

# Scottish environmental history and the (mis)use of Soums<sup>\*</sup>

by Alasdair Ross

## *Abstract*

For much of the historical period in Europe, upland pasture has been apportioned into relatively small units. Scotland was no exception to this norm and here such units were called soums. Both soums and stocking figures have been widely used to construct theories relating to the environmental history of the Highlands, particularly in relation to changing grazing pressures during the last 300 years. Using a particularly stark case study from Breadalbane, this article will argue that in fact soums are largely unreliable and confusing pieces of historical evidence that should never be used without good corroborating evidence. In the absence of reliable historical souming information, it will be suggested that historians should instead integrate site-specific palaeoecological data into their arguments to create a more accurate picture of changing grazing pressure over time.

One of the more difficult tasks for anyone involved in researching the environmental history of upland areas is trying to estimate the impact of livestock density on pasture in a particular area, and how this may have changed over time. Attempting to quantify this is important because it can help to understand how the modern landscape was shaped and so inform future decision making. There is a growing recognition that a large proportion of the upland environment in north-west Europe had been apportioned into relatively small areas of pasture by an early date, and that these pastures were highly regulated with limits on the numbers of livestock that could be grazed. It has been argued that these restrictions took two main forms: 'stinting' and 'levency and couchancy'. Stinting was the maximum amount of livestock that a household could graze and permitted managers to control the usage of pasture according to local conditions. Alternatively, levency and couchancy dictated that people could only graze the livestock that their pasture would sustain during the winter months. As such, it gave more freedom to the individual who could adjust the limits of their exploitation by increasing or decreasing the size of their holdings according to their own economic plans.<sup>1</sup>

In Scotland, research into historical livestock densities is made particularly difficult by the paucity of the surviving evidence before the fifteenth century. Often it is not until the

<sup>\*</sup> Thanks are due to my colleagues Althea Davies, Alastair Hamilton, Richard Oram and Fiona Watson for commenting upon an earlier draft of this paper. I thank the Leverhulme Trust for funding the research on which this paper is based (award F/00241/C). Thanks are also due to the referees and to Professor Hoyle for their comments.

<sup>1</sup> Martina De Moor, Leigh Shaw-Taylor and Paul Warde (eds), *The management of common land in north-west Europe, c.1500–1850* (2002), p. 25.

seventeenth century that the documentary record really improves in areas like the western and north-western Highlands and Islands. This contrasts strongly with other European countries which possess much fuller records for the earlier periods. In Scotland, some fifteenth-century documents refer to the stinting of pasture into souns, which can be defined as an imposed unit of pasture that supported a finite number of livestock at different times over the course of a year.<sup>2</sup> At its most basic level, a soum was commonly calculated to be the equivalent of the grass requirements of one cow. This could be converted into other livestock units: for example, a soum could pasture anywhere between four to ten sheep instead of a cow and a horse was frequently reckoned to be the equivalent of two souns.<sup>3</sup> Some sources give both the summer and the winter souns for a particular area and, as might be expected, the summer souming figure was usually greater than the winter soum. However, this was not always the case and occasionally the winter souming figure exceeded the summer total, indicating that some localities in Scotland specialised in foggage (winter pasture).<sup>4</sup>

Some of the evidence relating to souming in medieval Scotland was discussed by A. A. M. Duncan in 1975. He argued that souming was prevalent south of the Mounth<sup>5</sup> in the area where the 'ploughgate' was commonly found and almost wholly absent from north of the Mounth in the zone where the *dabhach* was the more common means of land assessment.<sup>6</sup> According to Duncan, this was because the ploughgate represented an extension of arable and hence increased pressure on pastoral resources. Therefore, the numbers of animals permitted to graze on each ploughgate had to be strictly controlled.<sup>7</sup> Winchester raised this possibility too although he also suggested that souming in Scotland may have been an attempt to enumerate the numbers of animals that could be kept throughout the year.<sup>8</sup>

Probably the most prolific writer on the importance of livestock densities and souming in Scotland, and particularly the Scottish Highlands and Islands post-1600, has been Robert Dodgshon. He has used both souns and stocking figures from a wide variety of historical sources to construct a number of theories that focus on the environmental history of the Highlands. Dodgshon has rightly recognised that there are problems with translating souming figures into actual livestock numbers. First, because souns only record mature stock, no ostensible official allowance was calculated for immature animals like calves, foals, lambs and kids. Second, often the soum often represented the wishes of the estate, not the tenant. Nevertheless, since souns could also be used to calculate rent, Dodgshon expected tenants to have maintained actual stocking levels that closely matched the figures recorded in the actual soum. In addition, Dodgshon has used souming and stocking figures from the Breadalbane estate in particular to argue that there was a pre-clearance shift towards sheep production in the

<sup>2</sup> For a legal definition of souming, see Lord Stair, *The institutions of the law of Scotland* (1981), pp. 461–2.

<sup>3</sup> Albert Bil, *The Shieling, 1600–1840* (1990), pp. 135–8.

<sup>4</sup> National Archives of Scotland (hereafter NAS), GD170/411 (unnumbered).

<sup>5</sup> The Mounth is the line of hills that extend westwards across Scotland from Stonehaven on the coast of eastern Aberdeenshire (Map 1). It was one of the traditional divisions within the kingdom of the Scots from

the early medieval period.

<sup>6</sup> A ploughgate (carucate) is commonly defined as an area of arable land. In contrast, a *dabhach* seems to have been an area of land that contained all the economic resources necessary to enable group of people to survive throughout a year.

<sup>7</sup> A. A. M. Duncan, *Scotland: the making of the kingdom* (1975), pp. 356–7.

