Northumberland's birds in the 18th and early 19th centuries: the contribution of John Wallis (1714-1793).

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SUMMARY

The background to John Wallis's work on Northumberland's birds, published in 1769, is described including a brief biography of the author and the manner in which his accounts were constructed. From a detailed review of Wallis's chapter on birds, including 50 accounts, some 68 taxa are identified of which 51 are covered in sufficient detail to indicate that they appear to be species found in Northumberland at that time. A systematic list, constructed for these species, is divided into a number of groups covering seabirds, waterbirds, birds of prey, gamebirds and rails, waders, landbirds (non-passerines) and passerines. Within each group is included an analysis of some of the factors that appeared to be affecting population levels from the 17th-19th centuries. A concluding discussion examines the changes found in bird populations between Wallis's time and the 19th century in terms of the intensification of agriculture and industry and the exploitation of natural resources.

INTRODUCTION

In his account of the natural history of Northumberland (Wallis 1769), John Wallis made a very significant contribution to the ornithological history of Northumberland. In his contents list, he cites Chapter IX as 'Of Birds. The most curious and uncommon, both native and migratory.' This selective approach results in an incomplete list, covering notionally just 50 species, and has caused the work to be discounted to some extent by subsequent writers such as Bolam (1912). Yet Wallis's work covers many key species, particularly birds of prey and game birds, and was composed at a very critical time in the mid 18th century when guns were still primitive weapons; when there were still considerable thickets and woods in the uplands; when timber was still allowed to mature; and when large areas of mosses and fens were undrained. It therefore gives an insight into the state of bird-life in the county in a more *natural* form, that is less influenced by man, than has been possible in the subsequent 200 years. Some phenomena which are thought to be unusual today were the norm before the 19th century. For example, it has been claimed recently in the popular press that some species are behaving unnaturally such as the cormorant *Phalacrocorax carbo* feeding inland or are exceptionally abundant today such as the sparrowhawk *Accipiter nisus*. Judging by his accounts, Wallis would have regarded such features of the countryside as perfectly normal. He also provides some data potentially useful as baselines for modern decisions on conservation, although of course no baseline can be regarded as absolute.

In addition to concerns over the incomplete list of birds in Wallis's work (Hancock 1874; Bolam 1912), there is little doubt that later writers also found it difficult to relate to the geographical area covered. Wallis appears to have been equally at home recording birds in the North Pennines as in the Tweed and Farne Islands areas. After Wallis there is a marked geographical bias in ornithological recording towards the north of the county with observers such as Selby, Evans and Bolam based mainly in this area. Indeed, to find 18th century information on the western part of the North Pennines to compare with Wallis, it has been necessary in the current work to make extensive use of the accounts for Cumberland by Heysham and Richardson in Hutchinson (1794-97) and by Macpherson (1892).

In other areas of historical studies, the integrity of Wallis does not seem to be in doubt. In the *Flora of Northumberland*, for instance, extensive reference is made to Wallis's work for information on historical plant distributions (Swan 1993). Concerning molluscs Blackburn (1932) said that 'While

[Wallis's] descriptions are quaint and vivid they are, for those early days of conchological knowledge, fairly accurate.' For lepidoptera extensive use has been made of Wallis's section on insects for early county records of a number of species (Dunn & Parrack 1986). Mennell & Perkins (1863-64) wrote 'An incomplete, but very interesting list of our Mammalia, is to be found in Wallis's delightful History of Northumberland (1769). In this work, none of the smaller species are alluded to, but of the larger ones much of interest is recorded, the more important parts of which we have transferred, generally in the author's own words, to our pages.' We know too that Hodgson (1832 p.viii) admired Wallis as al local historian: 'As an author he was remarkable for integrity and simplicity. He never borrows a fact without acknowledging where he obtained it.'

Wallis provides descriptions in many of his species accounts and gives extensive synonymy to clarify which species are being discussed. However, we should bear in mind the gaps in the ornithological knowledge of the mid-18th century and the difficulties in field identification without easily used optical equipment. There is undoubtedly confusion between different species in a few of Wallis's accounts and in this paper all the descriptions and synonymy have been examined critically, in the light of current ornithological knowledge, before assignment to a particular species is accepted.

Early Bird Studies in Northumberland

More recent accounts of the birds of Northumberland have tended to omit records made before the 1830s, in contrast with those for Cumberland and Scotland where Macpherson (1892) and Baxter & Rintoul (1953) respectively very thoroughly examined and reported on all early records. Selby was the first writer to cover all of Northumberland's birds but his C*atalogue* (1831) makes very few references to earlier work and some of the accounts are very brief. Interestingly, more detail concerning Northumberland can often be found in Selby's *Illustrations* (1833), a source which has been overlooked to some extent in previous studies on the history of birds in the region. Also very much overlooked is Wingate's *Ornithology* (1825), including a small contribution from Bewick, which appears to cover particularly the period c1810. While a number of entries add very little to those of Wallis, others provide useful original corroboration of both Wallis and other early sources.

The first stage in rectifying this neglect of early records in Northumberland was Gardner-Medwin's analysis (1985) of the accounts by the earliest writers, mainly from the 16th-18th centuries, including John Leland, William Turner, John Ray, Thomas Kirk and Thomas Pennant. Except for Pennant, who was his contemporary, all these authors preceded Wallis. The aim of the present work is to continue the task of compiling a more authoritative ornithological history for Northumberland by considering in depth Wallis's work and relating it to contemporary environmental history and to subsequent changes in the status of the birds he recorded.

Biography of Wallis

Much biographical information on Wallis can be obtained from his entry in *Men of Mark Twixt Tyne and Tweed* (Welford 1895) and his obituary (Richardson 1842 pp. 355-7; Hodgson 1811-32 **III** pp. 70-73) which appeared in the *Gentleman's Magazine*. He was baptised 3 December 1714 at Kirkhaugh as 'John, son of John Wallace, of Castle Nook' into a family which had resided in the Knaresdale area of the South Tyne since at least the 16th century. Kirkhaugh, in Northumberland, lies between Slaggyford and Alston on the South Tyne. A note in the church there records that John Wallis was born at Castle Nook Farm on which Whitley Castle stands.

John Wallis matriculated to Queen's College, Oxford, aged eighteen, in February 1732-33 being described as 'John Wallis of Croglin, Cumberland, pleb.' His family had moved to Croglin at some stage in his youth. He graduated B.A. in March 1736-37 and M.A. in June 1740, and shortly afterwards obtained a curacy in the Portsmouth area. In 1745 he returned to Tyneside where he opened a school in Wallsend. Around 1748 he published his first work containing letters, poetry and sermons and was appointed curate at Simonburn, under Rev. Wastell. Simonburn was the largest, wildest and most unproductive parish in Northumberland, extending from the Roman Wall northwards to Liddesdale in Scotland. As curate Wallis would have had ample opportunity for exploring all areas of the parish. It is not surprising therefore that it was here that he became very interested in botany leading on to other aspects of natural history. The results of his historical studies, made from about 1748 to 1769 during his appointment at Simonburn, were eventually published as *The History of Northumberland* in two volumes, the first of which describing the natural history was reckoned by Richardson (*ibid*) to be the more valuable. However, Hodgson (1811-32 **III** p. 72) who was perhaps better placed to judge the second volume says 'In the history of estates and families, in particular, its value is great.' The whole work attracted 294 subscribers.

Although his book was apparently well-received, Wallis did not prosper. He had earlier incurred some criticism in 1762 over his handling of the discovery of an unusual skull at Simonburn (Richardson 1842 p. 107). In the 1770s, more serious problems arose and in 1775 Wallis resigned as curate of Simonburn after a dispute with the rector. He then became curate in the Darlington area until his retirement in midsummer 1793 when he moved to the village of Norton. There, in his 79th year, he died on 23 August 1793, or 23 September according to Welford (1895), leaving a small, but valuable collection of books, chiefly on subjects of natural history.

Arrangement of Wallis's Text

Wallis (1769 pp. 309-346) gives thirty-seven accounts of *Fissipedes* (birds with fissured digits) and thirteen of *Palmipedes* (those with webbed feet). Information on birds has also been found in other parts of volume 1, in for instance the descriptions of the lakes in the county and of mammals.

An analysis of Wallis's accounts shows that, in general, they follow the pattern of starting with a statement on distribution in Northumberland, continuing with a lengthy description of the taxon and concluding with further information on occurrences in Northumberland. The descriptions of birds tend to follow those of Willughby & Ray (1676) and notes on breeding habits those of Linnaeus (1746). For instance, all the descriptions of seabirds follow closely those of Willughby & Ray (1676) except those of St. Cuthbert's duck and soland goose. A similar situation is found for small passerines where only the crossbill description is not readily attributable to Willughby & Ray (1676). It is not clear that Wallis made any truly original descriptions though those of some of the birds of prey, crows, game birds, plovers and corn crake appear to contain some original elements. These perhaps are the species with which he was most familiar at Simonburn. Although most of the terminology used is readily comprehensible, a short glossary is given at the end of the article to define less obvious terms.

Each account concludes with references which frequently cite: 1) **Will. Orn.:** Willughby & Ray (1676), 2) **Raj. Av.:** Ray (1713); 3) **Linn. Faun. Suec.:** Linnaeus (1746; 2nd ed. 1761); 4) **Charlet. Av.:** Charleton (1668); and 5) **Alb. Orn.:** Albin (1738). The cited sections in the first four of these sources have been checked to confirm that the species referenced are consistent with those claimed in Wallis's accounts. An example of a complete entry in Wallis's text showing a typical format is given in Figure 1. As discussed later, this account, which is transcribed and discussed later in this paper, is believed to refer mainly to the brent goose *Branta bernicla*.

16. The *Bernacle (k)* is frequent near the river *Tweed*, and *Holy Iſland*, in winter. It is conſiderably ſmaller than a gooſe, and larger than a duck. The beak is ſhort, broad and black. The plumage of the head, neck, and lower part of the thighs, is black; the belly cinereous; the back variegated with black and grey; the tail-feathers a dark grey; the ſhort plumage of the wings, white, black, and cinereous, in alternate variegations. The tail is black. The back-roe is ſhort, and ſlender. The caſe of one ſuch was ſhewn Mr. *Ray*, at Sir *William Forſter's*, of *Bamborough*[a].

(k) Anſer Scoticus verus Bernicla. , , , , , , Bernicla ſ. Bernacla. *Will.* Orn. p. 274. *Raj.* Av. p. 137. Bernicla. BERNACLE. SCOTCH-GOOSE. CLAKE-GOOSE. *Charl.* Av. p. 103. n. 5. Anas capite colloque nigris. *Linn.* Faun. Suec. p. 32. n. 91.

[a] *Ray's* Topograph. Obſervat. Vol. 1. p. 15.

Figure 1. Wallis's entry for the Bernacle (facsimile).

Systematic List

The systematic list below contains all species which it is believed are described by Wallis as the subjects of his accounts. The entries in the list are classified into groups as seabirds, waterbirds, birds of prey, game birds and rails, waders, non-passerines: landbirds, and passerines. The list follows the order given by Voous (1977) except that the sea ducks and auks are included in the seabirds group and within each group the order is sometimes varied for convenience to match that of Wallis. Each group is preceded by an introduction in which common trends and possible causes of population changes are discussed. To conclude each group, other species not mentioned by Wallis are introduced where the omission is significant or where new relevant information has been obtained.

For each species, the heading indicates, on the left, the current English and scientific names; and on the right the account numbers (F = *Fissipedes*, P = *Palmipedes*) and the main names used by Wallis. The subsequent text begins with an attempt to establish identification and then reviews the status established by Wallis in relation to earlier and later sources. In general Wallis's text is quoted only very selectively in order to make particular points. Species mentioned incidentally, for instance in descriptions as part of size comparisons, are not included in the systematic list but are itemized in Appendix 1. There is no certainty that Wallis actually saw these species in Northumberland though it would be unusual to make such comparisons without familiarity with the species concerned. Square brackets around a species heading indicate doubt concerning either identification or location.

1. Seabirds

This section covers those species which are essentially maritime in character, including divers, shearwaters, petrels, gannets, cormorants, sea ducks, gulls, terns and auks. In Northumberland, such species are relatively well documented compared to other groups of birds. There is a clear bias in existing works towards the Farne Islands with Hawkey (1991) covering the entire history of bird-

life on the islands and Gardner-Medwin (1985) the early accounts by Ray in 1661 and 1671, Kirk in 1677 and Pennant in 1769. While the timing of Wallis's book in 1769 is contemporary with that of Pennant's visit to the Farne Islands, it is apparent from Wallis's account of the Razor-bill on the Farne Islands (*Palmipedes*-8) that he actually visited the islands much earlier:

> The common sea-birds breed on the same cliffs in great numbers (See Ray's Select Remains. Itin. ii. p.181, to p.185). I had the curiosity about twenty years ago to visit this famous bird-island, towards the middle of July, when there is the greatest shew of birds and eggs, and saw the latter lie as thick upon the rocks, and among the marine herbage, as represented by Holingshead (Hol. Chro. Vol.1), and Leland (Lel.Itin. Vol.6 p.60). The birds on being disturbed, rise, as it were, in battalia, and darken the very air, except the Coulternebs, and the beautiful Sheldrakes, Cuthbert-Ducks, and Cormorants, which take refuge in their subterrene or cavernous retreats, if they can reach them

Besides the obvious healthy state of the Farne Islands colony at this time, this would imply that Wallis's observations should be dated in the 1740s rather than the date of his book of 1769. Later many seabird populations in Britain underwent dramatic population declines through the 19th century due to excessive egg collecting at colonies and an increased and much more effective shooting of adults for sport (Holloway 1996). However, the lack of quantitative historical data makes it difficult to draw firm conclusions on trends in Northumberland through this period. It is likely that considerable population fluctuations also occurred as egg collecting and shooting varied in their intensity, further complicating the picture. Looking at the following accounts, it can be seen that three species (shag, eider and great auk) did decline at the Farne Islands between Wallis's time c1760 and the 1830s while puffin also probably declined. Two more, the shelduck and razorbill, appeared to have declined by the 1870s when clearer status information became available. In the county as a whole, the cormorant/shag complex suffered a marked loss of range on the coast from c1760 to the 1830s and after the 1830s the cormorant is no longer noted from inland areas (Hancock 1874; Bolam 1912). An even earlier casualty at the Farne Islands may have been the black guillemot which appears to have bred there in the 17th century.

Gannet *Morus bassanus* P11: Soland goose

This species was 'often shot in autumn in its way southward from Scotland, on the commons near the Tweed and Till, and sometimes in winter, both there and on the sea-coast, and in other parts of the country.' An adult is described by Wallis that was shot at Keepershield, near Haughton Castle, 'in the great snow' in March 1763. It was also recorded inland at Prestwick Carr by Maddison (1830) and Bolam (1912) noted that it 'is frequently carried far out of its course by a storm, and is then sometimes found in inland stations.' There is a clear impression that it was more frequent inland in the 18th and 19th centuries than today.

Cormorant *Phalacrocorax carbo* P1,8: Cormorant

It was reported that this species was frequent in our larger rivers and lakes, especially in those towards the sea, and that it bred 'upon the islands of Farn and Coquet, and other solitary retreats on the sea-coast, in cavernous rocks and precipices; and sometimes upon trees, with the Heron.' A description is given of a first-year bird shot in 1762 on the North Tyne at Haughton Castle. Wallis's measurements are reasonable for this species (wingspan 54 inches (137cm), length 41 inches (104cm)) compared to those by Jonsson (1992) of 130-160 and 80-100cm respectively.

In the 19th century, persecution of the cormorant became intense (Bolam 1912) through shooting and through egg-collecting at the breeding colonies such as the Farne Islands (Selby 1826). This persecution, which started to abate in the late 19th century (Bolam 1912), undoubtedly led to a contraction of its breeding and wintering range in Northumberland resulting in a misunderstanding of its habitat preferences. Later writers were obviously puzzled by Wallis's claim that the cormorant

was frequent inland in his day and ignored this statement on distribution. Yet Selby (1833) reported it as frequently found in winter on 'our rivers and lakes at a considerable distance from the sea' and Maddison (1830) noted it inland at Prestwick Carr. Today, there is no reason to doubt the presence of the species inland in the 18th century given the high numbers found on reservoirs and rivers since the 1970s. Tree-nesting, which now occurs in some parts of Britain, also appears to be the revival of an old habit, with cormorants nesting 'in lofty trees in Norfolk' c1540 (Gardner-Medwin 1985) and, as indicated by Wallis, in trees on the Northumberland coast in the 18th century. Wallis also indicates a wider breeding range on the coast than that recorded since but, as seen in the next account, there was considerable confusion between the two *Phalacrocorax* species and it is probably only safe to attribute the greater range to cormorant/shag *Phalacrocorax* sp. An example of the problem here is Turner's report of cormorants nesting in the Tyne Estuary in the 16th century (Bolam 1912). Gardner-Medwin (1985) thought the original Latin text could equally well refer to shags.

Shag *Phalacrocorax aristotelis* P2: Lesser cormorant, Shag, Crane

This species is reported as 'frequent in the same waters with the former [cormorant].' An adult is described as 'somewhat larger than a domestic duck' with wingspan of 44 in (112cm) and a 'body [that] is small, flat and depressed, like the dun-divers.' Dun divers appear to be red-headed sawbills (see red-breasted merganser/goosander in Appendix 1). The wingspan is slightly above the range quoted by Jonsson (1992) for the shag of 90-105cm but well below that given for the cormorant by the same source of 130-160cm. It was thought to breed annually 'on the island of Farn, and in other places among the rocks on the sea-coast, but most commonly upon trees.'

