at Gas Street Basin allowing BCN traffic to reach the Severn via Worcester rather than through Stourport
- 1819: Opening of North Wilts Canal from Latton to Swindon, allowing transport to Abingdon via the Wilts & Berks Canal, bypassing the upper reaches of the Thames.

In 1819 the first shipments of coal from the Wyre Forest coal field on the banks of the Severn at Stanley in Shropshire began to arrive in Gloucestershire. Also in 1818/9 the builders of the Gloucester and Berkeley Ship Canal began to use the section of the Stroudwater Navigation between Framilode and Saul Junction to import building materials.

During the first decade of the 19th century trade from South Wales along the Channel was restricted, with significant amounts of Cornish copper coming through the Stroudwater and Thames & Severn Canals to locations such as Marlow and Wraysbury on the River Thames. Other trade through to London was, however, affected by the opening of the Blisworth Tunnel on the Grand Junction Canal in 1805, which allowed traffic from the Coventry Canal and Birmingham & Fazeley canals to reach London without going through Oxford. Similarly, the opening of the Kennet & Avon Canal in 1811 led to a significant reduction in the traffic from Bristol to London via the Gloucestershire canals.

The Growth of the Coal Trade

During the Napoleonic era the only steam engines in the Stroud valley, other than the Thames & Severn Canal's pumping engine at Thames Head, were those of William Purnell & Co at Fromebridge (1803) and the H Hicks & Son at Eastington (1818). Outside Stroud valley W & P Playne of Dunkirk Mill at Minchinhampton and Edward Sheppard of Uley also purchased engines from Boulton & Watt in this period. It was in the 1820s that steam arrived in the valleys, with no less than 18 new and replacement engines being ordered from Boulton & Watt by 1826.

There were major changes in the sourcing of coal during this period, particularly the expansion of the market for Forest Coal. In 1800 only 111 tons of Forest Coal was recorded as travelling on the Stroudwater Navigation; by 1819 this had risen to 27,902 tons. Newport Coal also saw an increase from 206 tons in 1800 to a peak of 7078 tons in 1809, before the opening of the Bullo Pill and Lydney plateways caused the Newport contribution to drop to 3756 tons by 1819. The main source of coal in 1800 was that shipped through Stourport from the Staffordshire Coal fields at Cannock, Wolverhampton and near Stourbridge. In 1800 26,818 tons came by this route but by 1819 only

9486 tons arrived via Stourport. In 1800 2286 tons of coal was sent down from Coalbrookdale; though this increased to as much as 9915 tons in 1816, coal from this source, including that from the Stanley coal mine in the Wyre Forest, had dropped to 3212 tons by 1819. Other coal sources included Tenby Coal, which accounted for 1000 tons in 1810 and 1811, declined to almost nothing by the end of the era.

By 1819 the total amount of coal carried on the Stroudwater Navigation had risen to 44,800 tons (72% of the total of 61,784 tons carried on the canal that year). Half of this, 22,626 tons, went through to the Thames and Severn Canal Company's wharf at Brimscombe, most of which was then exported westwards to wharves on the canal at Chalford, Cirencester, Cricklade and Lechlade, and further down the Thames to locations such as the coal wharf by Radcot Bridge. By this time supplies would also have been sent via the North Wilts Canal at Latton to Swindon, Abingdon and even as far as Staines. 59% (13,396 tons) of this coal was shipped through Lydney, 14% (3284 tons) through Stourport from the Staffordshire coal fields, 11% (2541 tons) was shipped through Bullo Pill, 11% (2501 tons) through Newport and only 2% (524 tons) was from Shropshire.

On the Stroudwater Canal 6012 tons of coal were delivered to Dudbridge in 1819, 2397 tons to Wallbridge, 2900 tons to Bristol Road (including 511 tons for Purnell's steam powered roller mill at Fromebridge), 1939 tons to Ryeford, 1593 tons to locations in Stonehouse, 1044 tons to Eastington (Chippenhams Platt wharf) and 693 tons to Ebley. 32% of the coal landed at Dudbridge came from Staffordshire (through Stourport), 30% came through Lydney, 16% came from Shropshire, 12% came through Bullo Pill, and 9% came through Newport.

Deliveries to locations on the Thames and Severn Canal between Stroud and Brimscombe in 1819 included 2762 tons to the T&S wharf at Stroud and 1529 tons to Bowbridge, together with small deliveries to the wharves of specific mills, including Arundels, Capels, Ham, Stantons and Wathens.