<sup>8</sup> A. J. L. Winchester, *The Harvest of the Hills* (2000), p. 83.

southern Highlands, although he also concluded that it was the 1860s before sheep numbers rose dramatically overall.<sup>9</sup>

However, there remain a number of unanswered but fundamental questions regarding souming in Scotland. For example, it is often assumed that soums were calculated in the same manner throughout the country even though this theory has never been tested. Likewise it is often assumed that soums were identical in value throughout Scotland and that they can be compared over space and time. A final, but important, line of enquiry concerns the origins of souming itself. When was it first devised as a means of protecting particular environments from overgrazing, if indeed that was its rationale? While this latter point may prove to be unanswerable, there are some valuable lines of enquiry that can be profitably pursued. The first concerns land division and the relationship between the soum and larger units of land assessment.

## I

It is becoming increasingly clear to historians that the landscape of Scotland was divided up into different units of land at some point in time before parishes were created. These units of land were variously called dabhaichean, merklands, husbandlands, arochars, and tirunga, to name but a few. This means that the Scottish landscape was divided before the first half of the twelfth century, since King David I (1124–53) is traditionally held to be responsible for the enforced payment of teinds to local churches, which in turn led to the creation of parochial units.<sup>10</sup> It might be possible to push the date for the formation of these different units of land even further back in time. For example, the Book of Deer, compiled c.1130, records the existence of the two dabhaichean of upper *Ros abard* during the reign of King Máel Coluim mac Cináeda (Malcolm II, 1005–34).<sup>11</sup> If this grant is a genuine record of the eleventh century, then the existence of some of these land units can be demonstrated c.1000. There are even some hints in the evidence that these units could have been in existence before c.900. It will, however, need a much fuller examination of the evidence relating to the whole of the Scottish landscape before any kind of firm theory can be constructed.

Recent research also indicates that many of these units contained all the necessary natural resources to enable a group of people to survive throughout a year. Thus, each unit had access to forest, peat, fishing, arable, grazings and mountain pasture. Often, some of these resources were contained in pieces of land (*pendicles*) detached from the main unit.<sup>12</sup> It is recognised that these land units had various functions: for example, the people living in them were regularly assessed for military service and each unit also seems to have returned render in the form of foodstuffs such as cheese, butter and livestock to a superior lord. This latter point is very important. In order to function as an economic unit, both to feed the people living within it and to return render, it is only logical that all of these different land units would first have been assessed to ascertain, for example, how many livestock of what types could be maintained over the course

<sup>9</sup> R. A. Dodgshon, 'Livestock production in the Scottish Highlands before and after the Clearances', *Rural Hist.* 9 (1998), pp. 19–42.

<sup>10</sup> Duncan, *Scotland*, p. 298.

<sup>11</sup> Kenneth Jackson, *The Gaelic notes in the Book of*

*Deer* (1972), pp. 31–5.

<sup>12</sup> A. Ross, *The Province of Moray, c.1000–c.1230* (unpublished University of Aberdeen PhD thesis, 2 vols, 2003), I, p. 121.

of a year before the render was imposed. Although this argument assumes that the assessment was done by a central authority, there is no reason to assume that the individual soums were simultaneously created by the same assessors. Soums could just as easily have been a by-product of assessment, decided at a local level.

While there seems to be no direct Latin equivalent of the word 'sout' in early Scottish sources, the documentary evidence does contain plenty of examples of people being granted the right to graze animals. For example, in 1165 Malcolm IV granted a carucate of land in Peeblesshire along with the pasturage of 1000 sheep. Between 1193 and 1195 William I granted the monks of Melrose the right to pasture 200 ewes, 16 oxen and four cows on the lands of Hassendean. In the early thirteenth century William son of Gamell granted the advowsons of Twynholm church in Galloway, which included common pasture rights for 16 sheep and one horse, to Holyrood Abbey. Examples are not confined to southern Scotland: sometime between 1208 and 1215 Lady Muriel of Rothes and her husband Walter Murdach granted the monks of Kinloss the right to pasture 12 cows, one bull, 16 oxen, four rams and 100 sheep on part of the haugh of the dabhach of Dundurcus beside the river Spey. Similarly, in 1282 the monks of Arbroath were granted the right to pasture 100 sheep, four horses, 10 oxen, 20 cows and a bull on a bovat of land in the Garioch.<sup>13</sup> All of these grants relate to the church. Similar types of grant to secular parties before c.1350 are much rarer though this is probably a feature of the surviving evidence in Scotland which is heavily biased towards ecclesiastical records before that date.<sup>14</sup> It is very unlikely, however, that these types and numbers of animals were randomly chosen.

There are also early records of disagreements between landlord and tenant over livestock numbers. One such example was the new arrangement, dated between 1188 and 1204, made between the monks of Melrose and Patrick I, earl of March, concerning lands in Lothian where the monks had previously been allowed to keep three flocks of sheep on common pasture. In this agreement the earl granted the monks an additional five acres of land in the southern part of *Mosiburnerig* which the monks were to enclose with a ditch to make a sheepfold. This would ensure that in future there would be no controversy between the monks and their landlords over sheep numbers. From this date, the three flocks were to contain a maximum of 500 animals, 1500 wedders in total.<sup>15</sup> This document suggests that the earl of Dunbar, and probably also the other tenants of the common pasturage, were concerned about the overstocking of an economic resource.

As the majority of these examples also involve sub-tenancies, which would have required close control by a superior lord, it is unlikely that they are examples of leveny and couchancy. Instead, since these documents assign precise numbers of different animals to set areas of

<sup>13</sup> G.W.S.Barrow (ed.), *Regesta Regum Scottorum*, I, *The acts of Malcolm IV* (1960), p.274; G.W.S.Barrow (ed.) with W.W.Scott, *Regesta Regum Scottorum*, II, *The acts of William I* (1971), pp.359–60; Cosmo Innes (ed.), *Liber Cartarum Sancte Crucis* (1840), no. 72; NAS, Adv. MS. 29.4.2[x], fos. 231r – 232v; id., *Liber S. Thome de Aberbrothoc* (2 vols, 1848), I, no. 314. The grant to Melrose from King William, which probably related to overstocking, is discussed in A.A.M.Duncan, 'Roger of Howden

and Scotland, 1187–1201', in Barbara E.Crawford (ed.), *Church, chronicle and learning in Medieval and early Renaissance Scotland* (1999), p.138.