It is clear, from the descriptions that Wallis was familiar with the differences between cormorant and shag. However, confusion in field observations between these two species is prevalent in early writings and the implication that shags were found inland and the statement that they bred upon trees are not acceptable today without further evidence. For instance, for Scotland, Baxter & Rintoul (1953) note that 'the Shag is more truly marine than the Cormorant ... its appearance on inland waters is rare' and make no mention of tree nesting. The statements on tree nesting appear to have been copied from Willughby & Ray (1676 p. 249) and there is no indication that they apply to Northumberland. Breeding on the Farne Islands in earlier times is supported by Pennant who found large numbers there in 1769 and by other writers in the 17th century (Gardner-Medwin 1985). The breeding of *Phalacrocorax* sp 'in other places among the rocks on the sea-coast' is supported by the current small colonies of shags at Needles Eye (near Berwick) and Dunstanburgh. Following Wallis, persecution reduced numbers very markedly at the Farne Islands by the 1820s (Selby 1826) and there was little recovery until c1940 (Hawkey 1991).

Shelduck *Tadorna tadorna* P4,8: Sheldrake, Bergander, Burrough-duck

A detailed description of a drake in breeding plumage is given. It was reported as a native of the Farne Islands, implying that it bred there in the 1740s. Earlier visitors to the Farne Islands in the 17th century did not report it but Pennant saw it there in 1769 (Gardner-Medwin 1985). Hancock (1874) noted it as 'resident, but not by any means common' hinting at a decline in the mid-19th century.

Eider *Somateria mollissima* P3,8: St Cuthbert's duck

The Farne Islands has held a breeding colony of eiders at least since the 7th century when they were associated with St. Cuthbert (Gardner-Medwin 1985). It is no surprise therefore that Wallis reports it as a 'native of the island of Farn' and, in his razorbill account (see seabirds), indicates that they were one of the common species found at the Farne Islands on his visit in the 1740s. Wallis also mentions the earlier accounts by Willughby and Ray of St Cuthbert's Ducks on the Farne Islands.

Their accounts and those of Pennant from his visit in 1769 indicate a healthy population (Gardner-Medwin 1985). Problems, however, arose in the 19th century. Selby (1833) records that 'upon the Northumbrian coast many Eiders breed upon the group of Fern Islands ... and which with Coquet Island ... may be reckoned the most southern breeding-stations of these birds' and adds in a footnote that 'in consequence of having been wantonly molested [at the Farne Islands] during the breeding season, the Eiders have of late years very much decreased.' The specific cause of the decline appears to have been indiscriminate egg collecting (Selby 1826). Hancock (1874) concurs with this decrease noting it as 'a resident, but not by any means abundant. Several pairs breed on the Farne Islands.' This decrease in the 19th century has not been emphasised by Hawkey (1991).

Very surprisingly Wallis says that 'in winter, they frequent the large rivers.' However, descriptions are given of both the drake and the female and it is stated that 'the male here described was shot in the river Tyne, near Hexham, in a hard frost, and presented to me.' This record presumably can be dated between 1748-69 when Wallis lived at Simonburn and, while there is no reason to doubt this instance, it may be that too much was read into it. Eiders have been extremely rare inland in Northumberland with only about six instances from this one in Hexham through to 1978 (Galloway & Meek 1978). There have been more records on the lower Tyne in recent years but it is possible that there is confusion with other species such as the goldeneye in Wallis's sight records.

Guillemot *Uria aalge* P7: Guillemet, Sea-hen

This auk was recorded as breeding annually 'on the steep cliffs of the island of Farn' presumably the Pinnacles. The brief description of an adult in summer plumage is satisfactory but the bill lengths for both this species and razorbill at 'near three inches', that is 7.6cm, are much greater than the 4.8cm of Cramp (1977-94 **IV**). However, it does depend on how the measurements were made. Pennant, from his visit in 1769, wrote that the Pinnacles were 'entirely covered with Guillemots' (Gardner-Medwin 1985). The species appeared to survive the 19th century in better numbers than many other seabirds (Hawkey 1991) with a 'numerous colony' noted at the Farne Islands by Selby (1826).

Razorbill *Alca torda* P8: Razor-bill, Auk

This species, stated as 'another of the Farn-island visitants in the summer', is described satisfactorily in considerable detail. It is of interest that it is not noted as being scarce. Its population on the Farne Islands may then perhaps have been at a higher level than in the 19th century when only a few pairs nested there (Selby 1826). In 1876 egg-collectors are quoted as saying that the razorbill had formerly been more abundant (Hawkey 1991). Earlier writers than Wallis had noted the Raxorbill on the Farne Islands in the 17th century and Pennant found it there in 1769 (Gardner-Medwin 1985).

Great auk *Pinguinus impennis* P*5*: Penguin

This account is quoted in full because of its historical significance as the last record for this species in Northumberland:

> The Penguin, a curious and uncommon bird, was taken alive a few years ago in the island of Farn, and presented to the late John William Bacon, Esq; of Etherston, with whom it grew so tame and familiar, that it would follow him with its body erect to be fed.

The synonymy for the penguin was given by Wallis as *Anser magellanicus, Penguin nautis nostratibus dicta* and *Alca rostri sulcis octo; macula alba ante oculum.* This, and the circumstances described, led Hancock (1874) and Bolam (1912) to accept the record as a great auk and there appears to be no reason to dispute their conclusions. Wallis was clearly familiar with the common auks; the traditional name for the great auk until c1785 was the penguin (Lockwood 1993); the

illustration by Willughby & Ray (1678) of a great auk is entitled penguin; great auks were known to be easy to tame (Yarrell *et al* 1871-85 **IV)** and the individual was clearly thought to be exceptional by all concerned. The record is also quite plausible in historical context: the great auk was still a rare and irregular breeder on Orkney and Shetland through the 17th and 18th centuries and ranged south as far as southern Spain in winter (Nettleship & Birkhead 1985 pp. 63-69).

The date for the record can be determined more precisely from the genealogy of the Bacon family. John William Bacon succeeded to the estate of Etherston (Adderstone) in 1763 and died in 1767 so the record is dated most likely 1763-67. In much earlier times in the 9th and 10th centuries, the great auk appears to have been a commoner visitor to Northumberland; its remains found in the excavation of Green Shiel at Holy Island (Beavitt *et al* 1987-90 p. 11) . The description of the breeding habitat of the great auk as low-lying offshore islands with a gently shelving shoreline (Nettleship & Birkhead 1985 p. 177) is compatible with its having been a former breeder on the Farne Islands.

Puffin *Fratercula arctica* P6,8: Coulterneb, Pope, Tommy noddy

The coulterneb or pope was recorded as 'an annual visitant of the island of Farn, where it breeds.' A very detailed and accurate description is given. Pennant in 1769 also found puffins, under the local name of tom noddies, at the Farne Islands and they were also noted breeding there in the 17th century (Gardner-Medwin 1985). The size of the population in the early 19th century is not clear: Selby (1833) said 'many resort to the Fern Islands' while Hancock (1874) reporting on a visit to the Farne Islands in June 1831 said 'we met with it breeding there, but in no great numbers.' It is probable that Hancock's report is the more accurate as other seabirds were reported as declining at this locality at this time (see shag, eider). From 1870 the Farne Islands colony appeared to be recovering (Hawkey 1991).

Other species: an interesting omission from Wallis's accounts is the **black guillemot** *Cepphus grylle.* Ray's description of the puffinet, recorded as breeding on the Farne Islands in 1671 (Gardner-Medwin 1985), can leave no doubt as to its identity as a black guillemot in summer plumage. Kirk in 1677 also made observations suggesting this species but Pennant in 1769 recorded the black guillemot without any further comment (*ibid*). In the Allan MS the black guillemot is noted as found `in the Bass Isle of Scotland and St Kilda, and the Farn Islands' (Fox 1827). Selby (1833) was dismissive of recent claims asserting that in almost annual visits to the Farne Islands over the last twenty-five or thirty years he had not seen any black guillemots, although they did still breed on the Isle of May. Pennant's claim and the evidence of Fox should perhaps be treated with caution and indeed all Pennant's records for this species in England and Wales are questioned by Holloway (1996). It is probably safe to conclude that the black guillemot did nest on the Farne Islands in the 17th century but it is less certain that it continued to do so in the 18th century.

2. Waterbirds

This section covers those species typically frequenting estuaries, rivers and lakes, excluding the waders which have a section to themselves and those ducks which are found almost exclusively at sea or on the coast. It therefore includes herons, storks, swans, geese and ducks other than sea ducks. In spite of being very poorly drained in places, 18th century Northumberland actually held few large areas of open standing water. On old maps, however, we do see the loughs around the Roman Wall - Greenlee, Broomlee, Crag and Grindon Loughs - in the same form as they are found today. These ancient loughs are at considerable altitude but they appear to have suited the bittern, osprey and marsh harrier in Wallis's time. If open water was at a premium in historical Northumberland, fenland was not. Lowland fens were found in a number of areas including along

the Tweed, around Newham and in the Matfen/Ponteland area. Many of these fens were drained during the 18th century.

Between the accounts of Wallis and Selby, therefore, vast habitat changes occurred involving the drainage of many fens and moors across the county (Bailey & Culley 1805). Only a few sites such as Prestwick Carr, the last remnant of the vast Matfen/Ponteland wetland, which was eventually drained in 1857 (Hancock 1874), and the loughs near the Roman Wall at Haltwhistle survived as viable wetlands. The bittern appears to have become extinct as a result of the drainage schemes and the marsh harrier and osprey also suffered loss of habitat. Around 1850 the first of a generation of large reservoirs was constructed at Whittle Dene but these waters lacked the extensive reed beds of the old fen lands.

Bittern *Botaurus stellaris* F20: Bittern, Bittour, Mire-drum

It was stated by Wallis that the bittern is 'frequent about mosses' and 'most of our alpine mosses have its company.' Detailed descriptions are provided, based on those of Willughby & Ray (1676 p. 207) and Charleton (1668 p. 103), of an individual shot at Widdrington Park and of the eggs. It is also mentioned that 'a moss to the north of Many-Laws, in the parish of Carham, is rarely without it, where it is called the Mire-Drum.'

On the mosses of Bewcastle in Cumberland, this species was still found in the 1790s (Hutchinson 1794-97) and it survived at Prestwick Carr at least until the 1820s (Maddison 1830). However, Selby (1831) reported that 'the Bittern is now but rarely met with in the northern counties, although, before the drainage of our bogs and mosses, it used to be common and well known' and listed additional sites of Newham Lough and near Berwick upon Tweed. Prestwick Carr and Newham Bogs were probably its last refuges as a breeding species in Northumberland around 1820-30. Baxter & Rintoul (1953) indicate that the major decline in Scotland was from 1790-1840 and a similar but perhaps slightly earlier period of decline appears to apply in Northumberland.

Grey heron *Ardea cinerea* F21,1,12, 20: Ash-coloured heron, Hernshaw

This was reported as common, building *gregatim* upon trees. It was also stated (see cormorant) that it sometimes nested in trees on the coast. The style of life in a 'fine hernery' on a farm of Sir Harry Grey's on the Glen, under Cheviot, is described in detail. In those days this species bred in large groups in high trees in a conspicuous manner. Since then and particularly from around the 1920s it has tended to move into casual, outlying sites (Bolam 1932). Although Hancock (1874) reported that it was 'a common resident, but less abundant than in former times', it has generally maintained its population levels despite occasional crashes due to cold winters and persistent persecution.

White stork *Ciconia ciconia* F37: White stork

This is described as an uncommon bird in England. One, killed near Chollerford Bridge 'in the beginning of the year 1766', is described in detail. It is reported that:

> The case of the bird killed here was fixed against the west front-wall of the inn [at Chollerford], where it remained for a long time, with the erroneous name of that more rare bird, the Flamingo, put up under it in writing; a bird of quite a different figure and colour. However, this wrong name drew together crowds of people from the adjacent parts to see it, who for some time returned satisfied that they had seen the Flamingo, the most remarkable bird hitherto known.

This would seem to be the first recorded mass birdwatch in Northumberland, made more noteworthy by an identification error.

Whooper swan/Bewick's swan *Cygnus cygnus/C. columbianus* P13: Swan

Wallis noted that ‘in frosts and snows of a long continuance, the stately Swan sometimes repairs for refuge to the rivers Tweed and Till, and there receives from the sportsman the untimely fate it would escape.’ The synonyms given by Wallis of ‘Wild Swan’ and ‘Hooper’ indicate that we are dealing with the whooper swan, It appears to have been a rather scarce hard-weather visitor. Selby (1833) reported a similar status: ‘in England its appearance is not so certain, being governed by the state of the season. ... It is, only, therefore, when the winter sets in with unusual vigour in the northern parts ... that they extend their equatorial migration to more temperate climates.’ Selby cites peak seasons of 1784-85 and 1788-89 in the 18th century. Richardson (1842 p. 319) supports the latter date with an observation in January 1789 that a ‘flight of swans, thirteen in number, alighted in the Derwent, near to Mill-house-burn. It is probable that they were a flock ... driven from the north by the severe weather.’ Since Bewick’s swan was not separated from whooper swan until 1829, we cannot say with certainty which of the two species was actually recorded in Wallis's time but analysis of old specimens would suggest whooper swans very much predominated (Selby 1833).

Bean goose *Anser fabalis* P12: Wild goose

Wallis’s account provides evidence for the bean goose being the commonest grey goose in the county in the 18th century. He notes ‘the Wild Goose, in its periodical flights southwards in autumn ... often alights on the commons near the Tweed and Till.’ The description is given below:

> It is of the size of a domestic heath-goose, not fed in the grounds of better culture. The beak is above two inches long, dentated on the sides, black at the tip, and towards the base, and of a saffron-colour in the middle. The eyes are large, with a white line under them. The whole upper plumage is grey; the under one white, with a cast of grey on the breast. The legs and breast are of a saffron-colour, and the claws black.

The saffron bill with black tip and base and saffron legs matches very well the description of Cramp, (1977-94 **I**) for bean goose. The size also appears right with Wallis's size of a ‘domestic heath-goose, not fed in the grounds of better culture’ matching well the ‘averaging only slightly smaller than Greylag Goose but not so bulky’ of Cramp (1977-94 **I**). The status of the bean goose as the common grey goose of the 1760s is consistent with that given in the early 19th century as a periodical winter visitant, very numerous, and in large flocks (Selby 1831). Maddison (1830) also records this species at Prestwick Carr as the common wild goose *Anas sylvestris*, the latter being a synonym for this species. In other northern areas, the bean goose was also the common grey goose around this time being noted in Cumberland as ‘very frequent ... in severe winters’ (Heysham 1794-97) and in Scotland as historically until c1870 ‘the most numerous of the Grey Geese’ (Baxter & Rintoul, 1953). In Northumberland, the final years of plenty for the bean goose appear to have been the early 1930s (Bolam 1932). The subsequent decline coincided with a major reduction, through persecution and changes in forest habitats, in the Scandinavian breeding population (Cramp 1977-94 **I**). Long before Wallis it may have been the case that the greylag goose *A. anser* L. was at least as common as the bean goose. Selby (1833) thought, from ‘our older writers’, that the greylag goose ‘was formerly very abundant in Britain ... breeding annually in great numbers in the fens.’

Wallis thought that the wild geese visiting us in winter were of the same species as those breeding in the north of Scotland. Hancock (1874) reveals that this was not the case: ‘It has been asserted that the bean goose breeds in Sutherlandshire; ... until our visit ... in 1849 when it became evident that the supposed Bean Goose was really the Grey Lag . We saw no trace of the former.’

Brent goose *Branta bernicla* P10: Bernacle

Wallis’s account, shown in Figure 1, provides some valuable fresh evidence to assist in the discussion over which forms of this species visited Northumberland in historical times:

> The Bernacle is frequent near the river Tweed, and Holy Island, in winter. It is considerably smaller than a goose, and larger than a duck. The beak is short, broad and black. The plumage of the head, neck, and lower part of the thighs, is black; the belly cinereous; the back variegated with black and grey; the sail-feathers a dark grey; the short plumage of the wings, white, black, and cinereous, in alternate variegations. The tail is black. The back-toe is short, and slender.

The description is clearly of a brent goose with the small size, black head and neck, and dark grey primaries. The variegated pattern on the short plumage of the wings suggests a juvenile/first-winter bird and the cinereous belly indicates the pale-bellied race *B.b.hrota* Müller. Moreover Willughby & Ray (1676 pp. 274-5) use the names bernacle, for the pale-bellied form with the underside of the body as 'white, with some mixture of cinereous', and brent goose for the dark-bellied form with breast of a dark grey. It therefore appears that the pale-bellied brent goose, one of Lindisfarne's most important winter visitors today, was also common in the Holy Island/Tweed area c1760. Selby (1831) said the brent bernicle 'resorts to the eastern and southern shores during winter, in immense flocks' and Hancock (1874) noted the brent goose as 'a common autumn and winter visitant. Great numbers of it are occasionally shot at Fenham Flats.' However, neither accounts give information on the race involved.

Selby (1833) gives more details: 'Upon the Northumbrian coast a very large body of these birds annually resorts to the extensive muddy and sandy flats that lie between the mainland and Holy Island. ... This part of the coast appears to have been a favourite resort of these birds from time immemorial, where they have always received the name of Ware Geese.' A description is also provided indicating 'under parts of the body french-grey; with the feathers margined paler' and 'back, scapulars, and wing-coverts, clove-brown.' It seems reasonable to assume that Selby prepared the description from a specimen obtained at Lindisfarne or at least one representing the race with which he was more familiar. This suggests that the race found in Northumberland at this time had a french-grey (pale blue) belly and a clove-brown (dark brown) back corresponding to the pale-bellied form. Bewick (1804) also describes a brent goose of the pale-bellied race: 'the upper parts ... are darker than the belly, which is more mixed and dappled with paler cinereous and grey.'