Details of the costs of delivering coal to Brimscombe and Lechlade from Bilston, Newport, Lydney and Bullo Pill in February 1811 are shown in the Appendix. Interestingly, the cost of transporting coal from Bilston via Stourport and the Severn was less than transporting it from Lydney.

Other Cargoes

Figure 1 shows the tons carried of the main cargoes that travelled up, and down, the Stroudwater Navigation during the Napoleonic era.

Road Stone was brought in, mainly from Bristol, at a specially reduced rate for use on the local toll roads, while building stone was exported, mostly from above Brimscombe, to locations both on the Stroudwater Canal and further away, to places such as Gloucester Goal. Paving stone from the Forest was imported to the valleys.

Between 1800 and 1804 over a thousand tons of salt was brought down from Droitwich each year, mostly for transmission on to London, but after that 300-600 tons a year sufficed for local demand.

Smelted copper from Swansea made a significant impact in the first decade, rising from 514 tons in 1800 to 1849 tons in 1807, before falling back to 1465 tons in 1810, but after that recorded trade became much more variable, ranging from 434 tons to 0, though it could be that the level of trade meant that copper was treated as general merchandise rather than a specific cargo.

Shropshire and Newport iron was also a variable cargo, with 1555 tons shipped in 1800, but only 166 tons in 1803. In 1812 1289 tons were transported and in 1819 910 tons, though in between, in 1814, only 110 tons were recorded. Tin, principally from Purnell’s tin plate works at Framilode and Fromebridge was another variable cargo ranging from 961 tons in 1809 to 211 tons in 1817, though again this latter figure could be due to smaller shipments being classed as general merchandize.

Bricks were principally supplied from Longney (on the Severn above Framilode) and Coalbrookdale, which also supplied quantities of tiles. Shipment quantities of bricks were largely dependent on local activity, ranging from 137 tons in 1803, to 2271 tons in 1818, when work started on building the Gloucester & Berkeley Canal through Saul.

Timber was another major export item, both as round timber and as converted timber (planks and boards). The amount recorded varies from 23 tons in 1805 to 2131 tons in 1815. Significant amounts of timber were also imported for use in local sawmills.

Corn and grain were not a major cargo for much of the period, though in the last few years, when special rates were introduced for corn on the Stroudwater Navigation, trade increased so that, by 1819, 923 tons of corn was imported. Full details of the amounts recorded each year are provided in Appendix 1.

