

## **Part 1 Introduction**

### **Chapter 1.1 Aim and Previous Research**

#### **1.1.1 Aim**

The aim of this thesis is to investigate which sections of non-tidal rivers in England could be used physically and used legally and which were used for the transport of goods and people in the period 1189-1600. The thesis seeks to provide a holistic and interdisciplinary approach to the use of rivers during this period.

This topic was chosen because of the author's interest in the law relating to access to rivers. In 1973 the Select Committee of the House of Lords on Sport and Leisure stated that, 'The legal question of rights of way over water must be settled. A number of different legal interpretations of this right of way have been referred to in evidence and it is time for these to be resolved.'<sup>1</sup> It is considered that this is the first attempt to resolve this legal question from first principles.

Those who have written about the law regarding access on rivers have assumed that (1) historically all rivers were private, (2) there was historically little use of the rivers and (3) that the law relating to the use of rivers was equivalent to that for roads. The third assumption was rejected by the House of Lords in 1991.<sup>2</sup> The first two assumptions together with the historic physical usability of the rivers form the subject of this thesis.

The three topics studied are interrelated. Each can only be fully understood with knowledge of the other two. For example, evidence of use helps the understanding of the historic siltation of rivers (Chapter 2.6), knowledge of the multi-channel form of rivers explains why some rivers were not used by barges (Chapter 2.5), examples of use may indicate that the law permitted use and the early case law regarding ownership of land shows that rivers often migrated.

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<sup>1</sup> Second Report from the Select Committee of the House of Lords on Sport and Leisure. 1973. HL 193, lxxiii.

<sup>2</sup> *A-G ex rel Yorkshire Derwent Trust Ltd v Brotherton* [1992] AC 425.

Some previous attempts to estimate the extent to which the rivers were used in this period have relied on ‘historic records of use’, mostly written. Whilst it has been well understood that evidence of the physical usability of a river did not imply that the river was actually used, it has, perhaps, been less well recognised, until recently, that absence of a ‘historic record of use’ does not imply that the river was not used.<sup>3</sup>

The historic upper limit of physical usability is investigated first as sections of river upstream of this point were not used. Rivers which could not legally be used would also, in general, not have been used, so the legal right to use the rivers, as understood at that time, is investigated second. Thirdly, records of use, and non-use, are investigated and analysed in order to estimate the extent to which rivers were in fact used. This approach does not always produce proof of use. It can result in a consideration of the probability of a section of a river having been used. Each part of the study includes references to a collection of ‘historic records of use’ larger than any which has previously been available. These are listed in Appendix A. Finally the interrelationships between these three apparently disparate topics are considered and the implications for the extent of the current legal right of access on rivers are stated.

### **1.1.2 Previous Research**

No literature has been found concerning the physical form of rivers during the period 1189-1600 nor concerning whether they were public or private.

Much has been written about the use of rivers. Some of these works were reliable, some possibly not. In c.1180 Roger de Hoveden wrote of ‘the lesser rivers which carry vessels with the things that are necessary to boroughs and cities.’<sup>4</sup> In 1586 Harrison in his contemporary description of Britain wrote that he had hoped to describe the ‘depth of chanell (for burden)’<sup>5</sup> of all the rivers. This seems to imply that all rivers might be used to a greater or lesser extent. In 1622 Callis spoke of ‘those

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<sup>3</sup> For example the maps showing areas more than 15 miles from a navigable river in T.S. Willan, *River Navigation in England. 1600-1750*. London: Frank Cass & Co. Ltd. 1964.

<sup>4</sup> *The Annals of Roger de Hoveden. Volume 1 Part 2. A.D. 1155 to 1180*. Translator Henry T. Riley, Felinfach: Llanerch Publishers. Facsimile reprint 1996, 547.