The dominance of the pale-bellied form is extended to the late 19th century when Chapman (1889 p. 198) noted: 'These dark-breasted birds are the exception, the vast majority being pale grey or dusky below, all more or less conspicuously barred, especially about the flanks.' Further, all four plates by Chapman (*ibid*) on brent geese show only the pale-bellied race and Chapman repeats the statement on the relative abundance of the races in the second edition of *Bird-Life of the Borders* in 1907. Muirhead (1889-95) reported: 'Immense flocks frequent Fenham Flats, near Holy Island ... The Brent Goose can at once be distinguished from the Barnacle Goose by its black head and the white patch on the side of the neck.' This indicates the pale-bellied race was present on Holy Island because, if the dark-bellied form *B.b.bernicla* L. had been present, another obvious difference would have been the shade of the belly.

It is not the intention here to adjudicate on the differences of opinion between Chapman (*ibid*) and Bolam (1912) on which form predominated at Holy Island in the early 20th century. Meek & Little (1978) discuss in detail the conflicts between their accounts. However, it is worth stressing that, from Wallis in 1769 to Chapman in 1907, all writers agreed that the pale-bellied race was the predominant form. Around the end of this period, very major changes happened to the Svalbard population of brent geese. Chapman (1889), in the description of his voyage to Spitzbergen in 1881, reported for *Bernicla brenta* that 'Spitzbergen is one of the principal breeding resorts of these Geese ... they were abundant, breeding, with the Eiders, on rocky islands. ... Their summer plumage appears slightly ruddier than that of winter, owing to their upper coverts being fringed with brown.' By 1921 a very different status prevailed (Gordon 1922 p. 86):

> While the eiders have suffered the loss of their eggs only, and probably have succeeded by the end of the summer in raising belated broods, the brent goose, which, formerly shared with the eiders these far northern islands, has been a greater sufferer by far. Indeed, in certain of its former summer haunts, it has been almost wiped out, for the birds themselves, on account of their tasty flesh, are shot whenever possible and the eggs, of course, carried off also. Some of the geese are now nesting up the valleys where, although comparatively secure from molestation at the hands of their human enemies, they are, as I have previously mentioned, hunted and harried by the Arctic fox.

Such a bleak picture for the pale-bellied race must have affected dramatically the situation at Lindisfarne and a very complex transition period may have prevailed (around 1900-1925) before the dark-bellied race *B.b.bernicla* assumed a temporary majority (around 1925-1950) over the pale-bellied race while protection measures were being developed in Svalbard.

[B**arnacle goose** *Branta leucopsis* P10: Bernacle]
The bernacle was a name applied to both the brent and the barnacle goose (Lockwood 1993). All of Wallis's account on the bernacle appears to refer to the pale-bellied brent goose except for the note that 'the case of one stuft was shewn Mr. Ray, at Sir William Forster's, of Bambrough.' Subsequent authorities have considered quite plausibly that, because of its interest to the collector and to Ray, the specimen was more likely to be of the barnacle goose, which is scarce on the east coast, than of the brent goose (Selby 1833; Bolam 1912). However, as pointed out by Gardner-Medwin (1985), it is not certain that the specimen was procured in Northumberland.

Goldeneye *Bucephala clangula* P9: Golden eye
A drake is described that was shot on the coast, near Druridge, and presented to Wallis. The description follows closely that for the goldeneye by Willughby & Ray (1676 p. 282) rather than the glaucion cited in the synonymy. Its status was given as 'not unfrequent about the Farn-islands and on the sea-coast.' This appears to be the earliest mention of the species in the county literature. Maddison (1830) found *Anas clangula*, the golden-eyed ducker, at Prestwick Carr. Selby (1831) lists it as common, though not numerous in winter.

3. Birds of prey

The eight accounts by Wallis of birds of prey are probably the most important of all his writings from an ornithological perspective. They establish a base-line of abundance against which current population levels can be compared and moreover one taken before the complete elimination of many predatory species in the 19th century. However, no base-line can be regarded as absolute and indeed for some species such as the red kite *Milvus milvus*, there is evidence that the persecution, which was intense from the late 18th century through almost to the present day, had started before Wallis's time (Thomas 1984 p. 274.). As early as 1565-66 a mechanism for bounty payments, underpinning the destruction of birds of prey, was established in an Act of Parliament (8 Eliz I c.15) which authorized churchwardens to raise funds to pay so much a head to all those who brought in corpses of species such as foxes, polecats, weasels, stoats, otters, hedgehogs, rats, mice, moles, hawks, buzzards, ospreys, jays, ravens and kingfishers. Many parishes continued to make payments under these and later acts until the 19th century, the persecution shifting from one species to another according to perceived priorities. Surviving parish records show that the destruction effected through the churchwardens was colossal, particularly from the late 17th century, when guns were increasingly used to shoot birds on the wing. Examples from the Churchwardens' Accounts Books for Corbridge are used in this article to illustrate the scale of the destruction. Bounties were paid on some 1,593 heads of seven species of animal from 1676-1745 including 163 red kites (Rossiter 1998a).

It does not appear, however, that the destruction was applied systematically enough for species actually to be rendered extinct by Wallis's time. There is evidence that the persecution, originally under the control of public bodies, was increasingly replaced by direct persecution by private estates towards the end of the 18th century. Munsche (1981 p. 41-44) indicates that at this time game preservation became much more systematic with much greater attention paid to the complete elimination of predatory fauna: 'Equally important was the protection which the game found on preservers' estates. Crows, stoats, weasels, hawks, owls, kites, polecats, magpies and other predators of game were proscribed animals on these estates after mid-century [1750] and landowners handed out liberal rewards to those who destroyed them. Indeed, vermin-catching developed into a relatively lucrative occupation in the second half of the 18th century.'

It is evident in the accounts below that this resulted in a very major drop in raptor numbers from Wallis's time c1760 to the 20th century. Some twelve species can be identified in Wallis's accounts of which four (red kite, common buzzard, golden eagle and osprey) were eliminated by the 1840s and a further two (marsh and hen harrier) by 1900. By 1910 the honey buzzard had become a very infrequent visitor and in the 1920s the white-tailed eagle made its last appearance for about 70 years. Substantial declines occurred for three more species (sparrowhawk, merlin and peregrine falcon). Only the kestrel maintained its status and even it suffered intense persecution at times. The pattern of elimination is clear. In general, broad-winged raptors were the first to become extinct as they were relatively easy targets for 'sportsmen' with primitive firearms. The harriers undoubtedly fared better into the mid-19th century and their removal is a protracted affair, perhaps because of their mobility. Falcons and accipiters fared at least as well as harriers for a while, perhaps being more difficult to shoot. Eventually, however, there were also severe declines in their populations.

Red kite *Milvus milvus* F3: Glead, Swallow-tail'd falcon

The account of the glead is one of the most often quoted sections from Wallis:

> We have the Glead or Swallow-tail'd Falcon; the only one hitherto known with that remarkable distinction, in the alpine, and some of the vale, woods. It is in the greatest numbers in the west and north-west parts, where many of them usually join company, and in towering undulating flights look out for young poultry, which is no sooner perceived by the old ones, than they warn their little offspring by a signal to take shelter under their wings; but the unwary wanderer is sure to be seized and carried off. It is a great destroyer of wood-pigeons, and in the scarcity of such dainties condescends to live upon mice.

The account clearly refers to the red kite. The forked tail indicated by the name, swallow-tail'd falcon, and the synonym *cauda forcipata* can only be associated with this species. Wallis shows that while the red kite was still present in alpine (upland) woods it was already becoming restricted to the western and north-western areas by c1760 and was only found in some of the vale (valley) woods. It was clearly unpopular with country people because of its predation on young chickens although other food sources quoted (wood pigeons and mice) would have benefited farmers.

There is clear evidence that the red kite was more widespread in Northumberland before Wallis's time. In the excavation of the Castle Ditch in Newcastle (Rackham & Allison 1981), the bones of a probable red kite were found in a layer dating from the early 16th century suggesting its presence there as a town scavenger in mediaeval times. By far the most detailed evidence though is provided by the Churchwardens' Accounts for Corbridge (NRO: EP 57/25-26) which record many mammal and red kite bounties from 1676-1745 (Rossiter 1998a). A total of 91 claims was made on 163 gleads from 1676-1723 suggesting that the red kite was a common species at this time in the lowlands. Moreover analysis of the time of the year at which glead heads were presented showed that persecution was highest in May, presumably of breeding birds which may have made tempting

shooting targets. Such persecution is likely to have been far more serious in its effect on the red kite population than if persecution had been mainly of young birds in the autumn. Indeed the low numbers of glead heads presented in August in Corbridge could be taken to indicate an almost total lack of breeding success, since recently fledged juveniles would have been relatively easy to kill.

Wallis wrote his account in Simonburn some 15km to the north-west of Corbridge. His indication that the red kite was now found mainly to the west suggests that it was already scarce to the east of Simonburn by Wallis's time and had presumably almost become extinct in the Corbridge area in the mid-18th century since the last bounty record in 1723. The red kite was clearly becoming scarcer in lowland areas through the 18th century and indeed Evans (1911) noted that since the time of Wallis there was not one record in the Tweed area. However, it still seemed to maintain a presence in upland areas. Using Cumberland as a guide for the end of the 18th century, Hutchinson (1794-97) itemized 'gleds' in his list of birds for the Parish of Bewcastle, Richardson (1794-97) reported that, in Ullswater, kites 'are found the whole year.' and Heysham (1794-97) noted that 'the kite breeds, in the woods, near Armathwaite.' However, an extraordinarily fast decline nationally was now in progress as systematic game preservation became more widely and effectively practised. It appears the red kite was virtually eliminated from Northumberland around 1800-10 but managed to survive on a very local basis until the 1830s, for instance at Eglingham (Baker 1996).

Hen harrier *Circus cyaneus* F4: Dove-coloured falcon, Hen-harrow, Henharrier, Ring-tail
Wallis's account of the dove-coloured falcon appears to refer to two different species: the hen harrier and the peregrine falcon. A number of aspects refer to the hen harrier. The ring-tail is described well, the different plumage of the sexes is recognized and the nesting on the ground in heather on Cheviot is an expected feature: '[it] breeds annually on Cheviot ... She lays four eggs ... on the ground upon Cheviot among the *Ericae* ... as I found by an encounter I had with a pair of them in my younger days, on the north side of Cheviot..' The statement on their destructiveness of wildlife is interesting as a record of the harsh attitudes to birds of prey by this time: 'These birds make great destruction of the wild ducks, and other water-fowl, that breed in the lakes, and the mountain-rivulets. They also do great mischief to the game; and of the domestic poultry they make sad havock in the spring.' Some of Wallis's description including the dove colour, black wing tips, harsh notes, aggressive young and the excited behaviour of the male when the female is on eggs could refer to either the hen harrier or the peregrine falcon.

There seems no doubt that the hen harrier was common on the moorlands of Northumberland in the 18th and early 19th centuries, breeding on uncultivated lands at any altitude. Hancock (1874) reported: 'The late Mr R.R.Wingate informed me that his father remembered when the hen harrier bred on the Newcastle Town Moor.' Since this Mr Wingate was the person who presented the paper establishing the new species of Bewick's swan in 1829, it would appear that this report relates to the 18th century. It also bred on lowland commons near Carlisle in the 1780s (Heysham 1794-97) and Maddison (1830) reported its presence at Prestwick Carr. Systematic persecution was, however, well under way from the 1790s with Heysham (1794-97) noting for Cumberland: 'The duke of Buccleugh's gamekeeper has destroyed some hundreds, and has frequently shot both male and female from the same nest: lord Carlisle's gamekeeper has done the same.'

Selby (1831) indicated some resilience by noting it as 'not uncommon, and a very destructive species to game. Roosts upon the ground in very long heath or ling, and generally in companies of 5 or 6 together.' In upland areas, the hen harrier was noted from 1825-1878 on the moors of the North Tyne, Kielder Head Moors, Belford Moor, Eglingham, Edlingham, Alnwick Moor, Beanley, Bewick, near Wooler (Bolam 1912; Evans 1911) and the South Tyne valley in the Alston area (Macpherson 1892). However, the population did decline greatly from around 1830 and Hancock

(1874) wrote of the hen harrier: 'It has now almost succumbed to the zeal of the gamekeeper. ... I fear it can no longer be considered a resident in the district.' The migratory habits of the species, however, enabled occasional breeding attempts to be made until the late 19th century with possible attempts at Prestwick Carr from 1897-98 (Bolam 1912). The next breeding records were in 1957.

Peregrine falcon *Falco peregrinus* F4,8*:* Dove-coloured falcon

There is little doubt that part of the dove-coloured falcon account refers to the peregrine falcon, in particular the breast of the male with brown and white bars, the pointed wings and the nesting on precipices. Wallis's account suggests that the peregrine falcon was breeding c1760 at two eyries: 'on the shady precipices under the Roman wall by Crag-lake, and on those of great Waney-house-crag near Sweethope-lake.' The former site was also mentioned by Wallis (pp. 11-12) when describing Crag-Lake:

> In the hollows, the dove-coloured falcon with black pointed wings annually rears up its young, making the rocks and water echo on the approach of danger with a harsh sonorous note, somewhat resembling that of a goose.

Heysham (1794-97) also noted this site: 'The Peregrine Falcon breeds, consistently, every year ... in another high rock ... near a public-house, called twice-brewed ale, on the road from Carlisle to Newcastle' and reports a breeding female shot there in May 1781. Some thirteen different sites (eleven inland, two coastal) are mentioned by the various early writers but other hill sites must have been occupied to justify the statement: 'If we may judge by the scanty records of ancient days, most of the higher cliffs of our hill regions were tenanted by a pair of these birds, and the precipices of the Berwickshire coast by several others' (Evans 1911). As with the harriers, the main decline was recorded between the times of Selby (1831), who noted it as not uncommon, and of Hancock (1874) who found a decline saying 'formerly, it bred, every year ... but now it can scarcely be said to do so.' The formidable hunting skills of this species appear to be described in the merlin account.

Sparrowhawk *Accipiter nisus* F7,9: Sparrow-hawk

Wallis's description, indicating a dusky brown plumage and conspicuous dark brown wavy transverse lines on the belly, appears to be of a juvenile although it could conceivably refer to an adult female. The eggs are described reasonably well but the nest site of 'hollows of inaccessible rocks shaded with brushwood' appears unusual and is discussed later (see merlin). The sparrowhawk is recorded by Wallis as 'the most common Falcon we have.' Selby (1831) provides some support for this claim by recording the sparrowhawk as 'a very common species.' In Cumberland Richardson (1794-97) reported that they 'are frequent in this country, and breed here'. It appears that it was not until the mid-19th century that the kestrel became commoner than the sparrowhawk.

The reputation, noted by Wallis, of being 'very destructive to partridges', was obviously going to lead to problems with shooting estates. Persecution is likely to have been as persistent as with the broad-winged birds of prey but by 1874 Hancock could still describe it as 'a common resident; but not nearly as plentiful as formerly.' It appears that it survived through the ability for first-year birds to breed. Bolam (1912) reports that the routine was for nests to be shot-out each spring when the sitting female would be killed. However, in a number of cases, successful re-lays occurred with a new female that was often immature. The nadir for this species occurred around 1960 when the combined effects of pesticides and persecution meant that the sparrowhawk was perilously close to being extinct in the county. Legal protection was granted in the early 1960s and it is possible that today it is regaining its historical position as our commonest raptor.

Common buzzard *Buteo buteo* F5: Buzzard

Wallis states that ‘we have the small, brown, red-eyed Buzzard, with a yellow Cera and eye-lids, and a train shorter than the wings.’ In effect a small brown buzzard is described with red iris, a yellow cere and eye ring, and a tail shorter than the wing-width. Synonymy from Linnaeus (1746 no 64) of *Falco pedibus cera palpebrisque flavis, capite fusco, nucha alba, abdomine albicante maculis oblongis* indicates a small pale-phase buzzard with yellow feet, cere and eye-lids, dark brown head, white nape and a whitish body with oblong spots. We appear to be dealing with the common buzzard although the eye colour of red is not quite right - it should be brown in dark-phase birds or yellow in pale-phase birds - but the eye colour is less reliable if derived from dead specimens. In terms of dimensions, Wallis seems to be making a reasonably accurate comparison of the common buzzard with the honey buzzard which was considered by him in the same account. The common buzzard is indeed ‘small' and with a ‘short train' as it is 4% shorter in wingspan and 10% shorter in tail-length than the honey buzzard (Cramp 1977-94 **II).** Further, as aptly noted by Wallis, the common buzzard’s tail is shorter than the wing-width, giving a very useful distinction from honey buzzard.

The rather terse information on buzzards suggests that they did occur but were neither very common nor very scarce. It is also clear that Wallis recognised that two species occurred but that they were separable only as specimens, through cere and eye colour, rather than in field observations. It would appear that a number of specimens were available making it likely that broad-winged hawks were already being shot on some scale by Wallis's time. It is considered that persecution of buzzards began as early as the 17th century (Cramp 1977-94 **II**). Bolam (1932) provides anecdotal evidence for the greater abundance of the common buzzard in historical times commenting that ‘in the days of our fathers, it had many nesting places, especially amongst the hills.’