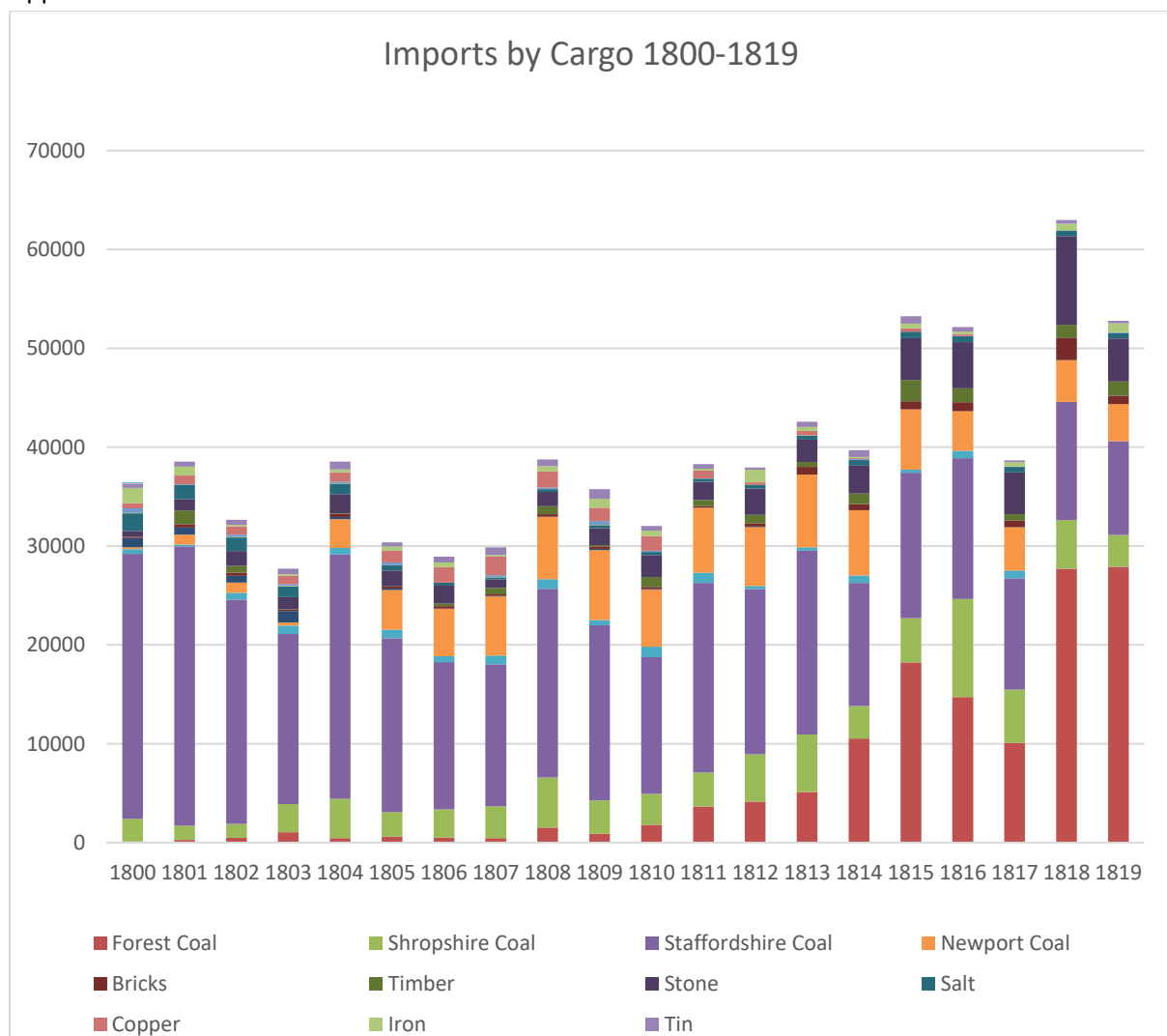


Figure 1: Principal cargoes in the Napoleonic Era

Trading Locations

Figure 2 shows the tons delivered at various destinations. The figures used to generate this image are shown in Appendix 1.