<sup>5</sup> Raphael Holinshed, William Harrison and others, *The First and Second Volumes of the Chronicles*. 2<sup>nd</sup> Edition. London: J. Johnson *et al.* 1807, 78.

people who have free and customary passage on rivers, as a liberty and inheritance,' and of 'poor Boatmen which come thereon with their Boats accidentally, by the general Custome of the realm'.<sup>6</sup>

In the 17<sup>th</sup> and 18<sup>th</sup> centuries many rivers were modified to enable their use by barges and the memory of the use of the rivers by smaller boats was mostly lost. By the end of the 18<sup>th</sup> century a lawyer could say, without challenge, that 'Few of our native rivers, besides the Thames and the Severn, were naturally navigable, but have been made so under different Acts of Parliament.'<sup>7</sup> This statement was repeated in the first book on the Law of Waters<sup>8</sup> and not contradicted in later books.<sup>9</sup> Even now the Angling Trust seems to consider it to be true.<sup>10</sup>

Two quotations have been found from early in the 20<sup>th</sup> century concerning the historic use of minor rivers. In 1913 Webb and Webb wrote that in the Middle Ages heavy materials were taken by water, going by small boats 'up the most insignificant streams.'<sup>11</sup> In 1922 Day wrote 'An outstanding characteristic of medieval water transport was the use of extremely small, even intermittent, streams for the carriage of goods. Every watercourse that could be used was brought into service, frequently with very minor man-made improvements in its course.'<sup>12</sup> No evidence was provided to support either statement.

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<sup>6</sup> Robert Callis, *The Reading of the Famous and Learned Robert Callis, Esq; Upon the Statute of 23 H. 8. cap. 5. of Sewers as was delivered by him at Gray's Inn, in August, 1622.* 2<sup>nd</sup> Edition. London: Thomas Bassett. 1685, 137.

<sup>7</sup> *Ball v Herbert*, (1789) 3TR 253.

<sup>8</sup> Humphrey W Woolrych, *A Treatise on the Law of Waters and of Sewers.* London: Saunders and Benning. 1830.

<sup>9</sup> H.J.W. Coulson and Urquart A. Forbes, *The law relating to Waters, Sea, Tidal and Inland.* 2<sup>nd</sup> Edition. London: Sweet and Maxwell, Limited. 1902.

A.S. Wisdom, *The Law of Rivers and Watercourses.* London: Shaw & Sons Ltd. 1962.

William Howarth, *Wisdom's Law of Watercourses.* 5<sup>th</sup> Edition. Crayford: Shaw & Sons Limited. 1992.

<sup>10</sup> Angling Trust. 'A Statement on Inland Navigation. Appendix 1.' Released 12 May 2009. [www.anglingtrust.net](http://www.anglingtrust.net). Accessed 5.12.09

<sup>11</sup> Sidney and Beatrice Webb, *English Local Government: the Story of the King's Highway.* London: Longmans, Green and Co. 1913, 8.

<sup>12</sup> Clive Day, *A History of Commerce.* New York, 1922, 56. Cited in Albert C. Leighton, *Transport & Communication in Early Medieval Europe AD 500-1100.* Newton Abbot: David & Charles. 1972, 125.

All other 19<sup>th</sup> and 20<sup>th</sup> century books about travel and transport which have been found were based on written records of historic use and obstructions to use.<sup>13</sup> Their evidence was collated by Edwards in 1987.<sup>14</sup> In 1993 Langdon wrote a shorter article based on the purveyance accounts for the period 1294-1348.<sup>15</sup> However in 2000 Holt wrote ‘Scholars have exaggerated the importance of water transport in the English economy; all too often assumptions of navigability depend on references to what can have been only occasional use.’<sup>16</sup> In 2007 Blair wrote that scholars had generally assumed that waterways and canals did not exist in late Anglo-Saxon and Anglo-Norman times.<sup>17</sup> However the articles in the book which he edited described the use of many canals and modified rivers during the period 950-1250. It also contained much useful information about the use of unmodified rivers at that time.<sup>18</sup>

Edwards knew his records were only partial yet some of those who have read his work have implied that they were a complete record of the rivers used. For example Jones compared Edwards’ list of general use with Langdon’s list of purveyance records. Since Edwards referred to use from 1066 to 1400, with most of the records from the 11<sup>th</sup> to the 13<sup>th</sup> century, and Langdon from 1290 to 1348 and since Edwards’

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<sup>13</sup> J.J. Jusserand, *English Wayfaring Life in the Middle Ages*. Translated from French by Lucy Toulmin Smith. (1<sup>st</sup> Edition 1889.) London: Methuen & Co Ltd. 1961.

Edwin A. Pratt, *A History of Inland Transport and Communication in England*. London: Kegan Paul, Trench, Trubner & Co., Ltd. 1912.