In the late 18th and 19th centuries persecution intensified and a rapid national decline occurred. In Scotland, for instance, Baxter & Rintoul (1953) note: ‘In the early part of the 19th century the common buzzard bred plentifully over the greater part of Scotland from the Border northwards. About 1830 or so, persecution of the species became intense, and in the next fifty years the numbers were seriously diminished.’ There is far less evidence for the plentifulness of the species in Northumberland in the early 19th century. Wingate (1825) did describe the ‘slothful and cowardly common buzzard [which] builds its nest in trees or rocky eminences’ and mentions one shot at Wallington, Maddison (1830) reported it from Prestwick Carr and Tristram found it nesting near Eglingham (Baker 1996) and Beanley in the 1830s (Evans 1911). However, Selby (1831) said it ‘cannot be considered, as a common species. I have occasionally met with it during summer in the neighbourhood of the Cheviots.’ The final breeding records come from Hancock (NEWHM: H326 p. 21) who reported the receipt in 1849 of twenty-three eggs of the common buzzard collected from time to time by a Mr Cowper of Alston in the Cumberland Hills. This suggests that the common buzzard survived in the South Tyne area into the 1840s. The overall conclusion is similar to that for the red kite: the common buzzard was scarce after 1800 and only survived on a very local basis into the 1830s and 1840s.

Honey buzzard *Pernis apivorus* F5: Honey-buzzard

In his account of buzzards, Wallis adds: ‘also the rusty brown, yellow-eyed Honey-Buzzard, with a black Cera, and a grey head, about mountainous, woods and heaths[1].’ The dark cere, grey head and yellow eyes indicate that the description is of an adult. The rusty-brown colour is normally associated only with a particular morph of juvenile (Cramp 1977-94 **II**) suggesting some amalgamation of descriptions of different individuals, as found in Ray’s account (1713 p.16). The synonymy given of *Buteo apivorus s. vespivorus* is pertinent, indicating a bee- and wasp-eating buzzard.

[1]It is assumed from known habitat preferences that Wallis meant ‘mountainous woods and heaths’

The presence of honey buzzards, in upland wooded areas, is a very interesting claim for c1760. Before sheep became firmly established in upland areas of south-west Northumberland, it is likely that there was considerably more scrub in steep-sided valleys (cleughs) than we are used to today (see black grouse, nightjar and red-backed shrike). The presence of thickets in the uplands would encourage hymenopterous insects, an important food source for this species. There are early records nationally for this species. Willughby & Ray (1678 p. 72) note: 'It hath not as yet ... been described by any Writer, though it be frequent enough with us' and provide a satisfactory description. Yarrell *et al* (1871-85 **I**) cite two breeding records from 1766-80 and Heysham (1794-97) reported it breeding in Cumberland: 'this bird is very rare in Cumberland. I have only been able to meet with one specimen, ... I am informed it makes its nest in high trees, and breeds in the woods at Lowther.' Macpherson (1901) adds that it was claimed in 1835 that at least three more honey buzzards had been killed at Lowther and preserved there.

The species does appear to have been rare nationally in the early 19th century with Selby (1831) noting it as 'one of the rarest and most elegant of the British Falconidae.' However, there was then a significant recovery perhaps made more obvious by more effective collecting techniques. Hancock (1874) noted that 'it is certainly now, according to my experience, one of the commonest larger birds of prey. Since 1831, and up to 1868, twenty five specimens have come under my notice, all taken within the two counties [Northumberland and Durham].' Besides commenting on the one proven instance of breeding in 1841 at Newbiggin, near Hexham, Hancock also makes the interesting observation that 'Young birds very much predominate and usually two or three are taken about the same time and near the same place, as if they belonged to the same brood.' This would suggest that breeding was more frequent than indicated by the one well-documented record. An analysis of honey buzzard records in Northumberland, from the 18th century to the present time (Rossiter 1998b), provides support for Hancock's view. This analysis indicates that relatively high numbers (0.95 birds/annum) were present in the 1830s and 1840s and the lowest numbers (0.15 birds/annum) occurred from the 1910s to the 1960s. Out of a total of 14 birds obtained in autumn from 1829-1849, for which the age has been published, as many as nine were juveniles indicating a not insignificant breeding population at this time.

Golden eagle *Aquila chrysaetos* F1: Eagle

The account of the eagle by Wallis begins with well-known early evidence for eagles in the county:

> On the highest and steepest part of Cheviot, so called from its being the chief of the mountains round it, the Eagle sometimes has its airy. Two beautiful ones were bred there a few years ago, one of which was shot by a gentleman's servant. A sportsman afterwards killed one of the parent-birds. In the beginning of January, 1735, a very large one was shot near Warkworth, which measured, between the points of the wings extended, eleven feet and a quarter. There was another killed, 1761, near Tindal-house, by William Carr, of Etall, Esq;

However, detailed analysis of the whole account does not appear to have been attempted before. In particular, the probability of one of the specimens being a white-tailed eagle and the suggestion of this species in a number of features in the account appears to have been overlooked. The part that appears to refer solely to the golden eagle is considered first..

Wallis clearly indicates an eagle breeding site c1760 which was successful in at least one year with two young raised. However, the birds were clearly suffering persecution with one youngster and one of the parents being shot. The choice of breeding sites of 'the most retired, inaccessible places' seems right for golden eagle but the clutch size of four eggs is very much on the upper limit. The eagle's breeding site is reported as being on the highest and steepest part of Cheviot. Some interpretation is required here as the top of the Cheviot is fairly flat. The most likely actual site is at

Bizzle Crags or Hen Hole on the north/north-west side of the Cheviot at 500-600m rather than the summit at 815m. A letter to *The Northumbrian* (1995 no. 30 p. 43) from M.Morrison indicates that the crags above Hen Hole are called Eagle Crags. This is very likely to be the site mentioned by Wallis. At this altitude inland the assumption is that the species involved is the golden eagle which nests in Scotland at up to 990m (Cramp 1977-94 **II**) or most frequently in the range 900-2000 feet (270-620m) (Baxter & Rintoul 1953). There seems no doubt that in Wallis's time the golden eagle still maintained a firm breeding presence in northern England and southern Scotland (Richardson 1794-97; Macpherson 1892; Bolam 1912). However, from 1780-1830, the golden eagle faced continual harassment at sites in the Lake District (Macpherson 1892) and southern Scotland (Yarrell *et al* 1871-85 **I**). The tiny Northumberland population, already under pressure in the 1760s, probably succumbed around the start of this period. The comment by Bolam (1932) that the golden eagle has 'not been resident in Northumberland for more than a century and a half' seems very apt. The reasons for the unsuitability of the Cheviot site for breeding white-tailed eagles and the identification of three other early golden eagle breeding sites are given elsewhere (Rossiter 1993-97 part 10).

White-tailed eagle/Golden eagle *Haliaeetus albicilla*/*Aquila chrysaetos* F1: Eagle

Some of Wallis's account of the eagle is a composition of information on both white-tailed and golden eagles. The eagles in such plenty in the Orkneys in the 18th century were white-tailed eagles (Booth *et al* 1984). The iris colour of a greenish flame-colour cannot be assigned definitely to either the golden eagle, described as dark brown to hazel, chestnut, yellow-brown, and red-brown, or the white-tailed eagle described as yellow, yellow-brown and brown-black (Cramp 1977-94 **II**). The prey described of leverets would be favoured by the golden eagle and that of 'the finny race' (fish) by the white-tailed eagle.

While Wallis's breeding records refer to the golden eagle, breeding of white-tailed eagles at a lowland site near Hexham is suggested around the year 700 by examining the history of Erneshou, now called St John's Lee (Rossiter 1993-97 parts 10,13). Love (1983 pp. 109-111) considers that the white-tailed eagle was once widespread, if not common, in lowland Britain and Ireland, surviving comfortably until after the Anglo-Saxon period. The early Saxons at Lindisfarne in the 7th century did appear to be familiar with eagles which in drawings looked in some respects like white-tailed eagles (Gardner-Medwin 1985).

There is clear evidence that the identification of non-breeding eagles in historical times has been lacking in perspective. Popular wisdom was that all eagles were of the golden eagle species. Therefore many initial reports, for example in the press, cite an eagle as a golden eagle when proper scientific investigation shows that it was a white-tailed eagle. Bolam (1912 p. 276) undoubtedly realized this as he says 'but where proof was possible most of them have turned out to be Ernes.' However, his classification system of eagle records is not consistent with this view as while all known white-tailed eagle records are succinctly reported as such, his golden eagle category contains not only the few positively identified specimens but also a number of unassignable records. Nationally the evidence is for vagrant eagles in historical times to be white-tailed eagles. Bannerman (1956) says 'the reports of *golden eagles* which appear from time to time in the press usually turn out on closer investigation ... to be white-tailed eagles, which are more likely to occur as overseas migrants at rare intervals.' Bolam (1932) quotes one instance of this: 'on December 2nd, 1923, an immature Erne (recorded in the newspapers and elsewhere as a golden eagle) was shot at Newsham, near Blyth, where I have since seen it.'

Authoritative statements on the relative abundance of the two eagles come from Selby (1833):

> The Cinereous Eagle [white-tailed eagle] is more numerous than the preceding species [golden eagle], and is found in all the northern and mountainous maritime districts of Scotland and Ireland ... It is also of a more roving disposition, and has frequently been killed in England. ... In Northumberland, the Cinereous Eagle has frequently been seen during the winter months.

Later Selby (1841) reiterated: 'the frequent appearance of this species [white-tailed eagle] in lowland districts, as compared with that of the golden eagle ..., may be attributed to its maritime and coasting habits, the latter affecting the mountainous island districts, from which it rarely strays.'

This lack of perspective in identification calls for a re-evaluation of old eagle records in Northumberland. The method adopted and the full results are given elsewhere (Rossiter 1993-97 parts 10,13). The conclusion was that, from 1730-1949, twenty-one confirmed and five probable individual white-tailed eagles were recorded, all between November and March. Twelve of the confirmed and all of the probables were on or near the coast. Only one out of eleven individuals aged was close to adulthood. Information on historical movements and populations (Love 1983 pp. 74-77) suggests that some of the visitors to Northumberland were from Scotland, particularly when significant numbers bred close to us, but there is likely to have always been a component from the Baltic which continued into the 1920s after the Scottish population had become extinct. In addition to the breeding birds Wallis noted on Cheviot, only four confirmed and one probable golden eagle were noted in the same period, all in upland areas. Thirteen to fourteen undetermined individuals were recorded inland during 1730-1949, all but one between October and April. The result of the re-evaluation is that the appropriately qualified ratio 16:12, for historical occurrences of white-tailed and golden eagle derived by Galloway & Meek (1978) from the classification of Bolam (1912), becomes 21:4 on review according to current criteria.

Included in the above analysis are the records by Wallis of the eagles killed at Warkworth in January 1735 and at Tindal House (near Etal) in 1761. The former was assigned as a probable white-tailed eagle because of the coastal location and the reported massive size. However, the wingspan is so far above the range given in the literature that it appears to have been exaggerated and is probably not reliable enough for a definite assignment. There is no information on which to make a specific assignment of the latter so it is considered as undetermined. Records of eagles appear to have been much less frequent in the 18th century than in the 19th but this may simply be due to less effective firearms.

Osprey *Pandion haliaetus* F2: Bald buzzard, Bastard-eagle

The name of bald buzzard is ambiguous meaning either the osprey or the marsh harrier (Lockwood 1993). It is interesting that Bolam (1912) instinctively took the view that both these species were involved in Wallis's account of the bald buzzard. He included details from this account under both species without any explicit comment on the apparent confusion. Wallis's account of this taxon includes a description citing Willughby & Ray (1676 p. 37) and the following information pertinent to Northumberland:

> We have the Bald Buzzard, so called from its yellowish-white crown, which at a distance looks like baldness, about the alpine mosses; where it is known to the shepherds and many of the common people, by the name of the Bastard-Eagle ... It lives upon water-fowl; and upon fishes. It breeds annually on the mosses near Greenly-lake, among the tall herbage and *junci*. It lays four eggs, white, of an elliptic shape.

Earlier, in the section on lakes Wallis writes:

> (p. 12) Greenley-Lake, so called from its lying at the foot of a fine green slope, is a mile and a half long, and about a quarter of a mile over in the broadest part, towards the middle. The bottom is of white sand and pebbles; the south-west end adorned with the double white, and the yellow, water-lily; an abundance of reeds and rushes

by them cross the lake. That beautiful falcon, the bald buzzard, called by our shepherds, the bastard-eagle, breeds annually on the mosses near it. It is partly in view from the terrace above Crag-Lake. A boat was formerly kept in it for the pleasures of angling by its late owner, Sir Edward Blacket, of Hexham, Baronet.
(p. 15) these lakes are all well stored with pike and perch, and some of them with dace and roach; the largest perch in Crag-lake.

It appears that both species named above are involved in the full accounts by Wallis, only parts of which are shown above. The osprey is indicated by the use of its traditional Northumbrian name - the bastard eagle (Heslop 1892), by the names *Halyaetus, Cyanopoda* and blue-legged falcon and by the synonym *Balbusardus* meaning 'bald-buzzard, osprey 1544' according to the *Revised Mediaeval Latin Word-List* of the British Academy. Other features suggesting osprey are the synonym *Falco pedibus ceraque caeruleis* indicating blue legs, the eagle-like appearance and the fish-eating habit. In addition the *Balbusardus* depicted on plate VI of Willughby & Ray (1676), which is cited by Wallis, appears to be an osprey. As discussed below, the marsh harrier is indicated by the remaining features in the accounts including the specific nesting details.

Wallis's statements fall short of proof of breeding for the osprey in Northumberland in the 18th century as he does not provide any specific evidence for nesting. However, it is known today that ospreys are in general fleeting visitors outside their breeding areas. If the Northumbrian shepherds in the Greenlee Lough area did indeed know this species well, the chances of it being a former breeder in Northumberland are strong. Macpherson (1892) indicates that the osprey probably bred until the end of the 18th century in Cumberland at Ullswater and also in similar habitat to Greenlee Lough at Whinfield Park of 'a wild heath or moss. It is situated in a low-lying district, between the waters of the Eamont and the Eden Rivers.' In Northumberland Maddison (1830) recorded the 'osprey, or sea eagle' at Prestwick Carr but Hancock (1874) reported that, since the draining of Prestwick Carr, it was now only a casual visitant.

Marsh harrier *Circus aeruginosus* F2: Bald buzzard

Evidence for this species in Wallis's bald buzzard account comes from the yellowish crown, the feeding on water fowl, the nest site and the description of the eggs. Indeed there is little doubt that Wallis noted marsh harriers breeding in the Greenlee Lough area c1760.

Other writers confirm that the marsh harrier, often then called the moor buzzard, was formerly a widespread breeder in northern England. In Cumberland Heysham (1794-97) noted it as 'very frequent upon our moors. It lays 4 or 5 eggs, of a dirty white colour, upon the ground, among heath or rushes' and Richardson (1794-97) reported it from Ullswater. However, it had become rare by 1830 and extinct 'some years prior to 1880' (Macpherson 1892). In Northumberland, Wingate (1825) noted it as a 'lively, bold, and active bird, [which] is frequent upon the extensive moors in the western district of the county' while Selby (1831) thought it was 'not uncommon throughout the northern counties, in low and marshy districts' and added that it 'breeds annually at Newham Lough, making its nest ... in the middle of reeds and other aquatic herbage.' Tristram found its nest near Eglingham (Baker 1996) in the 1830s and he is also reported by Evans (1911) as finding it at Kimmer Lough. Interestingly Maddison (1830) did not report it from Prestwick Carr.

Hancock (1874) noted that: 'This fine species, which, a few years ago, was common on our swampy moorlands, where it bred, has now almost disappeared under the policy of the game-preserver, and is fallen, or is fast falling from the rank of a resident, to that of a mere casual visitant.' He reports a nest with four eggs being found a few years ago near Haydon Bridge. The actual site may have been Grindon Lough. Bolam (1912) mentions additional sites on the North Tyne (before 1860), Alnwick Moor, Coldmartin Moss, the Allendale Moors and Longframlington with the last breeding attempt noted c1880 at Newmoor Hall.

Kestrel *Falco tinnunculus* F6,9: Kestrel

An accurate description is given of an adult male. Wallis was clearly very familiar with this species as it was found near his home at Tecket in the Simonburn parish. The status of 'not unfrequent about alpine hedges and woods, but its most favourite recess is in the solitary ruins of the old castles and towers' applies to some extent today. The kestrel is indeed common on moorland edges with small plantations but the loss of ruined towers since Wallis's day has reduced the number of nesting sites in this habitat. The earliest mention of the kestrel in Northumberland is in 1544 when Turner said: 'It nests in hollow trees, church walls and lofty towers ... in England at Morpeth' (Gardner-Medwin 1985). The kestrel became the commonest bird of prey, overtaking the sparrowhawk, in the middle of the 19th century when Hancock (1874) claimed it as 'the commonest Falcon in the north of England' but adds 'it is still very generally slaughtered by the gamekeeper.' Up to this time, it would appear that the kestrel could tolerate the level of persecution and this situation appears to have been maintained until the early 20th century when Bolam (1912) mentioned the large numbers found both in vole-plague years and on the south Northumberland moors. Later, however, Bolam (1932) noted it as 'our commonest diurnal bird-of-prey, but always liable to fluctuate in numbers owing to the exigencies of game-preserving.' It is difficult to determine when persecution largely ceased but it is likely to be around the second world war when gamekeepers' activity declined.