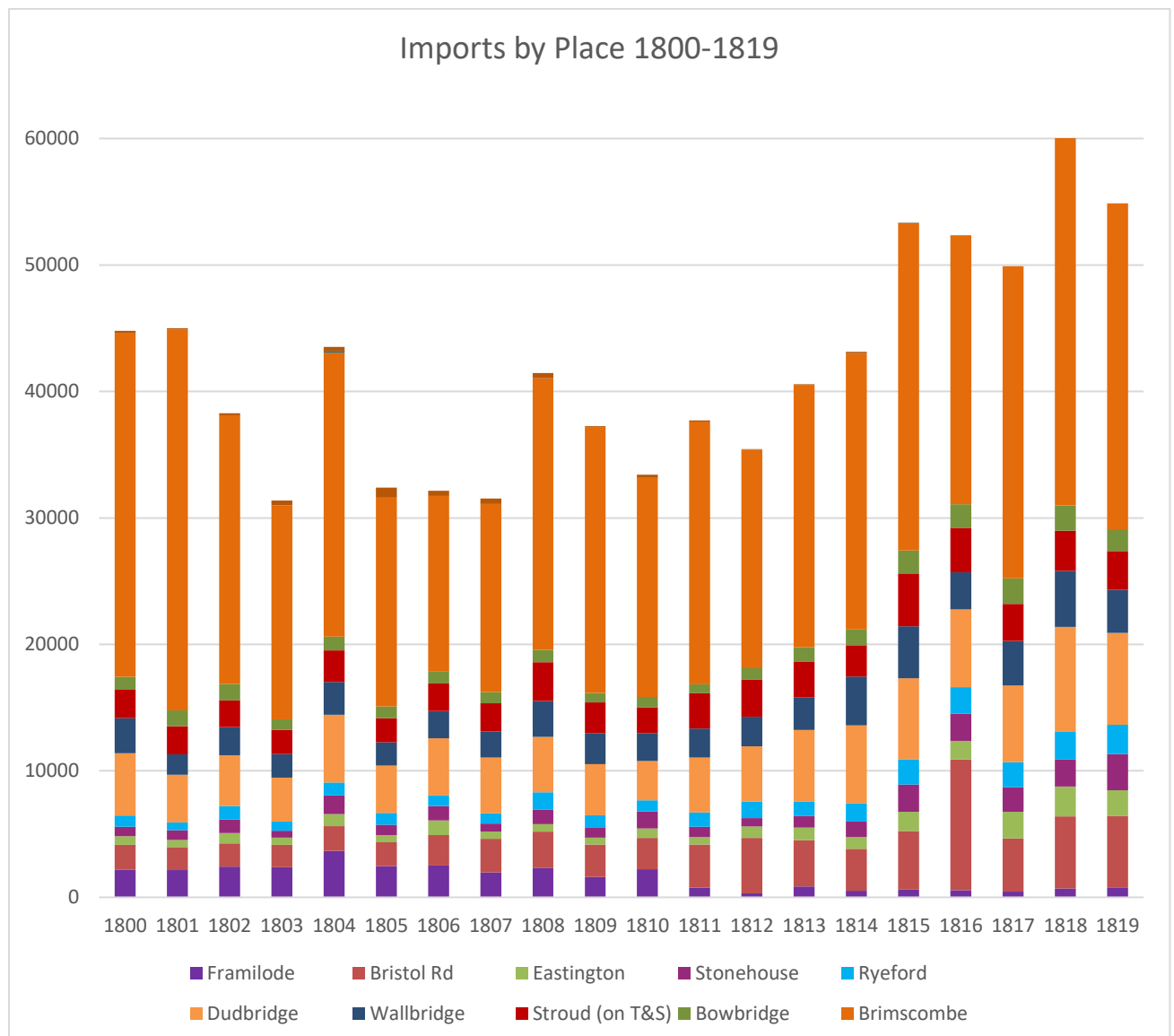


Figure 2: Tons delivered at main delivery points between 1800 and 1819

Brimscombe was the main destination, with 430,975 tons delivered there. In addition, there were 52,717 tons sent to the Stroud wharf of the Thames & Severn Canal, and 24,185 tons sent to Bowbridge.

On the Stroudwater Navigation the main delivery points were Dudbridge (100,305 tons), Bristol Road (69,402 tons), Wallbridge (54,089 tons), Framilode (31,536 tons), Ryeford (25,797 tons), Stonehouse (25,399 tons) and Eastington & Chippenhams Platt (20,778 tons).

Deliveries to other mills and yards along the canal were insignificant. Exports made up less than 5% of trade on the canal.

Revenue during the Napoleonic Era

A total of £80,434 16s 5d was taken for tonnage in this era, after drawbacks on coal and iron taken beyond Radcot Bridge on the Thames was recorded and on coal delivered to Thames Head for the use of Thames & Severn Canal's pumping station.

Revenue, which ranged from £3237 in 1803 to £5440 in 1818, is illustrated in Figure 3.

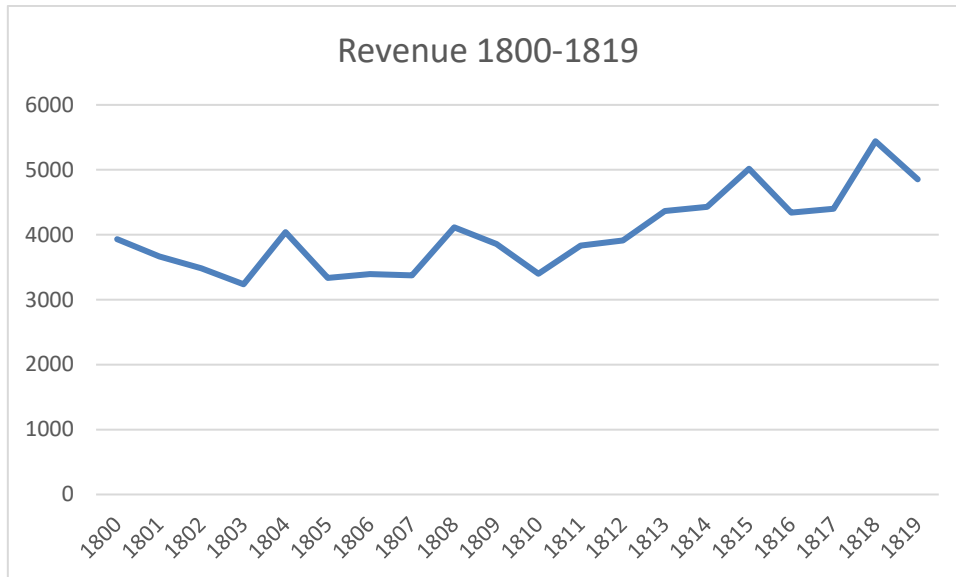


Figure 3: Annual Tonnage Revenue of the Stroudwater Navigation

The annual dividend paid to shareholders ranged from £11 5s in 1800 to £20 in 1819.