W.T. Jackman, *The Development of Transportation in Modern England*. (1<sup>st</sup> Edition 1916.) London: Frank Cass & Co. Ltd. 1966.

Joan Parkes, *Travel in England in the Seventeenth Century*. Oxford: Clarendon Press. 1924.

E.L. Guilford, *Travellers & Travelling in the Middle Ages*. London: The Sheldon Press. 1924.

L.F. Salzman, *English Trade in the Middle Ages*. Oxford: Clarendon Press. 1931.

A.M. Milne, *The Economics of Inland Transport*. London: Sir Isaac Pitman & Sons, Ltd. 1955.

T.S. Willan, *The Inland Trade*. Manchester: Manchester University Press. 1976.

J.A. Chartres, *Internal Trade in England 1500-1700*. The Economic Society. London: The Macmillan Press Ltd. 1977.

David Hey, *Packmen, Carriers and Packhorse Roads*. Leicester: Leicester University Press. 1980.

Norbert Ohler, (Trans. Caroline Hillier.) *The Medieval Traveller*. (1<sup>st</sup> Edition 1986.) Woodbridge: The Boydell Press. 1989.

Antoni Maczak, (Trans. Ursula Phillips.) *Travels in Early Modern Europe*. (1<sup>st</sup> Edition 1980.) Cambridge: Polity Press. 1995.

<sup>14</sup> J.F. Edwards, ‘The Transport System of Medieval England and Wales.’ Unpub. PhD thesis, Univ. of Salford. 1987.

<sup>15</sup> John Langdon, ‘Inland water transport in medieval England.’ *Journal of Historical Geography*, Vol. 19, (1993).

<sup>16</sup> R. Holt, ‘Medieval England’s Water-Related Technologies.’ In P. Squatriti, Ed, *Working with Water in Medieval Europe: Technology and Resource-Use*. Leiden, 2000, 55-6.

<sup>17</sup> Blair, 2007, back cover.

<sup>18</sup> John Blair, ‘Introduction.’ In Blair, 2007, 1.

list was the longer, Jones deduced that the use of rivers had declined from one period to the other.<sup>19</sup> This does not seem to be a valid deduction from the available data.

Most people who have written about the use of rivers have concentrated on the use of the larger rivers. Hindle and Edwards wrote that the minor drainage channels were not the concern of their study.<sup>20</sup> Langdon doubted whether rivers whose use was limited by season and which could only be used downstream could be considered navigable in the practical sense.<sup>21</sup> This thesis is about all and any use of the rivers, the movement of goods from field, marsh, mere or woodland to farmstead, from farm to market, and by the traders from the markets to ports or cities, transport for trade and the recreational use of the rivers.

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<sup>19</sup> Evan T. Jones, 'River Navigation in Medieval England.' *Journal of Historical Geography*. Vol. 26. (2000), 60-82.

<sup>20</sup> James Frederick Edwards and Brian Paul Hindle, 'The transportation system of medieval England and Wales.' *Journal of Historical Geography*. Vol. 17, (1991), 126.

<sup>21</sup> John Langdon, 'Inland water transport in medieval England.' *Journal of Historical Geography*, Vol. 19, (1993), 6.

## **Chapter 1.2 Boundaries, Dates and Definitions**

### **1.2.1 Boundaries**

The movement of goods may be divided into land carriage, river traffic and the coasting trade.<sup>22</sup> The coasting trade goes up the rivers to the first town, the first bridge or the tidal limit which are often at the same location. Thus it seems logical for the river traffic to be considered as going downstream to this place. The present tidal limit, as shown on Ordnance Survey maps, is used as the datum in this thesis. This is not necessarily the historic tidal limit as there may have been a change in the relative height of the sea and land, changes in the river geometry, a change in river discharge, and/or the construction of a weir or sluice which stops or reduces the flow of the tide. The tidal limits at other dates are, in general, not known. Other authors have used other limits. The construction and use of canals is outside the scope of the thesis except to the extent that they provide evidence of the use of the rivers to which they were connected.