Merlin *Falco columbarius* F8: Merlin

A reasonable description is given of a male with a greyish-blue back and yellowish-white breast. An accurate size comparison is given: 'It is not much larger than a blackbird.' Wallis's description follows closely that of Willughby & Ray (1676 p. 50) including the observation that 'Age, as in all other birds, alters the colours in this; the variegations on the upper part vanishing to a dusky blue.'

Two features of the account indicate possible confusion with other species. It is stated that 'the merlin, is frequent in woods, where it breeds.' It is tempting to accept Wallis's opinion as to the nest sites of the merlin. After all, in many parts of their European range, they do breed naturally in woods and have recently taken to such habitat in the Border Forests. However, it is possible that the sparrowhawk and merlin nest sites have been confused. Selby (1831, 1833), Hancock (1874) and a number of early Scottish sources all indicate that the merlin nested on the ground among heather or stones. This claim of Wallis is therefore not accepted as it stands although, with thickets in upland areas at this time (see, for instance, red-backed shrike), it is possible that some tree-nests occurred.

Wallis also states that it is 'very destructive to the game, at which it flies with most amazing courage and celerity, giving them a mortal wound in the neck, with one instantaneous stroke.' This claim seems very exaggerated and may be due to some confusion with the peregrine falcon. Such ideas, however, took a firm hold in the estates of northern Britain and while Selby (1833) stated: 'in the first-named county [Northumberland], it resorts, during summer, to the extensive and upland moors, where it breeds, and where I have frequently met with its nests', Hancock (1874) reported it was then 'rapidly disappearing by the hand of the gamekeeper.' Persecution may well have started in the mid-19th century as Baxter & Rintoul wrote for Scotland in 1953: 'Though so widely distributed it is not very abundant, having decreased sadly owing to persecution during the last hundred years.'

Other species: the **goshawk** *Accipiter gentilis* is not specifically mentioned by Wallis. Nor is there any suggestion of this species in any of his accounts, which look as if they are a complete record of birds of prey in the county at the time. It is established that this species bred in Scotland up until the late 19th century (Baxter & Rintoul 1953) and it is likely that it did breed in Northumberland when extensive forests survived, perhaps up to the 17th century (Swan 1993 p. 55).

4. Game birds and rails

Game birds and rails are very good indicators of habitat quality as they like rough land which is often damp with plenty of fruit, seeds, buds and insects. Their numbers and distribution are very sensitive to agricultural practices. Game birds, in particular, have also long been of interest to country dwellers because of their edibility and their central role in the sport of shooting. Their numbers are useful indicators of hunting pressures by both humans and predators. To understand historical trends in grouse populations, it is necessary to examine moorland management through the ages in some detail. For red grouse, this is because it is generally thought that population levels are related closely to the distribution and health of heather. For black grouse, it is because they require a diverse moorland edge.

The view that moorlands, in their present form, are a natural feature of our environment is of course false. Wildwood dominated the moors before active farming of such habitat started (Rackham 1986 pp. 68-72). In this study, the moorland of south-west Northumberland is considered as an illustration of historical developments. It should not be assumed that the same historical development applies elsewhere in Northumberland, for example in the Cheviots. A study of place names in Hexhamshire (Sobell 1988), most of which seem to have been established by the 16th century, indicates a very diverse habitat with deciduous woods of many kinds and open areas with moorland shrubs. The early presence of game birds is suggested by names such as Hen Hill, Hen Sike, Henshaw Burn and Growsey Field. The name Whapweasel Burn, meaning curlew-whistle burn, indicates that the curlew *Numenius arquata* L. has long been a prominent inhabitant of this area.

Heather moorland was clearly an important feature of the landscape by the 16th century. Turner in 1551 wrote ‘The hyest hethe that ever I saw groweth in northumberland which is so hyghe that a man may hyde hymself in’ (Swan 1993 p. 186). A parliamentary act of 1609 indicates concern over the effects of burning the moorland heather (Rackham 1986 pp. 320-1). This act (7 Jas I c.17) forbade ‘raysinge of Fires in moorishe Grounds and mountanous Countries’ in the north of England between May and September on pain of a month's imprisonment. It was alleged that: ‘there happeneth yerelie a greate distruccion of the Broode of Wildfoule and Mooregame, and ... the Aire is soe distempered.’ This statute indicates that, even at this early date, game birds were important. The name ‘Mooregame’ refers to red grouse (Heslop 1892) but ‘Wildfoule’ is not assignable with certainty, simply meaning wild fowls or birds.

Specific information on the management of the commons around Hexham has been obtained by Anna Rossiter, in a study on the Government of Hexham in the 17th century (Rossiter 1996, 1997), from the Hexham Manor Borough Books (NRO: 672/1/BB 1-47). Two common keepers were appointed to Hexham East Common each year from 1637-39. In October 1644, an order was made that no man shall set fire to any part of the fell commonly called ‘moore burne’ contrary to the statute upon pain of £3 6s 8d. This statute is the one mentioned above (7 Jas I c.17). In 1663 and 1665, highly significant orders were made showing how the commons were managed in the 17th century. In these orders, one of which is reproduced elsewhere (Rossiter 1993-97 part 15), it was found that diverse abuses had been done in the moors belonging to Hexham in setting moor burns at unseasonable times in the year contrary to the laws of this kingdom and to the great damage and loss of the inhabitants of Hexham by burning heather which was used both for thatching and as a fuel -- ‘the thatch lynge and the burneing lynge.’ Four common keepers were appointed to preserve the commons with powers to allow moor burn only in March and in places approved by the keepers. It is interesting that Hexham had in the 1660s adopted the Scottish system of permitting burns only

in March (Muirhead 1889-95 pp. 168-69) rather than the early English system of banning burns from May to September.

It is clear that the moors belonging to Hexham were very far from being unmanaged in the 17th century. The management regime would have given diversity with areas of tall heather used for thatching and burning as a fuel, areas of short heather grazed by livestock and areas that had been subject to moor burn in March left to regenerate. This is ideal habitat for red grouse and indeed many other moorland birds such as merlin with long heather for nesting purposes and short heather and burnt areas for feeding purposes. The 1665 order on moor burns was renewed at virtually every court up to 1702.

Grazing was tightly controlled on Hexham's commons. Grazing rights belonged to the freeholders and copyholders who were allocated stints, allowing them to graze a certain number of animals on the common. Cottagers had limited rights and foreigners (people from outside the parish) were not allowed any grazing at all. A number of orders in the late 17th century were made to preserve the East Common from being full, that is overgrazed, and to ensure that drovers crossed the commons quickly. There are grounds for believing that cattle predominated on the commons until at least the early 18th century although in other parts of Northumberland, particularly the Cheviots, sheep predominated as described below. Orders regularly mention horses, cows, cattle and beasts (commonly known as black cattle *alias* the Kyloe ox (Bewick 1790)) through the 17th century and there is little mention of sheep on the commons until 1721-22 when they are itemized in allowances for herdsmen. Further evidence for the growing importance of sheep comes from a petition for a fortnightly fair for cattle and sheep in Hexham presented in 1741 (NCH **III** p. 268-9). Previous applications had mentioned cattle only.

There are indications from the Hexham Manor Court Books that, from the late 17th century, the commons were becoming overgrazed. An order made regularly from 1686 to at least 1717 noted how, to the disadvantage of the copyholders, the commons and pastures belonging to this town were very much 'overcharged.' In 1719 trespassers (on grazing rights) were a major problem for the common keepers and they were offered monetary rewards for taking such persons. In this later period of the Borough Books from 1717-28, no orders have been found on moor burns, nor on fire hazards from stacks of heather. It would appear that the demand for heather for thatching purposes had substantially declined.

By Wallis's time (c1760), it appears that, in Northumberland as a whole, sheep were an important component of the uplands economy. Wallis writes (**I** p. 405): 'The most valuable of all our domestic animals are our sheep. Our mountains and hills are almost covered with them. The largest, with the finest wool, are on the hills of Floddon, and by the rivers Till, and Tweed.' He continues (p. 407): 'Great improvements have been made of late years in the breed of our sheep, by changing the males, sowing grass seeds, &c.' So by the 1760s it appears that sheep predominated in parts of the north of the county and were increasing in importance elsewhere. A factor in this development in upland areas was the production of the hardy black-faced forms, called heath sheep (Bailey & Culley 1805 p. 148), which could withstand cold wet weather.

Another important effect on the landscape was enclosure whereby open commons were subdivided into fields, owned by private individuals and separated by boundaries such as walls and hedges. Common grazing rights were generally extinguished although in some areas stinted pastures were maintained albeit with grazing restricted to private individuals - the stint holders. As an early example, an Act to enclose the West and East Commons of Hexham, whose management is described above, was published in 1747 and enacted in 1753 (NRO: ZG1 XXXII/1,2). Bailey &

Culley (1805) show on a map the remaining 'heathy mountains' in 1794 and Lunn (Swan 1993 p. 26) indicates the uncultivated areas in 1976. These areas represent about 45% and 40% of the county respectively. Studies of enclosure awards in the 18th century suggest about 50% of the county was upland moorland around 1750 (Rossiter 1993-97 part 15) when Wallis lived at Simonburn. The major change in the uplands since 1800 has been the conversion of open moorland to coniferous forest (Swan 1993 pp. 55-56). This move had been forecast by Bailey & Culley (1805 p. 127): 'There are also many excellent situations for planting; and of all other purposes to which such [waste] lands are convertible, this ... improvement seems to us the most promising to make the greatest returns.' Small-scale plantations soon became a feature of enclosed land as stock could be excluded. However, it was not until 1926 that a substantial planting programme began (Swan *ibid*).

Habitat is not the only factor that affects game bird populations. Other techniques for improving game populations include better control of hunting pressure through the introduction of a close season and the employment of gamekeepers to discourage poachers and eliminate predators. Game wardens had been appointed on a limited scale in the 17th century. For instance in 1691, the order of former courts touching the preservation of game within the manor of Hexham was renewed and four game wardens appointed (NRO: 672/1/BB 1-47). However, their profile seems to have been a low one and over the next 150 years strenuous efforts were made to increase their effectiveness. The 1671 Game Law made all game the sole preserve of qualified sportsmen, no matter where it was located: poachers therefore could be farmers, on whose land the game lived, as well as peasants (Munsche 1981 p. 13). The Game Association, formed in 1752 (*ibid* pp. 109-111) by a group of noblemen and gentlemen, increased pressure on all classes of poachers by offering rewards for informers. Poaching seems to have continued as a threat for a number of years, in spite of draconian penalties such as transportation for night-time raids. However, when discussing quadrupeds, Wallis (pp. 410-411) also indicates another cause of their decline in the mid-18th century, namely that qualified sportsmen placed no realistic limitations on their bags of grouse:

> Hares with us have been as plentiful as in most counties, but they are like to be as scarce as the admired birds of our heaths and mountains, the Gor [red grouse] and Grey [black grouse]; unless our young sportsmen would have more regard to their preservation, and their own pleasure, and not hunt them down annually, like wolves and bears, to be extirpated without mercy. The consideration of their own healths, promoted by the exercise of the chace, should prevail with them, methinks, prudently to save, and not in a precipitate fury of desire destroy an useful and innocent race of beings, intended by providence to give us both food and pleasure, and some part of our ornamental and necessary cloathing, for the pitiful and brutal ambition only of boasting among their companions of their killing their twenty, their thirty, and their forty brace, in a season. Savage and inhuman butchery! Away with it from Northumberland. Let posterity enjoy the same blessings, so contributive to health, as our forefathers have done, with moderation

In the mid-18th century, the effects of excessive hunting pressure on grouse stocks by those entitled to hunt legally were recognized nationally, resulting in two acts from 1762-73 (Munsche 1981 p. 41,174) establishing for the first time close seasons in which certain game could not be taken. For instance the close seasons for black game and red grouse were 10 December-20 August and 10 December-12 August respectively from 1773. However, grouse populations in the 1770s and 1780s were still at a low ebb. For instance, in the Tunstall MS (Fox 1827), it is stated that '[numbers shot] are now miserably fallen off ... and in the same state are most of the moors in the North.' Possible reasons for the decline were given as 'great improvements of late years in the art of shooting flying [birds]; moors and commons taken up; the hurt sustained by burning the ling ... commonly done by stealth in the night ... when once fired will reach miles ...; lastly, the facility of carrying them to London' (*ibid*). The decline therefore appeared to be due to improvements in guns, high grazing pressures on commons, excessive burning of the heather and a ready market for the dead grouse.

By the 1790s game preservation was performed very systematically (*ibid* p. 44) with the elimination of predators (see birds of prey), a reduction in overgrazing and strenuous attempts to combat poachers. As will be seen in the subsequent accounts, the effects of systematic game preservation were dramatic. Red and black grouse populations, which were at a relatively low level in the mid-18th century, responded quickly to controls over the shooting season and poachers and the elimination of predators. However, the black grouse population appeared to take longer to recover than that of the red grouse and may have eventually been greatly assisted by enclosure which encouraged afforestation in upland areas. The populations of pheasant and grey partridge (see Appendix 1) also appeared to rise sharply around the end of the 18th century. Only the quail appeared to suffer a decline, perhaps due to loss of rough grassland and excessive shooting bags.

Red grouse *Lagopus lagopus* F23: Gor-cock, Heath-cock, Gor, Moor-cock, Moor-hen, Moor-pouts, Red-game, Gor-fowl

Wallis's account of the gor-cock clearly refers to the red grouse. The names used correspond well to those given by Heslop (1892) for the red grouse in Northumberland of gorcock, moor-cock, moor-game, muir-fowl and moorhen. The description includes the lack of a fork in the tail and highlights the distinctive features of the male of a small white area around the lower mandible, the relatively plain coloration of the neck and larger scarlet eye-brows. However, the relatively more rufous ground colour of the male is not brought out, both sexes being indicated as having a yellowish-red ground colour. In his synonymy Wallis cites incorrectly the account by Willughby & Ray (1675 p.126) of the hazel hen *Gallina corylorum* which appears to refer to the hazel grouse *Bonasa bonasia* L. rather than that for the red game *Lagopus altera plinii* (*ibid* p. 128) which appears to refer to the red grouse. The same error is found in his references to Ray (1713 p.55) and Linnaeus (1746). However, obvious characteristics of hazel hen like a black throat in the male are missing from Wallis's description which notes a 'deep unmixed yellowish-red on the throat.'

The early presence of grouse in Northumberland is indicated by the results of excavations. Remains of indeterminate grouse species were found at Newcastle Quayside in a layer dating from the 14th century (Gidney 1989) and at Black Friars, Newcastle, from the 17th-18th centuries (Rackham 1987). Such remains could as equally refer to the black grouse as to the current species. Remains of red grouse specifically were found in the excavation of the Castle at Newcastle with the bones of three individuals found in layers dating from the 17th century (Rackham 1983). Other evidence includes place names in upland areas and the statute on moor burns as described above.

However, grouse populations appear to have been at a low ebb in the mid-18th century. Wallis (pp. 410-411) notes that because of hunting pressure, hares 'are like to be as scarce as the admired birds of our heaths and mountains, the Gor and Grey.' The pressures by sportsmen on red grouse may have been less severe than those on black grouse because of their lack of conspicuous leks and their ability to thrive in open elevated commons and wastes, further away from human activities. Nevertheless, as stated earlier, a close season was introduced for red grouse from 1762. Wallis also indicates, as expected on known habitat preferences, that 'The Gor-Cock ... is more frequent than the former [black cock] in mountainous places.' The loss of scrub resulting from the increased grazing by sheep through the 18th century will not have affected red grouse which can survive well without any tree cover. However, the excessive moor burning and the increased grazing pressure would have reduced the quantity and quality of the heather upon which this species depends. The Tunstall MS show no recovery for the red grouse in the 1770s and 1780s: '[it] has been much diminished these late years' (Fox 1827).

The red grouse population appears to have recovered well by the 1790s when game preservation had became much more systematic. Using Cumberland as a guide at this time, we find red grouse 'in

great plenty' at Bewcastle (Hutchinson 1794-97), 'in great abundance on the moors and hills adjacent' in the Ullswater area (Richardson 1794-97), and 'plentiful on most of our heaths and mountains' (Heysham 1794-97). This status appeared to be ubiquitous by the early 19th century when Selby (1833) described the red grouse as 'plentiful in the elevated heathy parts of the northern counties of England' and Wingate (1825) noted that the 'moors about Wallington, Elsdon, &c. abound with those valuable and beautiful birds.'

Black grouse *Tetrao tetrix* F22,23: Black-cock, Black-game, Grey, Grey-game

In his account of this species, Wallis describes both the male and the female. The wingspan quoted of 33 inches (84cm) is just above the range quoted by Jonsson (1992) of 65-80cm and the weight of 44 ounces (1260g) is within the range of 1220-1320g quoted for black cocks in autumn (Cramp 1977-94 **II**). The descriptions of both sexes are accurate although it could perhaps have been pointed out that the female has smaller scarlet eye-brows and less white in the wing than the male. The description of the cock was from a specimen killed on 5 August 1756. Wallis provides distribution details as follows:

> The Black-Cock is a native of our alpine wastes and forests. ... These admired birds were formerly very frequent on our alpine commons among the *ericae*, but the eager pursuit of sportsmen after them, and the burning of the *ericae*, which afforded them both food and shelter, has made them take refuge on the most remote and solitary heaths and mountains, and even there they are become so extremely scarce, that he is reckoned very fortunate who in a whole week's search meets with a brood. They are now as rare at the better tables, as they used to be abundant. It is the opinion of many of our alpine people, that more are destroyed in the spring, when hymenaeal joy makes them fearless, than at any other time, by insidious and vigilant poachers.