<sup>14</sup> One such secular example can be found in A.A.M.Duncan (ed.), *Regesta Regum Scottorum*, V, *The acts of Robert I* (1988), p.520.

<sup>15</sup> Cosmo Innes (ed.), *Liber Sancte Marie de Melros* (2 vols, 1837), I, nos. 55 and 56. My thanks to Richard Oram for this reference.

land, and since there were also disagreements over the actual numbers of animals pastured in particular areas, logically these could be considered as reasonably early examples of different proportions of a soumed landscape, even though the different groupings of animals are not expressly called soums. Some of these examples also demonstrate that souming was more common north of the Mounth at an earlier date than Duncan allowed and indicate that he was perhaps mistaken to try to differentiate between the ploughgate and the *dabhach*.<sup>16</sup>

When Scots started to replace Latin in some documentation towards the end of the fourteenth century, the word 'souv' or 'souv' began to appear and it occurs with increasing frequency throughout the fifteenth and sixteenth centuries, almost always in connection with individual farms or townships.<sup>17</sup> In contrast, soumings relating to entire estates are comparatively rare until the seventeenth century but then occur with increasing frequency, helped in part by the surveys completed for the Commissioners of the Forfeited Estates after the Jacobite rising ended in 1746, and also by estate surveys as landlords took an increasing interest in maximising the economic potential of their lands. At present, there is no way of telling whether the survival of entire estate soums after c.1600 is just an accident, or whether it indicates changing economic or political circumstances, or increasing concern about pastoral resources.

In relation to souming, one of the most important of these estate surveys was that completed by John Farquharson and John McArthur for the third earl of Breadalbane in 1769. Farquharson surveyed the north side of Loch Tay, McArthur the south side (Map 1). Only McArthur, however, included souming figures in his survey and from these it is clear that he calculated each soum according to the acreage of moor and pasture, both within and without the head-dykes of each township. Accordingly, his calculations ranged from just over three to five acres per soum, depending on the quality of the pasture.<sup>18</sup> Interestingly, McArthur did not explicitly state that he used local knowledge to help make these calculations. This means that he may have imposed a new method of calculating soums on the south side of the loch.

This last suggestion is strengthened by the fact that a souming of Breadalbane by some of the tenants in 1805, in response to instructions from the Earl 'for encouraging a proper breed of sheep and cattle', imposed both new march boundaries and a new method of souming on the Loch Tay portion of the estate.<sup>19</sup> This was done to facilitate the division of the landscape into lots, each of which contained a set number of soums. Different lots in different parts of the estate were assigned different proportions of each species (excluding goats) to pasture, implying that the souming reflected the varying quality of the ground. The document does not state how many acres of moor and pasture were assigned to each individual soum. This 1805 organisation of the soumable landscape was completely different from Farquharson and McArthur's 1769 survey and yet was obviously perfectly acceptable to most of the local population.

In fact, these were only two in a series of soums completed on the Loch Tay portion of the Breadalbane estate during the period 1769–1805. New soums were made in 1769, 1780, 1783, 1797 and 1805. To put this in context, there had only been two, or possibly three, soumings of the estate in the 150 years prior to 1769, and there are records of only two soumings between 1805

<sup>16</sup> Many other examples of souming in dabhaichean north of the Mounth can be found in a wide variety of sources.

<sup>17</sup> For example NAS, AD1/37; GD122/1/15; GD148/246.

<sup>18</sup> Margaret M. McArthur (ed.), *Survey of Lochtayside, 1769* (Scottish History Soc., third ser., 27, 1936), p. 82.

<sup>19</sup> NAS, GD112/16/5/6/19.



MAP 1. Scotland showing some of the places mentioned in the text.  
 1. Loch Tay portion of the Breadalbane estates.  
 2. Glenorchy/Lorne portion of the Breadalbane estates.

and 1900. From these figures it would appear that for some reason parts of the Breadalbane estate were undergoing an unusual number of changes in souming capability, and possibly also in the method of souming assessment, between 1769 and 1805.

There were probably two main catalysts for these changes. The first was international warfare both in the Americas and on continental Europe that would have placed increasing economic demands on domestic producers for meat and wool. There is little doubt that the Breadalbane estates would have been geared to help meet some of these demands. The second catalyst may have been internal estate politics. From the 1780s it is clear that a number of tenants on different parts of the Breadalbane estates were making increasingly strident petitions to the estate factors to have their neighbours removed so that they could then take over the tenancy of the neighbouring township and expand their herds of animals. A good case in point is the petition of James McDiarmid, tenant of Tomfluir in Glentalnig, who wrote to the estate in 1795 to ask that the two families who held the tenancy of the neighbouring farm of Tullichglass should be

removed and the farm given over to him. According to McDiarmid, at least one of the families was young enough to easily find paid work elsewhere and the other tenant had both ridiculed and ignored estate recruiting demands. The factor agreed with McDiarmid and the tenants of Tullichglass were promptly cleared.<sup>20</sup>

It would be wrong, however, to assume that all these social changes and economic demands resulted in an increased estate souming capability. Using the officary of Ardtalnaig as an example, in McArthur's survey of 1769 it was estimated to contain approximately 1347 soums. Yet in 1805 the same officary was assigned 872 soums in 49 lots.<sup>21</sup> Similarly, Tirarthur seems to drop from 288 soums in 1727 to 196 in 1805, and Morinsh from 1020 soums in 1727 to 474 in 1805, although these last two calculations assume that the extent of these townships remained unchanged between 1727 and 1805. Unfortunately, it is not explained how these lots related to pre-existing land holding or to earlier soumings. These figures, if correct, indicate that it would be very unwise to attempt to compare souming figures for a group of townships over a long period of time. They could also indicate a massive deterioration in the carrying capacity of the grazings, although this cannot be confirmed without scientific evidence. To sum up so far, each soum may have been unique both in terms of the different proportions of animals being soumed, the density of animals allowed per soum, and in the physical extent and quality of the soum itself, in addition to any environmental changes. This is entirely logical since the landscape itself was constantly evolving and the form and type of souming would have to be altered accordingly.