### **1.2.2 Dates**

The starting date for the thesis is the start of legal memory, 3<sup>rd</sup> September 1189.<sup>23</sup> Edward I 'created by default a fictional time by which matters of ownership, possession and usage were (and are) theoretically judged.'<sup>24</sup> However evidence that a river was physically usable at an earlier date is presumptive evidence that it was usable at this date, so earlier records are used as appropriate. The closing date, 1600, is determined by the introduction of pound locks, the use of which transformed the work of modifying rivers so that they could be used by barges. The work carried out when modifying rivers and their later use are outside the scope of this thesis. No claim is made that the rivers in 1189 were in their natural state. In Roman times the Itchin at Winchester was further west than it is now, at Cirencester the Churn was

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<sup>22</sup> eg. T.S. Willan, *The Inland Trade*. Manchester: Manchester University Press. 1976.

<sup>23</sup> (1281) 3 Edward I c. 39.

<sup>24</sup> Anthony Musson, *Medieval Law in Context*. Manchester: Manchester University Press. 2001, 24.

canalised before the Roman defences were created and at Chichester the Lavant seems to have been diverted by the Romans.<sup>25</sup>

### 1.2.3 Definitions

Wormald wrote ‘Like most historians – and unlike most lawyers – I abhor definitions.’<sup>26</sup> If he was correct this thesis is not written by a historian. Hill wrote that ‘The navigable river pattern is fairly simple to reconstruct but it can lead to endless argument. What is navigable now may not have been so a millennium ago, and there is a problem in supplying an acceptable definition of “navigable”.’<sup>27</sup>

The definitions that are given here only describe how the words are used in this thesis. They are not meant to imply that other people have misused the English language. Perceptions have changed, for example, Dugdale, citing from *Lingula Brevium de term Pasch of 24 Charles I*, wrote of ‘large boats laden with xx quarters’<sup>28</sup> whereas Langdon in 2007 referred to ‘very tiny boats carrying 12.5 quarters’.<sup>29</sup>

In this thesis the word ‘vessel’ is used for all craft. Vessels are subdivided into boats, barges, ships and rafts. ‘Boats’ had a minimum size of about 5 m long, 1 m wide and a draught of 0.2 m and they carried a load of 1 tonne or more. They could be manhandled past obstructions easily. They were normally propelled by paddle, oar, quant, pole or towed by one man. In the literature they may be referred to as a boat, cobble, wherry, rowing boat, logboat, skiff, punt, canoe, *navicula*, *batella*, *scafula*, etc. The use of coracles is not considered.

‘Barges’ had a minimum size of about 10 m long, 2 m wide and a draught of 1 m and they carried a load of 20 tonnes or more. This corresponds well with the minimum

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<sup>25</sup> John Wachter, *The Towns of Roman Britain*. London: Routledge. 1995, 291, 320, 264.

<sup>26</sup> Patrick Wormald, ‘Lawyers and the State: the Varieties of Legal History.’ *Selden Society Lecture*. 2001, 5.

<sup>27</sup> David Hill, *An Atlas of Anglo-Saxon England*. Toronto: University of Toronto Press. 1981, 11.

<sup>28</sup> William Dugdale, *The History of the Imbanking and Draining of Divers Fens and Marshes*. 2<sup>nd</sup> Edition. London: Richard Geast. 1772, 143.

<sup>29</sup> John Langdon, ‘The Efficiency of Inland Water Transport in Medieval England.’ In Blair, 2007, 125.

depth of canals today which is about 2ft 6in.<sup>30</sup> A barge could only be taken past an obstruction with difficulty. They might have been towed by horses, sailed or allowed to drift down a river controlled by oars or sweeps. They may be referred to as a barge, shout, keel, trow, catch, bote, *batella*, *balingera*, *navicula*, etc.

Prior wrote that 'On the Thames the word 'barge' was reserved for a large boat of about 70 or more tons. Smaller craft were 'boats'.'<sup>31</sup> Some authors appear not to appreciate the size of these barges. Langdon listed the loads carried on some rivers in c.1400. His list includes the Thames from Henley to London 40 tonnes, Thele - Lea 38 tonnes, Lincoln - Witham 20 tonnes, Beccles - Waveney 25 tonnes, Oxford 15 tonnes, Cambridge 14 tonnes.<sup>32</sup> The largest barges were about the size of the largest lorries in England today. A barge carried as much as 500 pack animals<sup>33</sup> and a small boat as much as ten packhorses or one cart.<sup>34</sup>

'Ships' were used at sea. They normally had a fixed mast and so could not pass a fixed bridge. They were round bottomed or had a keel, whereas the boats and barges were normally flat bottomed. Ships might have carried a load of one tonne or more. They were normally propelled by sails or drifted with the tide upstream or down. In harbour they might have been towed by men on the shore or by rowing boats. They are referred to as a ship, *batella*, *navis*, *farcosta*, etc.