It is therefore indicated that the black grouse had formerly been very frequent on upland commons. There are some early records for black grouse in the county. In excavations at Newcastle, black grouse bones have been found at the Castle Ditch, in layers dating from late 14th--late 15th and mid-16th centuries (Rackham & Allison 1981), and at the Castle itself from a 17th century layer (Rackham 1983). Such birds were presumably caught in the surrounding countryside. However, under excessive hunting pressure, Wallis indicates that black grouse had retreated by the 1760s to the remotest areas where they were still very scarce. Many people in the uplands thought that poachers were responsible and the quoted destruction in spring, presumably at leks, was likely to have reduced numbers substantially. Besides the excessive shooting pressures, two adverse habitat factors in the 18th century -- the increased numbers of sheep and the ending of tight controls over moor burns -- are also likely to have reduced numbers of black grouse. Wallis himself notes that 'the burning of the *ericae*, which afforded them [black grouse] both food and shelter, has made them take refuge on the most remote and solitary heaths and mountains.'

The introduction of the close season for shooting and energetic attempts to restrain poachers removed two adverse factors. However, the Tunstall MS show that in the 1770s and 1780s, the decline had not been reversed: 'Grown very scarce all over the North of England' although it is noted: 'I believe Northumberland has the most' (Fox 1827). Indeed if Cumberland is considered as a guide, little recovery in numbers had taken place by the 1790s, with Heysham (1794-97) noting 'the black cock is, at present, but a rare bird in Cumberland' and Hutchinson (1794-97) quoting 'Black game: rare' for Bewcastle. In Berwickshire, Muirhead (1889-95) considered that black grouse were scarce before the early years of the 19th century. It was not until the early 19th century that a remarkable improvement in the black grouse population occurred, reported by Selby (1833):

> In Northumberland it is very abundant, and has been rapidly increasing for some years past, which may be partly attributed to the numerous plantations, that, within that period, have acquired considerable growth in the higher parts of the county, as supplying it both with food and protection.

A recovery at this time was also reported by Charlton (1860-62) who noted that they had only been abundant in the North Tyne 'within the last forty years.' Enclosure of many upland areas was clearly of great benefit to the black grouse enabling trees to be planted and providing many fields at high altitude of marginal agricultural value. Bailey & Culley (1805 p. 125) confirm this: 'Plantations, on an extensive scale, are rising in every part of the county; and are almost in every instance doing well.'

Quail *Coturnix coturnix* F29,24: Quail

At the end of his corn crake account, Wallis briefly mentions this species: 'The quail is fourteen inches between the tips of the wings extended. The rail [corn crake] and it, on the approach of winter, leave us for a milder climate.' The wingspan of 14 inches (36cm) is just above the upper limit given by Jonsson (1992) of 32-35cm for this species. Bolam (1912) thought that Wallis's account showed he was fairly familiar with the quail in Northumberland. Indeed, Wallis does use the colour of the quail for comparative purposes in his description of the female pheasant. Large annual fluctuations in quail numbers make it difficult to determine long-term trends but many writers think it was relatively abundant in the 18th and early 19th centuries. Selby in his *Illustrations* (1833) said 'but they now visit us in much fewer numbers than they formerly did' and in his *Catalogue* (1831) noted that 'the quail is now a bird of rather rare occurrence in the northern counties, and few bevies are now seen, even upon grounds where formerly they used to be abundant.' Bolam (1912) thought that the *Old Statistical Books* for Scotland in the 1790s showed it was relatively plentiful then in the Borders. Holloway (1996) attributes the decline in the 19th century to loss of rough grassland and over-zealous shooting of the species both in Britain and in the Mediterranean area.

Baxter & Rintoul (1953) emphasise how seasonal patterns have changed: 'The most remarkable thing about the quail in Britain is its change of status. From being a not uncommon resident it not only decreased in numbers but became much more migratory and is now a scarce summer visitor, very irregular in its visits to some parts.' The climate of Northumberland is perhaps too harsh for the quail to have ever been common in winter, as it was in western areas such as Ireland (Yarrell *et al* 1871-85 **III**}. Wallis indicates that they 'leave us for a milder climate' and Selby (1831) does not mention any winter records. However, Wingate (1825) noted one shot at Gosforth on 23 January 1821 and Bolam (1912) records eight individuals in November-February from 1871-95 in Northumberland. Bolam concluded 'it has, therefore, perhaps some claim to be included as a resident.' For Cumberland, Macpherson (1892) also records four wintering individuals in November and December from 1618-1885. It appears that in Northumberland the quail may have been a partial resident in historical times on a very small-scale.

Pheasant *Phasianus colchicus* F24: Pheasant

The description of a male includes the statement: 'The crown and neck are of a changeable glossy green, deeper on the latter, the sides of which have a purple glow.' This would indicate that the form found in Wallis's time was not the ring-necked *torquatus* but the nominate *colchicus*. The comment that 'the rest of the upper plumage is of a glossy black or purple', however, does not match any obvious form although melanistic individuals do occur. Selby (1831) noted that 'in Northumberland, the ring-necked variety is now the prevailing breed.' Yarrell *et al* (1871-85 **III**) confirm this: 'Up to the end of the last century our Pheasant had departed but little, if indeed at all, from the typical *P. colchicus* but about that time the introduction of the Chinese Ring-necked bird *P .torquatus* commenced.' Bolam (1932) reported that the original race, in which the cock lacks the white ring round his neck, has been so much crossed as to have almost disappeared. The female is described accurately by Wallis as 'nearly of the colour of a quail.'

Its status is quoted as ‘less frequent than formerly; owing perhaps as much to the destruction of our woods, which gave it both food and shelter, as to the unwearied pains taken by sportsmen to bring it to the table.’ This confirms the excessive hunting pressures on gamebirds around the 1760s mentioned above for the red and black grouse. It also reveals a serious loss of woodland, presumably in the lowlands where this species is mainly found. Selby (1833) reported a strong recovery: ‘It would appear, indeed, that the northern parts of the kingdom are particularly suited to them, as they are making considerable progression, and have, within a comparatively short period of time, spread themselves over the whole county of Northumberland.’

Corn crake *Crex crex* F29: Land-rail, Corn-crake, Daker-hen, Crake crake

The land-rail of Wallis is clearly this species. The wing span at 19 inches (48cm) is in the middle of the range given by Jonsson (1992) of 46-53cm and the plumage is described accurately, particularly the wings and throat. The livid colour of the beak and legs indicates a juvenile. The earliest account of the corn crake in Northumberland is that by Turner of the daker hen in 1544 (Gardner-Medwin 1985). Wallis indicates that in the 1760s the corn crake was ‘frequent in our vale-meadows ... and of the quail-species, reputed their leader and guide in their migratory expeditions.’ Yarrell *et al* (1871-85 **III**) agreed that in Britain its habitat included the long grass of meadows near rivers but Chapman (1889 p. 77) also suggests some use of rougher ground in Northumberland with their presence in ‘rough grass on the fell edges till the middle of September or later.’ The decline of the corn crake appeared to start in Northumberland in earnest after 1917 (Bolam 1932) probably associated with increased mechanisation of hay production and more intensive sheep farming.

Other species:: no evidence has been found in the present research for the presence of the **capercaillie** *Tetrao urogallus* in early times in Northumberland. However, the evidence for the species being found earlier to the south has been strengthened by the discovery of six fragments of this species in an excavation of three Saxo-Norman tenements in Durham City dating from the late 10th to the early 13th centuries (Rackham 1979). Taken with other archaeological evidence relating to prehistoric times from Upper Teesdale and the mention of one g*allus de bosco* (cock of the wood) in Durham monastic records from the 14th century (Temperley 1951a), it is difficult to disagree with Bolam (1912) who thought the ‘Forest of Chevyot’ would have held this species when it was a great waste. However, the Durham evidence suggests that the North Pennines, which include south-west Northumberland, may have provided equally suitable habitat when they were covered by wildwood.

5. Waders

While both birds of prey and game birds are covered comprehensively by Wallis, the waders are given much more cursory treatment, perhaps because Wallis lived a long way from the coast. There are indeed four accounts referring to this group but it appears that only two species are involved, one of which is the golden plover, a valuable indicator of the state of upland habitats. Wallis’s accounts indicate that both the dotterel and the golden plover appeared to thrive before the advent of systematic game preservation.

Dotterel *Charadrius morinellus* F28: Dotterel

An adult, in breeding plumage with a yellowish-red breast, is described that was shot on the common between Presfen and Carham ‘near a large morass, much frequented by fen-birds.’ The status is given as ‘a migratory bird, exceedingly coveted by sportsmen for the table, ... an annual visitant in the spring, about the middle of April.’ It appears to have been particularly well-known around the Tweed where the specimen mentioned above was taken: ‘Most of the commons on Tweed-side have its company, particularly those of Carham and Heton.’ In Scotland the dotterel

was a common migrant in the Borders judging by accounts written in 1684 through to the 1790s but it had declined through persecution by the 1840s (Baxter & Rintoul 1953). Wallis's comments extend the dotterel's period of relative abundance as a spring migrant back to c1760 from the early 19th century when Selby (1831, 1833) reported that considerable flocks occurred annually in certain haunts near the coast of Northumberland in the month of May, with Scremerston being particularly favoured. The period of abundance ended c1870 when Bolam (1912) reported that 'its numbers have much diminished, while in many of its old haunts it is no longer known.' Its decline is attributed to persecution, particularly for its feathers which were used in fly-fishing (Holloway 1996).

No indication of breeding is given by Wallis. Certainly the dotterel bred in small numbers in the 1840s in the Pennines around Cross Fell (Macpherson 1892) and Hancock (NEWHM: H.326 p. 21) reported the receipt in 1849 of thirteen eggs of the dotterel collected in the last three or four years by a Mr Cowper of Alston from `the Hills in Cumberland.' However, there is no indication that it did breed in Northumberland in historical times other than the statement from Bolam (1932) that it 'formerly nested on our hills and yet continues to do so, *longo intervallo*.'

Golden plover *Pluvialis apricaria* F26: Whistling plover; F27: Green migratory plover; F25: Grey plover, Stone-plover

No less than three of Wallis's accounts appear to refer to this species. Account no. 26 is obviously this species in breeding plumage:

> The small black-breasted Whistling Plover is in considerable plenty on the wastes towards Cumberland. In the breeding season it deludes the boys in searching for its nest by running before them, and then taking short broken flights, alternately, till it has allured them to a great distance, when on a sudden it flies out of the reach of their observation.

Lockwood (1993) equates whistling plover with both golden plover and grey plover *Pluvialis squatarola* L. but the latter can be discounted on habitat preferences. The description of the behaviour will strike a chord with anybody who has tried to search for the nests and young of this species. It is tempting to consider that account no. 27 for the green migratory plover refers to the lapwing *Vanellus vanellus* L. as green plover is a name that has been used for it in Northumberland (Heslop 1892). The full account is:

> The green migratory Plover is frequent on mountainous heaths. It comes in the spring, and leaves us at the end of autumn. It is of the size of a pigeon. The beak is an inch long, black, furrowed at the nostrils, strong and obtuse at the points. The neck is short, and the body slender. The ground-colour of the breast and of the upper plumage is black, variegated with yellowish-green spots. The belly is white. The legs are black, long, slender, and naked for a small space above the knees. It wants the back toe.

However, the description indicates golden plover in breeding plumage rather than lapwing: no crest is mentioned, the habitat is not lapwing's first choice and the leg description fits golden plover which has greenish-grey to greyish-black legs with no hind toe and a bare area on the lower tibia (Cramp 1977-94 **III**). Further, Lockwood (1993) says that green plover was an early name for golden plover, last used by Pennant in 1768, and Charleton (1668 p. 109) considered that green plover and whistling plover were synonymous. Account no. 25 might be thought to refer to the grey plover:

> The Grey Plover, or Stone-Plover, is frequent on our alpine heaths, above mosses; feeding, gregatim, in August, on the fruits of heath and moss-plants, small beetles and other insects. It is of the size of a pigeon. The head and eyes are small, the iris of a hazel colour. The beak is black, strong at the base, and obtuse at the extremity; the mouth large. The head and neck are of a greenish-grey, shaded with brown, and variegated with numerous black

spots. The rest of the upper plumage is of a dark brown, tipped with a greenish-grey, with some white on the edges of the sail-feathers. The breast, belly, tail, and rump, are white. The tail is about three inches long, and variegated with transverse bars of black and white. The legs are of a greenish-grey, with transverse incissures or indentings; the claws black, small, and obtuse.

Again, though, close examination shows that the description with green components in the legs and on the plumage strongly point to golden plover in post-breeding plumage rather than grey plover as claimed. Wallis's treatment of golden plover was not unusual for the 18th century. Selby (1833) gave grey plover as a synonym for golden plover and noted that the differences in breeding and non-breeding plumages of the golden plover had led them to be described as distinct species. The traditional name for the golden plover in Northumberland was the yellow plover (Heslop 1892).

Wallis indicates that the golden plover was a common breeder in upland areas before the development of systematic game preservation. Indeed the flocks of this species which now vacate moorland areas in mid-July seem then to have had longer stays on the moors into August or late autumn than they do today. It is also interesting that, as today, the golden plover occupied some of the most inhospitable habitat in the county, nesting in the wastes towards Cumberland. Thomas Kitchin's map of Northumberland c1750 shows large parts of the area between the Rede, Irthing and Roman Wall as wastes, labelled for example 'Mountainous and Desert Parts Uninhabited' and 'The Wasts' including Chirden, High Humbleton, Whitside, Flights Fell, Butterhaugh and Christianbury Cragg. These will have been the waste areas towards Cumberland occupied by the golden plover c1760. The mountainous and alpine heaths of Wallis, well-occupied from spring to late autumn, presumably included a wider range of moors such as the Cheviots and the North Pennines. The post-breeding flocks appear to have been numerous indicating a healthy county population. Selby (1833), in noting that in spring they 'begin to separate into smaller parties, and retire to the uncultivated grounds of the northern counties of England', shows that they continued to breed on the Northumberland moors in the early 19th century. Hancock (1874) reported it as 'common in both counties, breeding on the upland fells' and, like Wallis, noted large post-breeding flocks.

Woodcock *Scolopax rusticola* F Woodcock

After the main entries in his *Fissipedes* section, Wallis says (**I** p. 337): 'I might name some other migratory *Fissipedes*, as the Woodcock, &c. but as they are common, I pass on to the *Palmipedes.'* This suggests that this species was then a common winter visitor to Northumberland. Archaeological excavations indicate that the woodcock has been a common visitor for a long time with, in Newcastle, remains of one at the Mansion House from the 13th-14th century (Davis & Bullock 1995), of three at Castle Ditch from the 16th century (Rackham & Allison 1981), of two at the Castle itself from the 17th century (Rackham 1983) and of one at the Black Friars from the 17th-18th centuries (Rackham 1987). Richardson (1842 p. 190) gives what appears to be the first known breeding record of the species in the county: '1770. A young Woodcock was taken in a nest near Prestwick Carr, and was shewn at Newcastle as a great curiosity. The old ones were seen, but escaped.' Wingate (1825) reports that a nest was 'lately found near Whitfield Hall.'

6. Non-passerines: landbirds

This section includes species in the order of Voous (1977) from the pigeons through to the woodpeckers. These species are fairly comprehensively covered, perhaps because of their striking plumages and habits. The nightjar account is particularly interesting from a moorland management perspective as it indicates the presence of considerable scrub in the uplands in Wallis's time.

A significant finding from the study of the woodpeckers in this section is the major fluctuations in their populations due to changes in timber management in the 18th and 19th centuries. The loss of

woodland is indicated by Wallis's woodpecker accounts which report on the felling of timber at Dilston Park and by his pheasant account which reports losses of the vale woods. In addition Bewick (1975 pp. 22-23) noted c1765 that 'the country between Wylam and Bywell was beautified with a great deal of wood [with very large oak and ash trees], which presented the appearance of a continued forest - but these are long since stubbed up.' The bare nature of Northumberland around Wallis's time is supported by Hutchinson (1778 p. 451) who thought that 'for so large a tract of land, there are few considerable woods of timber trees.'

As discussed earlier (see game birds and rails), it would appear that many of the old deciduous woods and some of the recently enclosed commons were eventually replanted with conifers and other species in the late 18th and early 19th centuries (Bailey & Culley 1805 pp. 124-5). These were intensively managed supplying the rapidly expanding coal, railway and lead industries of north-east England with timber such as pit-props and sleepers. They were felled at a young age giving a dearth of mature timber in the county. Bailey & Culley *(ibid*) provide contemporary evidence: 'The demand by the collieries and lead mines for small wood, has induced the proprietors ... to cut them at an early age. From twenty-five to thirty years growth is the general term for oak, elm, and ash; but birch, willow, and aller, are cut sooner; and hazle [hazel] for corf-rods [wicker-work baskets] once in three or four years.' Tolan-Smith (1997), who studied the history of Horsley Wood, supports Bailey & Culley's analysis. She found that the enormous demands of the coal industry for timber caused initially the large-scale destruction of ancient woodland but in the long term it preserved wooded areas because of the continuing need for timber. It appears that the populations of green and great spotted woodpeckers and wryneck all declined rapidly in Northumberland from the 1830s to around 1870 due to this shortage of mature timber.' The resulting scarcity of such striking species is likely to have attracted collectors who further reduced their numbers (Holloway 1996).