Nevertheless, McArthur's method of calculating soums in 1769, assuming it was widely known and used on the Breadalbane estates in the latter part of the eighteenth century, seems valid as it assigns a set amount of pasture and moor to each animal and it is often assumed that this is the way by which all soums were calculated in Scotland. In fact, this is not the case. A description of a souming of the 'Skirts' of the forest of Mar in Strathdee, undertaken by local men in 1729, has survived among the Mar and Kellie papers. The document states that the souming of this part of Mar was calculated according to the amount of water available in each rivulet and burn for the livestock. Pasture never entered the equation.<sup>22</sup> Only after this task had been completed were the soums assigned to each plough of land. Such a method of calculating soums in the eastern Cairngorms is understandable if the effects of drought at that time were similar to that experienced today, for even short droughts in this area can cause marked drops in the water levels of the larger river systems and smaller streams and burns to dry up completely. Such droughts would obviously be problematic if large numbers of livestock had to be watered on a regular basis over an extended period of time during the summer. More importantly, from this evidence it seems clear that soums were also estimated in different ways in different parts of the country. Furthermore, it cannot be assumed that the method of calculating

<sup>20</sup> NAS, GD112/11/4/1/21/1.

<sup>21</sup> The apparent drop in the total number of soums is perplexing at a time of international warfare when sheep prices were very high. However, it is impossible to make any direct correlation between a soum of 1787 and a soum of 1805 since we may not be comparing like for like. For example, the 1805 soums may have been

assigned a higher average acreage of moor and pasture.

<sup>22</sup> NAS, GD127/17/147/1. This document states that the forest of Mar was traditionally divided into two sections, the main forest and the skirts, each containing 800 soums. The document also states that sheep and goat numbers had been converted into cattle for the purposes of calculating the souming.

the souming capacity of the forest of Mar in 1729 was unique to Strathdee, either in terms of method or in geographic location.

Just as soums were calculated in different ways throughout the country, so the numbers of animals that comprised a soum also differed. Some documents relating to Perthshire and Argyll indicate that a soum pastured one cow or half a horse or five sheep or goats. In these documents it seems that immature animals were discounted.<sup>23</sup> In the 1760s on the island of Tiree a soum equalled either one cow, one horse or five sheep.<sup>24</sup> In contrast, on one part of the Buccleuch estates in 1634, a soum was calculated to equal either one cow or ten sheep.<sup>25</sup> These figures bear some resemblance to eighteenth-century soums of lands much further north, like Stratherrick and Glenstrathfarrar, where one horse or ten sheep or ten goats also equalled one soum. However, in these latter calculations, all immature cattle were counted in any souming equation at the rate of two per soum.<sup>26</sup> Moving further north again, this time to Coigach, one immature animal was allowed for every two cows.<sup>27</sup> What is interesting about these last three examples is that they were all carried out by the same two tacksmen, both named Alexander Macrae, from Achyouuran and Inversheil respectively, in the barony of Kintail. This suggests that these men were not applying Kintail souming rates to other parts of northern Scotland but were instead fully aware of the numbers of different livestock that the land could support in other parts of the country. These local variations seem to have permeated through into the assessments imposed on each merkland: for example, during the seventeenth century the merklands around Loch Awe were assessed at 20 soums of cattle per merkland, those close by in Glenorchy assessed at 27 soums per merkland.<sup>28</sup> What all of this also implies is that any attempt to construct comparative studies of soums in different parts of Scotland becomes infinitely more complicated for two main reasons. First, the method of calculating soums differed from area to area. Second, the numbers of animals allowed to each soum also differed in different areas.

The intimate knowledge displayed by the two Macraes of the different grazings in the areas they set, together with the density of animals that could be supported in a given area, may also be represented by the different values that were given to different soums within each particular estate. For example, in Stratherrick the values of the different soums varied in price from 1s. 4d. to 7s. In Glenstrathfarrar it varied between 2s. and 4s. In Locheil the prices were set between 3s. 6d. and 10s. per soum. In all of these places the total valuations of the different soums were used to calculate the overall rental of any given township during the latter half of the eighteenth century.<sup>29</sup> This was not an innovation introduced by the Commissioners of the Forfeited Estates. There are plenty of examples in the documentary record of the different values assigned to pasturages pre-1700.<sup>30</sup> In 1461, for example, Sir Alexander Lawder of Haltoune paid John of Mentieth 6d. for each of the 24 soums that he rented from John on the common grazing on the South Raw of Ratho near Edinburgh.<sup>31</sup> During the 1620s

<sup>23</sup> NAS, GD112/9/1/3B/43.

<sup>24</sup> E. R. Cregeen (ed.), *Argyll Estate Instructions: Mull, Morveen and Tiree, 1771–1805* (Scottish History Soc., fourth ser., 1, 1964), p. 23, n. 2.

<sup>25</sup> NAS, GD224/943/6.

<sup>26</sup> NAS, E769/72/5; E769/72/6.

<sup>27</sup> NAS, E746/166.

<sup>28</sup> NAS, GD112/16/13/1/1; GD112/51/48/5.

<sup>29</sup> NAS, E769/72/5; E769/72/6; E786/50.

<sup>30</sup> NAS, GD170/203/4/11B.