The differentiation between ships and boats is ancient. In 1290 it was held that the Prior of Durham had ships where only boats should be unloading on the Tyne away from Newcastle although both might use the water.<sup>35</sup> Barley wrote that

Local trade apart, it is almost impossible to make a distinction between inland, coastal and sea-going traffic, because there was so little difference between the vessels employed. There is a distinction between ship (*navis*) and boat

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<sup>30</sup> Eg. Birmingham Canal Navigations. See Jane Cumberlidge, *Inland Waterways of Great Britain*. St Ives: Imray Laurie Norie & Wilson Ltd. 1998, 57.

<sup>31</sup> Mary Prior, *Fisher Row*. Oxford: Clarendon Press. 1982, 105.

<sup>32</sup> Assuming 6 quarters to a tonne and multiplying the load by 1.5 to give the gross weight. John Langdon, 'The Efficiency of Inland Water Transport in Medieval England.' In Blair, 2007, 130.

<sup>33</sup> Clive Day, *A History of Commerce*. 2<sup>nd</sup> Edition. New York: Longmans, Green and Co. 1922, 56.

<sup>34</sup> Pack horses carried about 0.1 tonne. D.M. Palliser, *The Age of Elizabeth*. 2<sup>nd</sup> Edition. London: Longman. 1992, 314.

<sup>35</sup> James Guthrie, (The late), *The River Tyne*. London: Longmans and Co. 1880, 29-30.

(navicula), and obviously the boat could penetrate further inland; but the medieval ship was so small that it could reach places like Doncaster and Bawtry. The surprising thing is not that the ship went so far up the rivers, but that it ever dared to venture out of them.<sup>36</sup>

The word navigable is derived from *navis* and has normally referred to the passage of barges. Between 1514 and 1827 Acts were passed for making 73 rivers ‘navigable’, that is usable by barges.<sup>37</sup> Evidence has been found that at least 64 of the 66 rivers on which work was carried out were previously used by boats. So the words ‘navigable’ and ‘navigation’ are not employed in this thesis except when quoting other authors. Instead rivers are referred to as being ‘used’ or ‘being usable’ meaning ‘passable by a boat of gross weight of one tonne’. This may be physically usable or legally usable. Normally the context makes the meaning clear, if not it is stated explicitly. A river may have been usable although boats or rafts only travelled in one direction. A river is considered to have been usable even though it was usable only between obstructions. In some texts, mostly legal, the word ‘navigable’ meant tidal.<sup>38</sup>

A river is considered to have been usable even if it could not be used throughout the year. In Scots Law it has been stated that there can not be a public right of navigation on a river which could only be used when it was in spate. In one case decided under Scots law<sup>39</sup> it was held that there was a public right of navigation on a river which was navigable for four months in a year. Hall found that the mean daily discharge of a river was exceeded for about 30% of the year.<sup>40</sup> Thus, except where otherwise stated, a river is considered to have been physically usable if it could be used when the river discharge was greater than the mean discharge. Authors may not agree as to which rivers were usable, and which were not, because they were using different

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<sup>36</sup> M.W. Barley, ‘Lincolnshire Rivers in the Middle Ages.’ *Lincolnshire Architectural & Archaeological Society Reports and Papers*, New Series, Vol. 1, (1938), 19.

<sup>37</sup> See Appendix D.

<sup>38</sup> eg. Henry Schultes, *An Essay on Aquatic Rights*. London: W. Clarke and Sons. 1811.  
Water Resources Act 1991 c 57, Part V, s. 115 (9).

See John M. Gould, *A Treatise on the Law of Waters*. Chicago: Callaghan and Company. 1891, 103.

<sup>39</sup> *Colquhoun’s Trustees v Orr Ewing and Co* (1877) 4<sup>th</sup> Series SC, 344.

<sup>40</sup> D.G. Hall, ‘The assessment of water resources in Devon, England, using limited hydrometric data.’ Cited in R.C. Ward, ‘River systems and river regimes.’ In John Lewin, Ed, *British Rivers*. London: George Allen & Unwin. 1981, 20.

vessels, travelling at different stages of the river, had different levels of skill in handling a vessel or were willing to accept different amounts of damage to their craft.