Long-eared owl *Asio otus* F11: Lesser horned owl

The only owl described by Wallis is this species with a description of a specimen shot at Ashington. Although the colour of the iris of 'a beautiful yellow' could also apply to the short-eared owl *Asio flammeus* Pontoppidan, the red colour of the interior feathers on the face, the one-inch (2.5cm) long ear tufts, the synonymy including *capite aurita* (head with long ears) and the woodland habitat all indicate long-eared owl. More exotic species can be excluded through the dimensions as Wallis's wing-span of three feet (91cm) is in the middle of the range of 84-95cm given by Jonsson (1992) for long-eared owl. The status of this owl was given as 'a native of our woods, and solitary desert places' indicating that in the 1760s it was a resident breeding species in Northumberland.

Wallis's statement that it 'has been supposed not to be an English native till of late years' probably reflects the difficulty in detecting this species by casual observation. Certainly in Scotland it had been recorded as long ago as 1684 by Sibbald and the late 18th century by Pennant (Baxter & Rintoul 1953). Examination of traditional bird names in Northumberland confirms the low profile of the species. Heslop (1892) does not mention it and Bolam (1912) considered that the name horny hoolet had only recently been developed for the long-eared owl to separate it from hoolet, a general term for owls. There is therefore no convincing evidence that the long-eared owl was ever established in the minds of country people as a traditional inhabitant of the county but Wallis's account indicates that this was not due to its absence, but to its low profile. Selby (1831) reported it as 'a common species, and very generally dispersed in all wooded districts'

Nightjar *Caprimulgus europaeus* F12: Churn owl, Goatsucker

The account of the churn owl or goatsucker undoubtedly refers to the nightjar which has traditional names in Northumberland of goatsucker, fern-owl and night-hawk (Heslop 1892). Two 'young ones' shot in Redesdale were sent to Wallis by 'Christopher Reed, of Chipchace, Esq;' one of which

is described in detail. This was clearly not a male as there was apparently no white on the tail. However, there is nothing to suggest that it was not an adult female as opposed to a juvenile as the wings and underparts on the specimen appear to be well-marked (Cramp 1977-94 **IV**). The Christopher Reed mentioned above, was born as Christopher Soulsby, succeeded to Chipchase Castle in 1754 and died in 1770 (NCH **IV**(2) p. 347), shortly after Wallis completed his work in 1769, so the record is dated 1754-69.

The status of the nightjar is given by Wallis as 'frequently observed and shot on our wastes and forests where it breeds.' Its nest was 'frequently found in thickets, and among brushwood.' The conclusion is that c1760 the habitat of thickets and brushwood, which would be called scrub today, was still readily available on wastes or commons and the nightjar had a thriving population in Northumberland. The nightjar was also formerly numerous in Scotland with Baxter & Rintoul (1953) stating that there were many records of the nightjar in former times as far back as Sibbald's *List of Scottish Birds* in 1684, through Pennant c1790 to Gray c1870 who said it is a 'common bird in almost every Scottish county.' The nightjar maintained a healthy population in Northumberland through the 19th century with Wingate (1825) noting that this 'curious bird of passage ... visits different parts of Northumberland', Selby (1831) recording it as 'not uncommon in retired woody dells, moors, and commons, abounding in fern beds' and Chapman (1889 p. 76) finding that they 'still skulk in the heaviest brackens or long shaggy heather, especially among rocks ... they are common enough', Some decline then seems to have set in around the end of the 19th century with Bolam (1912) saying it 'occurs sparingly throughout the district' and (1932) 'not very numerous.'

Some of the persistent decline in Northumberland was probably due to persecution even though the species was not explicitly regarded as harmful to game interests. A number were shot as indicated above by Wallis and others were caught on pole traps (Bolam 1912). Macpherson (1892) considered in `Lakeland' that the night hawk 'would be a good deal commoner if spared by keepers.' However, loss of thickets and brushwood was also probably a major cause of decline.

Kingfisher *Alcedo atthis* F18: Alcyon, King's-fisher

A detailed and accurate description is given of this species which was described as ' not unfrequent on the shady banks of our larger rivers' and, later in the account, in more detail: 'We have it frequently on the banks of the rivers of North and South Tyne, where it burroughs, usually about half a yard under the surface of the earth, and lives upon small fishes. The banks of our other large and shady trout-streams also have its company.' Selby (1831), in reporting a similar status, noted it as common at Mitford and Angerton and not infrequent on the Ouse Burn. Hancock (1874) also found its status unchanged, reporting it as 'not uncommon.'

Hoopoe *Upupa epops* F36: Hoopoe

A satisfactory description is given, based on that by Willughby & Ray (1676 p.100), of a bird shot in 'the latter end of September' on the sea-banks near Chibburn and presented to Wallis, presumably in a year between 1745 when he returned to Northumberland and the year of his book 1769. Wallis regarded the hoopoe as 'a curious and uncommon bird, [which] comes to us in the spring, and leaves us in September.' Indeed he does describe its breeding habits, using the account of Linnaeus (1761 p.37), and cites as evidence that 'Mr. Ray refers us to Northumberland and Surrey for it' (Gardner-Medwin 1985). However, there is no supporting evidence from other writers and Selby (1831) describes it as a rare and occasional visitant.

Green woodpecker *Picus viridis* F15: Green woodpecker; F17: Pick-a-trees, Rain-fowl

This species is described accurately in considerable detail. It was reported that it 'has been observed in some of our vale-woods, but is not common. It was frequent in Dilston-park before the wood was

cut down.' The last part of the account of the lesser spotted woodpecker, dealing with the habits of woodpeckers in general, also appears to refer mainly to this species mentioning pick-a-trees, a Northumbrian name for the green woodpecker (Heslop 1892) and rain-fowl, a more widespread term for this species (Lockwood 1993). Selby (1831) reported a similar status to Wallis, finding it near Alnwick and on the Wansbeck. Temperley (1951b), however, in a study of historical trends in this species, found a decline starting c1840 attributed to the 'scarcity of decaying trees and the persecution which every bird considered somewhat rare encounters at the present day.' Yarrell *et al* (1871-85 **II**) also found that an important cause of the decline in the national range of this species was through 'removing trees that have attained their full growth, without suffering them to decay.'

Great spotted woodpecker *Dendrocopos major* F16: Great spotted woodpecker
A detailed and accurate description, following closely that of Willughby & Ray (1676 p.94), is given of one shot in 'Countess's wood upon North Tyne' and presented to Wallis. This appears to have been a male as Wallis notes that 'the chaps [are] streaked with white, met on each side by a transverse crimson-line from the neck in the male, but not in its mate.' This species was reported as 'a native of the same woods' indicating a similar range to that of the previous species considered by Wallis - the green woodpecker. Selby (1831) thought that this species was more frequent in Northumberland than the green woodpecker and Wallis's comment above that the green woodpecker 'is not common' perhaps indicated a similar situation in the 18th century. However, Hancock (1874), while agreeing that the great spotted appeared to be commoner than the green woodpecker, noted the former almost exclusively as an autumn and winter visitor and could only cite one breeding record. Like other birds favouring mature timber, this species appeared to suffer a substantial decline in the 19th century.

[Lesser spotted woodpecker *Dendrocopos minor* F17: Lesser spotted woodpecker]
From the description of a woodpecker shot in Dilston-park, near Hexham, Wallis claims that the lesser spotted woodpecker 'has been observed and shot in woods with the former.' The preceding account is of the great spotted woodpecker and Wallis continues with a description comparing these two pied woodpeckers. He claims that, compared to the great spotted, the lesser spotted woodpecker 'is like it in shape, but considerably less; in the same rich plumage; the head and rump of the male of a splendid crimson, a peculiarity which the females of both are without, being only distinguished with white.' While the size difference is recognised, the plumage comparison is not accurate. The lesser spotted woodpecker does not have the same rich plumage as the great spotted woodpecker, being a duller bird, particularly the female. Wallis's account follows closely that of Willughby & Ray (1678 p.138) but he appears to have misunderstood their statement: 'This [lesser spotted woodpecker] is for shape and colour like the last described [great spotted woodpecker], but much less.' This statement was presumably intended to indicate that both woodpeckers were pied rather than sharing the same plumage exactly. Further, Wallis's citation to Linnaeus (1746 no. 82) refers to the middle spotted woodpecker *Dendrocopos medius* L. It is therefore difficult to accept this record, as size comparisons on their own are often unsatisfactory guides to identification. Bolam (1912) did include this record as one of four fully authenticated occurrences but later he (1932) justifiably discounted it. The end of the lesser spotted woodpecker account deals with names and habits normally ascribed to the green woodpecker. To add to the three remaining historical records, Macpherson (1892) reports that 'Blackett Greenwell obtained a specimen near Alston, but on the Northumberland side.' This record is not dated but the collector was active c1850.

Other species: although the woodpecker family is covered by Wallis, there is no mention of the **wryneck** *Jynx torquilla.* The evidence for the wryneck being a former regular visitor to Northumberland comes from two writers in the early 19th century. Selby in his *Catalogue* (1831) notes it 'is found in Northumberland, as far north as the woods upon the banks of the Wansbeck'

and in his *Illustrations* (1833) that he 'has traced it as far as Morpeth in Northumberland, where a few are seen every year.' Wingate (1825) reports it as 'a most elegant and beautiful bird of passage ... It inhabits decayed trees.' This does seem compelling evidence for extending the former breeding range of this species, given by Holloway (1996), into south Northumberland from Durham and Cumberland. Hancock (1874) reports that the wryneck is 'far from common in Northumberland' and does not cite any breeding records but describes it as a 'spring-and-autumn migrant.' It should be emphasised that the status given by earlier writers of *bird of passage* or *spring-and-autumn migrant* has been misunderstood by some later writers. For instance Hancock (1874 p. xxiii) defines a spring-and-autumn migrant as a species that 'arrives in spring, breeds in the district, and departs in autumn. Of this, the Swallow is a type.' This is a very different meaning from passage migrant which is the obvious modern interpretation. However, it does appear that the wryneck had declined almost to the point of extinction through the mid-19th century.

7. Passerines.

With his concentration on the larger birds, it is not surprising that few passerines were described by Wallis. Indeed only eleven accounts are given of this large group. The shrike descriptions are of particular interest because they indicate that the red-backed shrike formerly bred in the uplands in thickets. Enclosure of the uplands and other areas enabled many plantations, often coniferous, to be established from the end of the 18th century and numbers of the siskin and common crossbill appeared to increase rapidly in the early 19th century. Goldcrest and coal tit also appeared to benefit from the new timber planted between the times of Wallis and Selby. However, the common redstart and nuthatch suffered with the woodpeckers in the 19th century from a lack of mature timber as trees were felled at an early age for industrial uses. The dipper may have benefited from the transport revolution starting around Wallis's time in which many more artificial nesting sites will have become available. The rapid decline of the jay's population in the mid-19th century was attributed to persecution by gamekeepers.

Tree pipit/Meadow pipit *Anthus trivialis/A. pratensis* F*32,33:* Titlark
Wallis's description with slender body, small head, black upper plumage, yellowish-green rump, white throat and belly and yellowish-white breast and sides under the wing might indicate a female or non-breeding male grey wagtail *Motacilla cinerea* Tunstall (Cramp 1977-94 **V)**. However, the synonym given by Wallis of *Alauda pratorum* indicates a meadow pipit and the name titlark was applied by early writers to any species of pipit (Lockwood 1993). Wallis's description of the titlark follows closely that cited in Willughby & Ray (1676) which appears to involve both the tree and meadow pipit. In Wallis's description, the tree pipit is indicated by the season: '[it] visits us in the beginning of May ... and leaves us in the beginning of September' and by the song: 'It is a merry active bird, sings upon trees; its note like the canary bird's, but shorter, and not so variously modulated.' Meadow pipit is indicated by the green tint to the plumage: 'The upper plumage is black and a yellowish-green' and by the yellow leg colour. The wing-span of ten inches (25cm) is very similar to those given by Cramp (1977-94 **V**) of 25-27cm for tree pipit and 22-25cm for meadow pipit but the tail length of three inches (7.6cm) is somewhat greater than those given by Cramp (*ibid*) of 5.5-5.9cm for both tree and meadow pipits.

The meadow pipit has long been known as a common bird in Northumberland with many early names, besides titlark, including titlin, mosscheeper, cheepy, grey-cheeper, sandy and sooty willy. Its name was also used in the phrases, cuckoo's-titlin and gowk-an'-titlin, meaning in common parlance an incongruous pair of any kind (Heslop 1892). In connection with this association, Selby (1833) thought that the nest of the meadow pipit was the one almost always chosen by the cuckoo

Cuculus canorus in which to lays its eggs in Northumberland. Only one early name, field-lark, was apparently specific to the tree pipit (Heslop 1892) .

Dipper *Cinclus cinclus* F19: Water-ouzel

A generally satisfactory description is given although the size comparison as 'of the size of a blackbird' is not particularly apt because of the different proportions but Wallis does acknowledge the dipper's shorter body and thicker neck. This species was found in 'mountainous rivulets, about cataracts and water-falls, but it is not common.' It is also stated that it 'makes its nest in the concave parts and hollows of large rocks ... there was lately one on the shadowy dropping rock at Tecket-water-fall [at Simonburn].' Before Wallis, Turner in 1544 reported the dipper at Morpeth and Willughby & Ray in 1678 noted that it frequented 'Stony-Rivers and Water-courses in the Mountainous parts of ... Northumberland' (Gardner-Medwin 1985). Following Wallis, Selby (1831) noted that the dipper was 'common upon all our mountain rivulets.' It is possible that there was a genuine increase in the late 18th and early 19th centuries due to the transport revolution at this time giving improvements in the road network. Galloway & Meek (1978-83) thought that it is probable that its habit of building under bridges had benefited the species. Buckton & Ormerod (1997), in a survey in Wales, found that dippers showed a significant preference for streams with bridges and walls, which were often used as nesting or roosting sites. The dipper suffered severe persecution in Scotland during the mid-19th century from fishing interests who claimed it ate salmon spawn. Hancock (1874) showed, by examining the crops of some specimens from the North Tyne, that these claims were entirely false.

Common redstart *Phoenicurus phoenicurus* F33: Ruticilla, Small redstart, Red-tail, Fire-tail, Star-finch

A male is described accurately. It is noted that it 'entertains us all summer, and disappears on the approach of winter' and that it 'makes its nest in old walls and hollow trees.' Selby (1831) reported very similar habitat preferences: 'not uncommon ... particularly where stone walls and very old trees abound.' The same author (1833) also noted that for some years past, it had become comparatively rare in Northumberland perhaps because of the 'deficiency of old and decaying trees' and 'stone walls having ... given way to ... hedges for enclosure.'

Goldcrest *Regulus regulus* F34: Golden-crowned wren, Marigold-flower

It appears that a male is described with a rich orange-yellow crown-stripe: 'an oblong spot of beautiful saffron-yellow extended between them [the eyes] from the beak beyond the crown of the head.' It is described as of the size of the wren and the presentation of one shot near Felton is mentioned. It was noted as a 'summer-inhabitant of our alpine woods, [that] has been shot on the sea-coast in September, before its departure to a warmer climate.' This indicates that it bred in upland woods, much as it does today, and that it was regarded as mainly a summer visitor. In the Tunstall MS its presence in winter was thought to be remarkable (Fox 1827). In the early 19th century, Selby (1831) reported that it was benefiting from the new plantations made being now 'common in all our plantations, particularly those abounding in larch or fir.' The individuals on the coast in September are much more likely to have been immigrants from Scandinavia rather than emigrating local breeders as Wallis thought. Selby (1833) describes a massive influx on the Northumberland coast of thousands of goldcrests on 24/25 October 1822 after a severe north-easterly gale with thick fog. The migration patterns of this species have therefore clearly been established for a long time.

Great grey shrike *Lanius excubitor* F9: Great ash-coloured shrieke, Butcher-bird, Murdering pie

The account of the great ash-coloured shrieke is clearly of this species: 'It is of the size of a Blackbird. ... About the eyes and auricles is an oblong list of black. The head, back, and wings are of a bluish-grey. The sail feathers are tipped with white, the outer ones shortest. The throat, breast, and belly are of a paler colour than the upper part, with a few dusky spots or undulating lines on the throat.' The only slight quibble is that the wings should be black not bluish-grey as claimed: it appears that Wallis has mistranslated *uropygium* in the account in Latin of Ray (1713 p.18) as wings rather than rump. One of Wallis's names, murdering pie, is a traditional Northumberland term for this species (Heslop 1892).

Wallis said 'We have the Great Ash-coloured Shrieke ... in mountainous thorny thickets, and among furz.' This would indicate that there was still residual scrub in the North Pennines in the mid-18th century. As indicated earlier (see game birds and rails), it is thought that this scrub had survived when black cattle were the dominant animal but had been rapidly eliminated as sheep became better established. Wallis therefore recorded shrikes in apparently different habitat to that found on the moors of south-west Northumberland today. Useful corroboration for Wallis's view is provided by Wingate (1825) who also noted the great grey shrike in upland areas (see red-backed shrike). Wallis also indicated that this shrike bred in the uplands: 'It makes its nest of the heath and moss-herbage, and lines it with wool, and the downy parts of plants.' The case for the great grey shrike breeding in Northumberland must be considered with caution as it is not accepted nationally that the species has ever bred in Britain. Yarrell *et al* (1871-85 **I**) state: 'the large size of the nest and the variable colour and markings of the eggs of the Red-backed Shrike have in some instances led to the belief that they belonged to the Great [Grey] Shrike.' Lack (1986) comments on the tendency for the same territory to be held by great grey shrike in the winter and red-backed shrike in the summer which may well have been a cause of considerable confusion.