<sup>31</sup> NAS, GD135/1052.

each soum on the Cademuir near Peebles was worth 13s. 4d. and, on the Buccleuch estates in the 1630s, each soum was individually valued at between £3 and £6 annually in the estate rentals.<sup>32</sup> A similar relationship between the value of stints and rentals can also be found in parts of England.<sup>33</sup>

Just as souming prices varied according to different types of pasture on different estates, so proportions of species per soum could vary within one particular estate. As we have already seen, in some parts of the Breadalbane estate one soum was calculated to support one cow, half a horse, or five sheep.<sup>34</sup> In contrast, on other parts of the same estate, in Glenlochay, Glendochart, and on parts of north Loch Tay, the equivalence was one cow or half a horse or seven sheep to each soum.<sup>35</sup> These proportions could also vary over time. In 1805 the new souming of the Breadalbane estate refined the definition of a soum so that a milk cow became the equivalent of two ewes, a three year old quey (heifer) was equal to three sheep, a two year old quey was equal to two sheep, and a stirk was the equivalent of one sheep. A foal became a soum at one year old and two soums at two years old.<sup>36</sup> Even though these changes could have been made to account for changes in the breeds and sizes of livestock we are fortunate to have these numbers. Without them, it would be difficult to make comparisons of average soumings or livestock densities, even between townships on the same estate.

Within a particular township or estate, the evidence indicates that the different tacksmen, sub-tenants and cottars were all allocated a part of the total soum, possibly either in accordance to the percentage of the total holding for which they were responsible or in return for various services. For example, in 1247 it was mentioned that a keeper had been allocated the right to keep two cows and ten sheep on common pasture in return for service to the monks of the abbey of Lindores.<sup>37</sup> During the 1470s the abbot of Coupar granted a number of soums from his moor of *Munthquhel* to various people including servants.<sup>38</sup> In 1511 a shepherd received the 20 soums of pasture that accompanied the acres he cultivated in Dunkeld.<sup>39</sup> Similarly, in 1642 three cottars, Jon dow McEwine, Donald McPhipper and Martin McKeith, who resided in the townships of Claggan, Tullichglas and Tomfour on the south side of Loch Tay, each held six, three, and six soums of their respective dwelling places.<sup>40</sup>

It is also obvious from different estate records that although souming rates seem to have been agreed between the estate and the tenants, these rates were occasionally exceeded by the tenantry. Typical examples of punishment for over-souming can be found in local court books, almost all of which post-date 1500.

[ ... ] Quhilk day Donald Mcgillechrist in Laydour is accusit for inbringing of xx oursowmes of gudis uponn the lairdis bowgang of Laydour in anno 1618 instant mair nor the toun may

<sup>32</sup> NAS, B58/14/2. My thanks to John Harrison for this reference; GD224/943/6.

<sup>33</sup> A. J. L. Winchester, 'Upland commons in northern England', in De Moor, Shaw-Taylor and Warde (eds), *Management of common land*, p. 44.

<sup>34</sup> NAS, GD112/9/1/3B/43.

<sup>35</sup> NAS, GD112/38/27/6.

<sup>36</sup> NAS, GD112/16/5/6/19.

<sup>37</sup> John Dowden (ed.), *Chartulary of the Abbey of*

*Lindores, 1195-1479* (Scottish History Soc., 42, 1903), pp. 178-80.

<sup>38</sup> Charles Rogers (ed.), *Rental book of the Cistercian Abbey of Coupar-Angus* (2 vols, 1879), I, pp. 62 and 204.

<sup>39</sup> R. K. Hannay (ed.), *Rentale Dunkeldense, being accounts of the bishopric, A.D. 1505-1517* (Scottish History Soc., Sec. ser., 10, 1915), p. 274.

<sup>40</sup> NAS, GD112/17/7, fo. 17v.

hald. The defender confesses that he had fyve zeld gudes of oursowme upon the saidis landis the space of xv days the tyme foirsaid and yairin is convict in ane wrang.<sup>41</sup>

Unlawis of this Court, Patrik Mcgillegarwie officiar

Donald McGillechrist in Laydowir for haldin of owirsowmes on the bowgang of Laydour in anno 1618 – £3.

Donald Mcewinvoir in Lekbwie for inputting of ye saidis owirsowmes ye tyme foirsaid – £5 [ ... ].<sup>42</sup>

Similar breaches of trust can also be found all over Scotland.<sup>43</sup> Even so, such breaches only amount to a miniscule percentage, both in relation to the amounts of livestock pastured in Scotland and to the numbers of court records, and there are vast areas of the country for which neither the local court books nor other records contain references to over-souming. In addition, there appears to be no clear link between instances of over-souming and the periodic reassessment of soums.

Perhaps the two most obvious reasons for a lack of over-souming are that either the local officers were doing an excellent job of policing the pasture or the tenants were generally law-abiding. Logically, there must have been a great deal of self-regulation between neighbours in respect to common pasture and there is a suspicion that some disputes must have been resolved long before they ever came to court. There is also a third option. It has recently been argued that the use of agistment (off-farm grazing, usually during winter), which allowed some farms to maintain larger numbers of stock, can be traced back no further than the opening decades of the nineteenth century.<sup>44</sup> However, there is good evidence in some family papers that agistment occurred on a regular basis throughout the year long before the mid-eighteenth century and this clearly needs to be investigated more fully on a national basis.<sup>45</sup> In this respect, the use of pre-Clearance agistment may easily have acted as a safety valve in an otherwise seemingly rigidly soumed landscape and could help to account for the relative lack of prosecutions for over-souming. Were this so, it would bring Scotland into line with other north-European countries who adopted a similar strategy.<sup>46</sup>

One further important point to bear in mind is that it would be misleading to make too much of these examples of over-souming since there are also a number of instances of under-souming amongst tenants.<sup>47</sup> Under-souming in particular makes it even more difficult to accurately estimate stock numbers, and their impact on the vegetation of any given township, since it was

<sup>41</sup> W.C. Dickinson (ed.), *The Court Book of the Barony of Carnwath, 1523–1542* (Scottish History Soc., third ser., 29, 1937), p. v.