A 'sporting section of a river' where there are numerous rapids with fairly high, irregular waves, broken water, eddies and whirlpools and with the course not easily recognised is not considered to be a usable section of a river<sup>41</sup> although it would normally be possible to float timber down the river.

In this thesis the words 'used historically' imply no more than that a boat went up or down the river. If it is known that a load was carried on a river from A to B on a certain date X then this implies that the section of the river was used in X AD, in the X<sup>th</sup> century and in the period 1189-1600. It is considered unsatisfactory to write that the river was often, or seldom, used without defining 'often' and 'seldom'.

The 'form' of a river refers to the width, depth and whether the river is divided, braided or anastomosed. A river with a pool and riffle form is one where the riffle is braided at half mean discharge. A single channel river which does not have a pool and riffle form is referred to as 'uniform'. 'Stage' is the level of the water in the river. Weirs were used to raise the level of the water in a river or to direct the flow. Dams were used to store the water. Where a river was modified by the installation of weirs so that it formed a series of falls at weirs and ponds between the weirs the river is described as 'canalised'.

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<sup>41</sup> British Canoe Union Grade 3 river.

### **Chapter 1.3 Organisation of the thesis**

The set of all sections of rivers which were used at any given period of history is bounded and finite, but that does not mean that it is knowable. In Part 2 of the thesis physical usability is considered because rivers which were not physically usable could not be used. No previous work has been found on this subject. The causes of change are considered together with the reasons for the historic variation in the usability of rivers.

Since historic small boats are likely to have been usable on rivers with the same form and discharge as present day canvas and lathe canoes there is a brief study of the conditions for usability for these boats in terms of gradient, discharge and bed material. In the following three chapters the main factors which have affected usability are considered, change in discharge, anthropogenic modification of the river form and changing channel patterns. It is shown that each of these would have had a significant effect on the length of river which was usable. The approach in Chapter 2.6 is different. The records of historic use are employed to establish the reasons why some rivers became impassable while others remained passable. This is followed in Chapter 2.7 by a consideration as to which rivers could be used to their source.

Part 3 of the thesis may be considered to be rather more radical. First it is shown that the traditional model of the formation of highways used by lawyers is incorrect. It is then shown that simple trespass was not an offence before 1600 and that people were free to pass over unenclosed land providing they did no damage. This implies that there was a public right to use all the physically navigable rivers.

Part 4 starts with consideration of the importance of the use of rivers in terms of the amount of goods transported and the proportion carried on rivers together with general evidence of the importance as indicated by the construction of canals, the location of wealth and the relative cost of land and river transport. The evidence of historic use which is available now is then reviewed for both archaeological and written evidence. This evidence is then summarised by regions and the apparent evidence for observer bias considered. The records of use of five particularly relevant sections of rivers are considered together with the extent of the anthropogenic

obstruction of rivers by bridges, fords and weirs. Likely actual use is then summarised.

In Part 5 the evidence from the three preceding sections is reviewed with the conclusion that (1) there is a high probability that each section of river which is now physically usable was usable by small boats, both physically and legally, in the period 1189-1600 and that (2) on the balance of probabilities each section of river which is now physically usable was used during that period.

In Chapter 5.2 the present day legal implication of the previous work is stated and in Chapter 5.3 suggestions are made for future research.

Appendix A is a list of the records which have been found of the use of rivers. Where there are a large number of records for a particular section they are not listed but a reference is given as to where some can be found. The appendix includes material from both primary and secondary sources. It is listed, in general, without comment as to its reliability. The analysis of this material forms the basis of this thesis.

Appendices B to N provide additional data or substantiate points made in the thesis where a longer exposition in the text would not be justified.

In Appendix O, 'Roads – An invisible feature in the landscape?' it is claimed that roads between towns in the period 1189-1600 had a surface which was no better, but often worse, than that found on pasture or unimproved land.

Appendix P shows that although the conclusion reached in Part 3, that there was a public right of passage over rivers during the period 1189-1600, may be considered radical, similar rights over other types of land also existed.

Maps are printed in Appendix Q and the material from below the illustrations is repeated in Appendix R because the illustrations are not included in the electronic edition of the thesis.