Appendix 1: Costs and annual statistics

A report sent to the committee of the Thames and Severn Canal Company in London in February 1811 showed the following costs of delivering coal to Brimscombe and Lechlade:

Cost prices of Coal February 1811	Bilston	Newport	Lydney	Bullo
Cost at shipping place	16s 6d	11s 6d	13s	12s
Freight to Brimscombe	4s 6d	7s	5s	3s 6d
Stroudwater tonnage	1s	1s	1s	1s
T&S tonnage	1s 3d	1s 3d	1s 3d	1s 3d
Wharfage etc	3d	3d	3d	3d
Cost at Brimscombe	23s 6d	21s	20s 6d	18s
T&S tonnage to Lechlade	2s 9d	2s 9d	2s 9d	2s 9d
Freight to Lechlade	2s 6d	2s 6d	2s 6d	2s 6d
Cost at Lechlade	28s 9d	26s 3d	25s 9d	23s 3d
Profit	2s 3d	2s 3d	2s 3d	2s 3d
Proposed price to be sold at on 1 March	31s	28s 6d	28s	25s 6d

The following table shows how many tons were carried each year for the main delivery points on the Stroudwater Navigation and Thames & Severn Canals shown in Figure 2 as recorded in the Tonnage Books of the Stroudwater Navigation:

Year	Framilode	Bristol Rd	Eastington	Stonehouse	Ryeford	Dudbridge	Wallbridge	Stroud (on T&S)	Bowbridge	Brimscombe
1800	2189	1956	686	744	896	4932	2773	2231	1023	27209
1801	2164	1806	569	774	604	3786	1592	2231	1246	30131
1802	2434	1836	823	1058	1061	4018	2223	2113	1303	21251
1803	2383	1768	570	534	748	3453	1878	1902	850	16913
1804	3682	1940	972	1468	1019	5357	2591	2498	1091	22461
1805	2472	1880	575	809	927	3747	1855	1905	916	16524
1806	2514	2419	1153	1141	833	4513	2170	2167	932	13891
1807	1982	2644	576	638	819	4400	2052	2231	897	14866
1808	2314	2888	583	1160	1374	4366	2842	3055	989	21468
1809	1607	2576	527	817	975	4034	2447	2437	747	20966
1810	2222	2469	766	1328	898	3092	2205	2052	824	17327
1811	773	3400	586	828	1136	4343	2274	2803	700	20773
1812	314	4384	909	662	1322	4344	2335	2956	889	17287
1813	869	3642	998	936	1120	5659	2567	2826	1147	20722
1814	519	3308	941	1218	1457	6160	3862	2460	1257	21824
1815	622	4612	1536	2150	2010	6394	4116	4158	1830	25910
1816	561	10325	1478	2165	2099	6136	2947	3503	1857	21273
1817	456	4193	2120	1950	1972	6057	3521	2936	2029	24669
1818	701	5693	2370	2163	2200	8259	4433	3175	1993	29684
1819	758	5663	2040	2856	2327	7255	3406	3078	1665	25826

Data relating to cargoes shown in Figure 1 was taken from the following table:

Year	Forest Coal	Shropshire Coal	Stourport Coal	Tenby Coal	Newport Coal	Bricks	Timber	Stone	Salt	Copper	Iron	Tin
1800	111	2286	26818	451	206	106		592	1792	514	1555	411
1801	252	1462	28235	184	1002	363	1368	1165	1420	859	918	485
1802	481	1422	22662	709	1031	302	688	1510	1374	863	131	514
1803	1051	2849	17213	849	306	137	42	1227	1095	858	166	546
1804	459	3957	24746	640	2911	295	62	1962	1046	962	290	782
1805	623	2465	17585	876	4005	181	23	1595	567	1178	451	412
1806	520	2830	14902	602	4781	231	273	1803	314	1538	485	575
1807	464	3224	14352	881	5972	173	644	842	235	1849	178	784
1808	1531	5043	19095	960	6297	266	791	1449	267	1625	539	697
1809	887	3381	17702	539	7078	267	123	1708	302	1345	910	961
1810	1784	3142	13824	1067	5755	246	986	2220	321	1465	559	487
1811	3634	3468	19173	1031	6551	203	584	1846	321	789	192	474
1812	4142	4776	16736	302	5944	336	853	2661	399	213	1289	213
1813	5123	5824	18560	361	7348	771	515	2269	397	434	413	546
1814	10518	3304	12450	735	6621	619	1061	2823	553	107	110	700
1815	18234	4477	14697	326	6077	838	2131	4229	665	341	479	757
1816	14730	9915	14241	730	4025	889	1423	4649	613	194	253	484
1817	10083	5396	11253	793	4382	680	623	4218	589	0	442	211
1818	27716	4892	11961	0	4236	2271	1287	8991	554	10	672	394
1819	27902	3212	9486	0	3756	843	1445	4346	542	0	910	249