<sup>42</sup> NAS, GD112/17/4, fo. 158v.

<sup>43</sup> NAS, GD174/856/5; GD128/63/5; GD148/246; GD112/17/2, fo. 15r; RH11/34/1, fo. 146r. Dickinson, *Carnwath*, p. 210.

<sup>44</sup> Robert A. Dodgshon, 'The Scottish Highlands before and after the Clearances: an ecological perspective', in I. D. Whyte and A. J. L. Winchester (eds), *Society, landscape and environment in upland Britain* (2004), pp. 75–6 and n. 39.

<sup>45</sup> For example, National Library of Scotland, Dep. 313/983. This states that some of the parishes in Sutherland had been accustomed to grazing livestock from other parts of Sutherland as well as from Ross-shire on a regular basis before the Clearances.

<sup>46</sup> Martina de Moor, Leigh Shaw-Taylor and Paul Warde, 'Preliminary conclusions. The commons of north-west Europe', in De Moor, Shaw-Taylor and Warde (eds), *Management of common land*, pp. 250–1.

<sup>47</sup> For example, NAS, GD174/856/4; GD112/17/4, fo. 21r and at fo. 169v.

not a punishable offence and only occasionally noted when estates were conducting a survey of their tenants. Unfortunately, though, all these problems are relatively minor when it comes to interpreting the souming lists themselves.

## II

These problems can be explored through a detailed discussion of the souming of Glenorchy from the early seventeenth to the mid-eighteenth century. One of the earliest surviving estate soums can be found in the Breadalbane estate papers.<sup>48</sup> There are two copies of this document, an original of 1626 and an undated copy written in a much later hand.<sup>49</sup> To date, it is the information from this latter copy that has been commonly used in discussions of Breadalbane, and particularly Glenorchy, souming and livestock densities.<sup>50</sup> A comparison of the two documents immediately raises a number of problems. First, it is clear that the person who later transcribed the 1626 original made a number of copying errors, probably because he could not read the handwriting. Some numbers in the later list have been miscopied.<sup>51</sup> The clerk who wrote the 1626 original used an unusual contraction usually written 'vc', although it, or something similar, also appears as 'vc<sup>is</sup>' and 'vc<sup>s</sup>'. While this could be taken to represent the number ninety-five in the first entry (Lettirmor), it clearly means something quite different in the entries relating to the townships of Molaii, Bochylls and Arivean. The later copyist treated this contraction in different ways. In relation to Lettirmor he transliterated it to mean forty-eight. In the entries relating to Molaii and Bochylls he ignored it completely and in the entry relating to the township of Large he both transcribed it as the number six and also ignored it. Second, the scribe of the later copy also added information to the souming list that may have been relevant to his lifetime, but which is not present in the original. The copiest has in some cases added soums on what could have been a presumption, although it may also have been because it represented the types and numbers of animals on the townships in his day.

So, while souming averages of 50.7 cows, 49.9 sheep, 47.3 goats and 9.04 horses per township have previously been calculated using the figures from the eighteenth-century copy of the souming list,<sup>52</sup> it is now obvious that these calculations are inaccurate. Since it is still unclear what the 'vc' contraction was meant to represent, any calculation of livestock averages from the original souming list should exclude the four townships in which it is used.<sup>53</sup> Another two entries should also be ignored: no actual souming totals (except for horses in Kinachrakine) were given for the townships of Ardtaitill and Kinichrakin, and Croft Dalmally should also probably be excluded because it was clearly not a township. There is one final problem. In the entry for

<sup>48</sup> A distinction has been drawn between soums and stocking lists since the latter could be under-soumed, over-soumed, or equal to the soum. There is usually no way of determining which of these three possibilities is correct.

<sup>49</sup> NAS, GD112/16/13/1/1 (original); GD112/12/1/2/1 (copy).

<sup>50</sup> R. Dodgshon, *From chiefs to landlords* (1998), pp. 174–5.

<sup>51</sup> Oxen were not represented on the 1626 soum even

though there is independent evidence that some of the Glenorchy tenants kept them before that date (c.f. NAS, GD112/9/6). Accordingly, it may be presumed that oxen were counted in with cattle on the official soum.

<sup>52</sup> *Ibid.*, 174.

<sup>53</sup> Although the contraction only appears on part of the entries for Lettermor and Bochylls, specifically for cattle, it is probably safer to ignore the entire entry in each case.

Stronmillachan the statement regarding sheep and goats is ambiguous since it appears to refer back to the preceding number of horses. I have assumed, however, as per the norm for this document, that the numbers of sheep and goats were almost always equal to the number of cows and not the number of horses. If so, this leaves us with a total of 38 townships in the 1626 original for which we have good data sets. If the souming averages for these 38 townships are calculated, we arrive at figures of 53.0 cows, 49.9 sheep, 49.2 goats and 10.1 horses per township. These figures are reasonably close to Dodgshon's calculations from the faulty later copy and at first appear to support his statement that the townships in Glenorchy supported significantly more sheep and goats than townships in mid-Argyll.<sup>54</sup>

However, problems with the information contained in the 1626 original document do not end here. This is because the souming figures in it are directly contradicted on a number of occasions by other documents from the same archive. For example, although the township of Corries was apparently soumed at 48 cows [and] eight horses and mares [and] 48 sheep [and] 48 goats in the 1626 document, on at least two different occasions during the remainder of the seventeenth century it was stated that the entire township possessed a total of 48 soums.<sup>55</sup> Similar examples can be offered for other townships in the list.<sup>56</sup> This means that instead of treating the 1626 document as a list of livestock soums and positing that the word 'and' should be inserted after each separate species entry, we should instead read the document (as in the case of Corries) as, 48 soums of cows [or] 48 soums of sheep [or] 48 soums of goats. This interpretation immediately raises a further problem in relation to the numbers of horses, mares and staigs.<sup>57</sup> Should they be included or excluded in the total of 48 soums? Unfortunately, there is no way of deciding this from the seventeenth-century evidence alone. Even more importantly, this means that souming averages per Glenorchy township cannot now be calculated for each species because we simply have no idea what proportions of each of the three (or four) separate species were included in the set soum. What is also clear is that the Glenorchy townships probably contained significantly fewer animals in 1626 than calculated above or by Dodgshon.

In fact, the next point of comparison that can be made with the 1626 soum is a rental of Glenorchy that was compiled in 1730 and which also listed the soums of each township.<sup>58</sup> It is immediately obvious that the townships had undergone some kind of administrative organisation between 1626 and 1730 as this document separates the townships into four separate divisions: the Braes, the Middle, the Strath, and Glenstrae. Furthermore, not all of the townships or crofts listed in the 1626 soum are present in the 1730 list: Lettirmor, Lettirbeg, Corries, Croftauchlamalzie, Barawrich, Brekley and Mayne are all missing. This may be for a number of reasons. First, like Innergawnan and Ariechstallan, some may have undergone a process of amalgamation with other townships between 1626 and 1730. Second, the two Lettirs and Corries had been in wadset for a long time by the 1730s and the estate was clearly unable to regulate the souming of these lands. Third, since it is known from other sources that the township of Mayne was taken out of crop production before 1690 and converted into a shieling for the tenants of

<sup>54</sup> Dodgshon, 'Livestock production', p. 23.

<sup>55</sup> NAS, GD112/9/3/7/5.

<sup>56</sup> NAS, GD112/62/4/5.

<sup>57</sup> A staig is either a young horse under three years or a stallion.

<sup>58</sup> NAS, GD112/16/13/3/1.

Craig,<sup>59</sup> there is a strong possibility that other lands in Glenorchy could have undergone similar transformations by 1730.

This latter point explains why it is impossible to compare the two Glenorchy soums of 1626 and 1730 and determine if there were increases in stocking levels. As a result of changes in land use we obviously cannot compare like with like, even if it is assumed that the same method of souming was used on both occasions. It seems clear that between 1626 and 1730 some townships could be transformed from crop production to shieling grounds (and back again), while others were amalgamated. This has every appearance of an estate that was geared to the economics of supply and demand and willing and able to alter its production strategies accordingly,<sup>60</sup> although an environmental factor which necessitated change, like the awful storms experienced by other parts of Scotland between c.1690 and c.1710, also cannot be ruled out at this stage. Broadly similar alterations in production strategies can also be found upon the Grant estates in Strathspey after 1720 when a large number of shielings were first converted into farms before being re-converted back to common grazings, according to economic demands.<sup>61</sup> Either of these points (or perhaps both) would also help to explain why some townships in Glenorchy appear to have experienced a massive drop in souming capacity while others appear to have experienced a massive gain, and why only three of the townships in the 1626 list still appear to have possessed an identical soum in 1730.<sup>62</sup>

The penultimate document relating to stocking levels and souming in Glenorchy is dated to 1799.<sup>63</sup> This is a list compiled for the Breadalbane estate of 43 farms in Glenorchy and around lochs Etive and Awe. Only 31 farms out of this total were actually located in Glenorchy. The stocking data from this document has been converted into soums, using the 'standard' rates of one cow, half a horse, five sheep, or five goats per soum. This conversion enabled Dodgshon to compare the 1730 and 1799 soums and demonstrate that there had been an increase in livestock numbers after the Glenorchy farms had converted to specialist sheep production in the 1780s.<sup>64</sup>

Such an assumption about livestock numbers may be premature. Of the 35 Glenorchy farms in the 1799 list, only five of the entries list actual stock numbers. The remaining 26 entries only estimate what numbers of livestock the farms *could* support. These data sets should be immediately discarded since we have no idea whether the estimates were ever actually implemented in practice. This leaves a radically smaller basis (five farms) for comparison between the 1626, 1730 and 1799 data sets. Of these five, three appear to have undergone amalgamation with other farms since 1730. However, one of these three includes a place-name (Arinabee) that does not appear on either the 1626 or 1730 lists. This form may be either a scribal mistake or a shortened form of an earlier name or an entirely new township. Since there is no way of guessing which, this data set must also be discarded from any calculations. This means that it is only possible to compare four data sets.

<sup>59</sup> NAS, GD170/203/4/11B.

<sup>60</sup> The evidence suggests that the Glenorchy townships operated in two main economic markets. First, as a part of the internal Breadalbane market and second, with burghs as far afield as Inverness.

<sup>61</sup> NAS, GD248/533/2/82.

<sup>62</sup> These calculations were made on the assumption that the 1626 soum was meant to be read  $x$  cows +  $y$  horses. This may be misleading.

<sup>63</sup> NAS, GD112/9/3/3/30.

<sup>64</sup> Dodgshon 'Livestock production', pp.32-3.

TABLE 1. Comparison of the 1730 and 1799 soums in Glenorchy

Farm	1730 <i>soum</i>	1799 <i>figure converted into a soum</i>	<i>Difference</i>
Knockintay	64	90	+ 26
Strone and Succoth <sup>a</sup>	258.4	458	+ 199.6
Brackley	73.6	50	- 23.6
The two Larigs	116	136	+ 20

*Note:* <sup>a</sup> This assumes that the 'Strone' in question was Stronmonnessage and not Stronmilochan.

*Source:* NAS, GD 112/16/13/3/1; GD 112/9/3/3/30.

If it is assumed that the 1730 souming and the 1799 rental calculated their soums in the same way, and if it is further assumed that a soum equalled one cow, half a horse, five sheep or five goats on both occasions, then it is possible to calculate that three of the farms appear to show a rise in souming capacity and one shows a loss (Table 1). Unfortunately, there is no way of knowing just how representative any of these figures are for the rest of the farms in Glenorchy and the data set is really just too small to be useful. It is entirely possible that the three farms that show a rise in souming capacity were exceptions and that all the rest of the farms in the glen had a reduced souming capacity to compensate. All that we really can say is that in 1799 a small percentage of the Glenorchy farms still pastured three different species of livestock, cattle, sheep and goats.

The final document in relation to souming in Glenorchy dates to 1818 and it lists some fourteen farms in and around the Glenorchy part of the Breadalbane estate.<sup>65</sup> Although this document is called a souming it would actually appear to be a detailed stock list since it lists thousands of sheep for every farm. There are only three exceptions. The two farms of Corrychyll and Craig each held just less than 1000 sheep and the farm of Ardtettle only stocked cattle. Furthermore, Alexander Campbell, who compiled this list, clearly states that these numbers are for both summer and winter pasturing so that no farm would have to send sheep elsewhere during the winter. This document seems to be the first 'soum' to provide evidence of a massive increase in sheep stocking in Glenorchy although even this picture is probably slightly skewed since 1818 was also the first year after the end of the Napoleonic wars that saw an increase in sheep prices in the western Highlands.<sup>66</sup>

It should now be obvious that any attempt to compare stocking figures between the 1626 and 1818 lists has to make four key assumptions. First, that the acreage of an average soum in Glenorchy remained unchanged over the period. Second, that both lists estimated a soum to hold one cow or half a horse or five sheep or five goats. Third, that both soums had been calculated in the same manner. Fourth, even though it may be possible to trace the amalgamation of various townships between 1626 and 1818, it is also clear that smaller pieces of yet another property could also be occasionally detached or re-attached to the original township depending

<sup>65</sup> NAS, GD112/16/13/1/21X.

<sup>66</sup> *Ibid.* There is a document in the Breadalbane archive that describes how almost the whole of Glenorchy had

been turned over to sheep in 1783 (NAS, GD112/14/12/7/8) but this gives no indication whether the 'official' souming rates had been broken.

on the whim of the factor. These transactions are very difficult to trace and it should always be remembered that a comparison of land over time may not be comparing like-for-like as both the environment and pastoral resources could have changed.

If, however, for the sake of argument we return to the previous example of the township of Corries, in 1626 it held a total of forty-eight soums of cattle  $\pm$  eight soums of horses.<sup>67</sup> These numbers provide a theoretical maximum figure of sixty-four soums (assuming that one horse soum equals two cattle soums), and if this is then converted into sheep stock (further assuming that there were five sheep to each cattle soum), we arrive at a theoretical maximum stocking of 320 sheep for Corries in 1626. However, by 1818 this township (together with Drissai, Lettermore and Letterbeg) had become a part of the larger farm of Castles. If we return again to the 1626 figures, this means that further sheep totals for Drissai (235 sheep), Lettermore (320 sheep), Letterbeg (120 sheep), and Castles (300 sheep) should be added to the Corries total, providing a theoretical total of 1295 sheep on all five townships in 1626. Moving forward to 1818, the much-expanded farm held a maximum theoretical total of 4850 sheep and at least twenty-two cattle. On paper, this amounts to a fourfold increase in stock between 1626 and 1818 although once all the various assumptions are taken into account, it is not entirely clear how valid any comparison actually is.

### III

This article has demonstrated that the historical data relating to souming in Scotland, when used in isolation, has the potential to be very confusing. It is now clear that soums were not only calculated in different ways in different parts of the country, but also calculated in different ways at different times in the same area. Furthermore, there are also indications that the physical size of each soum varied over time and that different soums were assigned different numbers of the same species of livestock. As if this were not bad enough, it has been shown that the souming lists themselves are open to many different interpretations and that tenants could both under- and over-soum. In fact, unless a particular soum is closely defined at any given moment in time in terms of surface extent, quality of grazing, and in the numbers of livestock expected to pasture upon it, it is very questionable whether any reliable interpretation can be formed from the data unless it is accompanied by an accurate contemporary stocking list. It is virtually impossible to compare like-for-like and it is exceedingly unlikely that many sets of family papers in Scotland would contain all of the necessary information for souming lists to be used in any meaningful fashion. All of this means that it is probably mistaken to construct a quantitative model using different soums to estimate livestock numbers and their effect on the environment in Scotland over time. There are just too many assumptions that have to be taken into account and many of the data sets can be shown to be quite worthless in statistical terms.

However, all is not lost, particularly if researchers engaged in Scottish environmental history are willing to embrace input from other disciplines. The AHRC Research Centre for

<sup>67</sup> It is impossible to return to the 1730 figures as the soums for Castles and the two Letters are missing from the list because they had been wadset.

Environmental History based at the University of Stirling is currently running a Leverhulme-funded project in which historians, economists, ecologists and palaeoecologists are working together to measure the impact of humans on upland environments in Scotland. One of the major benefits of this inter-disciplinary co-operation has been to demonstrate the usefulness of palaeoecological data to historians, and *vice-versa*, whenever there are significant gaps in the data sets collected independently by each discipline. It is now evident that the inclusion of palaeoecological information in historical discussions allows a much fuller picture of both animal husbandry and plant communities over time to be constructed. The sudden regeneration or sudden disappearance of trees, together with the appearance or disappearance of cereal pollen and certain types of grass and weed pollen can tell us much about what use was being made of a local landscape. Admittedly, while such data cannot be used in the type of quantitative analyses that have been commonly used to date, it does open up exciting new avenues for historians to explore in our attempts to evaluate the overall effects of livestock production upon any historic Scottish landscape.