Red-backed shrike *Lanius collurio* F10: Ash-coloured shrieke, Butcher-bird

The second shrike account of Wallis describes accurately the male of this species:

> It is of the size of a Bullfinch. ... About the eyes and auricles is an oblong black list, and another above it of white. The head and rump are hoary; the middle of the back, and the middle series of the small feathers on the wings of a dusky greyish-red. The sail feathers are blackish, spotted at the insertion with white. The throat, breast, and sides of the body, are of a pale reddish white; the lower part of the belly white.

While the vernacular names used lack specificity, the synonym of *Lanius minor* is appropriate for the red-backed shrike. However, the description of the hen is problematical:

> The hen resembles the great butcher-bird [great grey shrike] in colour, and has often been taken for a distinct species. The head is cinereous. The back is of the same colour, variegated with transverse lines of black. The breast and belly are whitish, tinged with yellow, in beautiful wavy lines. The sail-feathers are mostly of a uniform blackish colour. The train is marginated with grey, and tipped with white.

The statement that the 'hen resembles the great butcher-bird in colour' is surprising. The grey marginated tail and wavy lines on yellow-tinged breast suggest that a female/first-winter red-backed shrike is being described. The transverse black lines on the back indicate that we are probably dealing with a first-winter bird but conversely the ashen-grey head suggests an older bird. However, the ashen-grey back seems a surprising feature for any red-backed shrike. An obvious interpretation is that some confusion in separating the two species has resulted from the variability of female red-backed shrikes. The overall conclusion is that on size, the fine description of the male and the synonymy, Wallis was familiar with the red-backed shrike.

Wallis found this species 'in the same mountainous parts [as the great grey shrike]' meaning in 'mountainous thorny thickets, and among furz.' He said that it 'builds in hollies, and the black and

white thorn [sloe or blackthorn]. It lays six eggs, white, with a circle of reddish-brown at the obtuse end.' The nest site description follows closely that of Willughby & Ray (1676 p. 54) and is appropriate for red-backed shrike: 90% of nests in Hampshire were in thorns or spiky bushes and the eggs correspond closely to those shown for red-backed shrike in the literature (Cramp 1977-94 **VII**). Eggs for great grey shrike have at most a weak concentration of markings at the obtuse end [*ibid*]. It does not need much extension to the breeding range of the red-backed shrike from that in the 19th century for it to include Northumberland. Peakall (1962) investigated the historical status of the red-backed shrike in Britain from 1830 onwards and showed, that in the mid-19th century, its northern limit extended into the southern Lake District and the central Pennines. Further, the northern limit moved southwards with time. It would appear that the limit shown by Peakall for 1850 was not the ultimate northern limit of the red-backed shrike's breeding range in Britain but that decline had already started from further north in Northumberland in the late 18th/early 19th century. There is no clear evidence to suggest that the historical breeding distribution of the red-backed shrike extended further north into Scotland (Baxter & Rintoul 1953).

Following Wallis, Wingate (1825) noted that 'the red-backed shrike is more rare than the former species [great grey shrike], of a less size, but similar in its manners and habits' and that both species of shrike occupied the 'mountainous wilds of this county.' However, from all sources, there are only four specific instances of breeding pairs of red-backed shrikes. A pair was on Newcastle Town Moor in the summer of 1829 (Selby 1831), a nest was found in 1890 at Longframlington (reported as great grey shrike but Bolam (1912) thought the eggs and nest site indicated red-backed shrike), a pair was reported as having nested at Belsay in 1901 (*ibid*) and another was present at Tarset from 1938-41 (McCavish 1971 p. 14,44).

Jay *Garrulus glandarius* F14: Jay

The striking plumage of this species is described in detail. It was reported as being 'common in our alpine woods' with two or three coming into Wallis's garden at Simonburn to feed on soft fruits. Other writers support its former plentifulness. Richardson (1842 p. 139) reported that on 27 November 1765 a jay was caught in a hedge near Newcastle. Wingate (1825) said it was 'well known in this county' and Selby (1833) that it was very common in many parts of England and Scotland particularly wooded districts. However, Hancock (1874) commented that it had now been 'nearly annihilated ... where a few years ago it was by no means uncommon.' This rapid decline in the mid-19th century was attributed to persecution by gamekeepers.

Hooded crow *Corvus corone cornix* F13: Royston-crow

No description is given but the name of Royston-crow (Lockwood 1993) and the synonym *Cornix semicinereus,* indicating a half-grey crow, confirm that the form involved is hooded crow -- the northern and eastern European form of *Corvus corone* L. This form has many other old Northumbrian names including grey-back, hoody and Scremerston crow (Heslop 1892). Wallis reports it as 'not unfrequent in woods, and on the sea-coast' and describes its habits of breaking open shells by dropping them from a height. He also indicates it moved inland to some extent: 'When it is tired of a fish-diet, it retires for a while into the country, and lives ... in the woods and hedges.' Maddison (1830) reported the grey crow *Corvus cornix* inland at Prestwick Carr but it did not generally penetrate as far as 'Lakeland' (Macpherson 1892). The plentifulness on the coast extended into the 19th century. Wingate (1825) noted that 'the Hooded, or Royston Crow, a bird of passage, is often found on our sea-coasts.' Selby (1833) indicated that the hooded crow is a winter visitor, probably from Scandinavia, to northern England where 'they resort most to the sea-shore.' A steady reduction has occurred in the last century in the numbers of hooded crows visiting Northumberland. This has been attributed to increasing supplies of winter food at rubbish tips

within its breeding range in northern Europe and perhaps also to climatic amelioration (Cramp 1977-94 **VIII**).

Wallis also suggests that it may have bred: 'It usually builds upon alder trees, and lays four eggs.' Galloway & Meek (1978-83) noted that it occasionally remains to breed in Northumberland and cite a total of eight instances, with a strong tendency to mixed pairings with carrion crow *C.c.corone* L. It is quite possible that it may have bred more frequently when numbers were high as in Wallis's time but it is not clear that the breeding noted did actually occur in Northumberland. Indeed the breeding observation seems to come from Linnaeus (1761 p. 30).

Brambling *Fringilla montifringilla* F30,31: Mountain-Finch, Brambling

The bird described was taken in a snare at Weldon, near Harelow Hill. There can be no doubt that the description is of a male of this species. The combination of a 'glossy yellowish-red' crown and a 'beautiful glossy black' head, neck and upper part of the back indicates a male moulting into breeding plumage. The size is not quite right. It is given as 'of the sky-lark' but the latter is actually about 20% bigger with, for instance, a wingspan, of 30-36cm compared to 25-26cm for the brambling (Cramp 1977-94 **VIII**). Wallis's description follows closely that of the great pied mountain finch by Willughby & Ray (1676 p. 187) which refers to the brambling of an extraordinarily large size. Wallis describes it as 'one of our visitants in winter', a status maintained since then with Selby (1831) noting it as a 'winter periodical visitant, and frequently very abundant.'

Siskin *Carduelis spinus* F31: Siskin

A detailed description in Latin, taken from Charleton (1668 p. 79), indicates a juvenile bird with a yellow-grey body above and a yellow-white body below with spots. Wallis states that this species 'appears by our river-sides, among alder-trees, about the same time as the brambling ... in great frosts and snows.' It was thus a winter visitor, the same status as in the early 19th century when Selby (1831) noted: 'The Siskin visits us during the winter, and is more or less abundant every year. They resort to the banks of rivulets, where alder and birch trees abound.' It was only thought to have started breeding in Scotland by 1840 (Baxter & Rintoul 1953). Selby (1833) adds that in the winters of 1820 and 1821, Northumberland was visited by considerable flocks of siskins. Interestingly he notes that 'for the last four or five years Siskins have visited my plantations in considerable numbers both in spring and autumn. This I attribute to the abundant supply of food furnished by the alder, birch, and also larch trees.' This suggests that, like the common crossbill, the siskin was responding rapidly to the increase in the number of plantations resulting from enclosure.

Common crossbill *Loxia curvirostra* F35:. Cross-bill

The first county record of this species was noted as one 'shot a few years ago, by Thomas Middleton, of River-Green, Esq; captain of Clifford's Fort, near Tynemouth, and younger brother to Sir John Lambert Middleton of Belsay, Bart.' The attribution is supported by the synonymy *Loxia s. Curvirostra*. Hodgson (1811-32 **I** p. 356), in confirming the genealogy, records a Thomas Middleton of River-Green baptised at Bolam in 1708, married at Meldon in 1759 and buried at Meldon in 1792. It is not obvious from Wallis's report where the crossbill was shot but Rivergreen by the Wansbeck near Meldon would be suitable on habitat with Hodgson (1811-32 **II** p. 24) commenting on its wooded banks and employment of woodmen's families. The common crossbill's status was given by Wallis as 'an uncommon extraneous bird' presumably reflecting the lack of conifer plantations at that time in Northumberland. Baxter & Rintoul (1953) found very few records for crossbill in Scotland before the 19th century. After the enclosures (see game birds and rails), the extensive afforestation must have benefited the common crossbill considerably. Wingate (1825) classified it as an occasional visitor but then noted a major influx in 1810 'about Heddon-on-the-

Wall, Kenton, Blagdon, &c.' Selby (1831) reported that 'this species visits the northern counties almost every year, in considerable flocks, resorting to plantations, abounding with larch and other firs' and noted (1833) that in 1821 'this kingdom was visited by immense flocks of these birds.'

Other species: with the limited coverage of this group, some obvious omissions occur. The two below are selected because they are woodland species which offer additional perspective on the trends in timber management in the 19th century. The **nuthatch** *Sitta europaea* is not mentioned by Wallis although his coverage of woodpecker-type birds appears to be fairly comprehensive. Selby (1833) indicates that this species did breed in the southernmost part of Northumberland in the early 19th century: 'I have not been able to trace it further north than the banks of the Wear and Tyne.' Wingate (1825) noted that 'it inhabits some of our woods.' However, Hancock (1874) in saying 'I know of no instance of this bird in Northumberland' showed that, like other birds of mature woodland, it had suffered a severe decline. The **coal tit** *Parus ater* is also not mentioned by Wallis. Since it has traditional names in Northumberland of cole tit, cole head and black cole head (Heslop 1892), it is likely that it has always been found in some numbers. However, Selby (1831) reported that it 'is now a very common bird in Northumberland, which I attribute to the extensive plantations, particularly of the fir tribes, which have been made within the last twenty or thirty years.'

DISCUSSION

Gardner-Medwin (1985) identified some 49 taxa in his analysis of the earliest bird records for the county based on the accounts of the earliest writers from the 16th-18th centuries. It was thought that 38 of these 49 taxa could be attributed to species recorded within Northumberland and Durham. The present work has looked in detail at Wallis's chapter on birds, including 50 accounts, and has identified some 68 taxa of which 63 can be attributed to species. Of these 63, 51 were almost certainly recorded in Northumberland and it seems reasonable to assume that a further 10, mentioned incidentally in Wallis's accounts and itemized in Appendix 1, also occurred in the county. The occurrence of the remaining two species, barnacle goose and lesser spotted woodpecker, in the county is not thought to be fully substantiated. Subsequent writers increased the species list: Wingate (1825) reported on some 131 species for Northumberland and Selby (1831) and Hancock (1874) some 214 and 265 species respectively for the two counties of Northumberland and Durham.

Clearly, if compilation of contemporary species lists is the main objective, looking at the works of early writers is not a useful exercise. Rather the interest lies in the ability to monitor key species over a long time scale to observe their fluctuations in numbers and range in response to very radical changes in habitat and human activity. Wallis's work is significant because it was written before a number of very major changes in the environment. It will be useful to consider each of these in turn.

Agricultural Intensification

Nationally a number of very significant changes in agriculture started to occur in the late 16th century such as enclosure of open-field systems and drainage of marshes. These changes intensified in the mid-18th century giving a period of remarkable expansion and improvement in agriculture (Chambers & Mingay 1966 p. 34). For instance, from 1760-1799, enclosures brought perhaps as much as 3 million acres (1.2 million hectares) of waste lands into production, mainly in the northern counties of England (*ibid* p. 35). Driving the need for enclosure was a constant rise in the prices of agricultural products such as grain from about 1760 through the Napoleonic Wars to 1813 (*ibid* p. 39). Besides also bringing more land into production, farmers also developed new techniques. The

flexible rotation of crops enabled the land to carry more stock and the improvement of livestock by selective breeding enabled better use to be made of pastures (*ibid* p. 54). Thirsk (1997 p. 147), in commenting on the intensification of agriculture from the 1740s, emphasises that human population growth was the main driving force behind the need for increased production with an increase in England and Wales from 6.2 million in 1751 to 17.9 million by 1851. Through this paper, it has been shown, through consulting local sources, that the trends in agriculture in Northumberland were similar to those occurring nationally. The resulting changes in habitat account for a number of the differences in bird populations noted between Wallis's account in 1769 and those of Selby and other writers in the 19th century:

1) Drainage: many mosses and fens were drained leading to a reduced and fragmented area of wetlands. The most visible effect of this change was the loss of the bittern but it was probably also a factor in the demise of the marsh harrier and the osprey.

2) Plantation Establishment: the enclosure of open commons and wastes facilitated the establishment of plantations, which appeared to comprise a wide variety of trees including larch and other conifers. These young plantations provided very suitable habitat for species such as black grouse, goldcrest, coal tit, siskin and common crossbill which all increased rapidly in numbers.

3) Improved Techniques:: selective cross-breeding enabled new strains of animals and plants to be produced. On the moors, particularly the North Pennines, this resulted in the development of the hardy black-faced sheep which could be kept at high altitude through virtually the whole year, eventually largely replacing black cattle. This caused the loss of scrub and thickets, particularly in cleughs, as sheep could graze areas inaccessible to cattle. Golden plover appeared to be unaffected by the change but the red-backed shrike appears to have lost its favoured habitat of upland thickets and the nightjar eventually suffered a severe decline.

Industrial Intensification

About the same time as the agricultural intensification, there was an enormous expansion of many industries in North-East England and in the supporting infrastructure.

1) Increase in Heavy Industry: there was a rapid expansion of the coal and lead mining industries and of the iron and steel industry. These industries had an enormous appetite for timber resulting in the loss of much old woodland and the harvesting of new timber at a relatively early age. This caused declines in birds which favoured mature woods with decaying trees. The wryneck and nuthatch became virtually extinct, the green and great spotted woodpeckers became very rare and the common redstart less common. However, the demand for timber did encourage the allocation of a greater area of land to woodland, a change facilitated by enclosure as described above.

2) Bridge Construction: many bridges were built in the 18th and early 19th centuries as part of new turnpike roads or roads for carrying minerals. These may have provided more nesting sites for species such as the dipper.

Natural Resource Exploitation

While the changes in agriculture and industry were the driving force behind changes in the status of some species, it is also necessary to consider other more direct effects. Undoubtedly the continual advances in guns were highly significant because they enabled birds, regarded as troublesome, undesirable or suitable for sport, to be killed much more readily. Specimen collecting, both of eggs

and adults, also became a fashionable pastime. The period from the 1790s to the 1860s saw such activities undertaken with no checks or restraints. Subsequent restraining legislation did not always achieve its objectives.

1) Systematic Game Preservation: potential predators on game were intensively persecuted and shooting was tightly controlled with close seasons and strict pursuit of poachers. This caused a rapid increase in populations of game birds such as red and black grouse, grey partridge and pheasant. Birds of prey were very severely reduced in numbers with the complete loss of red kite, common buzzard, golden eagle and osprey from the 1760s to the 1840s, of marsh and hen harrier by 1900, of the honey buzzard by 1910 and of the white-tailed eagle by the 1920s. Substantial declines also occurred for sparrowhawk, merlin and peregrine falcon. Only the kestrel appeared to maintain its numbers. Other birds regarded as vermin, such as the jay, also suffered severe losses. Game fishing interests drove out the cormorant from inland sites and appeared to be an important factor in the decline of the dotterel whose feathers were used in fly-fishing.

2) Colony Exploitation: colonies were subject to periodic excesses in egg collecting and the killing of adults. Globally such activities made the great auk extinct. On Svalbard they severely reduced the brent goose population in the late 19th/early 20th century causing a dramatic fall in the numbers of the pale-bellied race visiting Lindisfarne. The bean goose was similarly affected in Scandinavia and ceased to be the commonest grey goose visiting Northumberland after the 1930s. At the Farne Islands, excessive exploitation appeared to affect particularly the shag, eider and puffin with declines also noted for the razorbill and the shelduck.

Subsequent Trends

After the free use of guns in the mid-19th century had had such a devastating effect on wildlife, restraints were applied, initially to the shooting of seabirds in the breeding season from 1869 and much more recently to the elimination of birds of prey. These restraints have led in some respects to populations of seabirds and birds of prey which differ greatly from those in the late 19th century but which would not be out of place in the 18th century. Another activity that has been restrained is the felling of trees before they become mature. This has led to more valleys now holding mature and decaying trees to the great benefit of woodpeckers and the nuthatch. On farmland, however, the situation is far less encouraging for wildlife. Farming is in the throes of further major changes, based on intensive use of chemicals as fertilisers, herbicides and pesticides, and this is causing changes to bird populations on the scale of those in the earlier agricultural intensification.

The contribution of John Wallis to ornithology in Northumberland is that he documented the county's birds before the major effects in the late 18th and early 19th centuries of the agricultural and industrial revolutions. He provides a baseline against which current populations can be measured and a context for many recent dramatic changes in the bird life of the area.

GLOSSARY

cere	flesh around nostrils	saffron	orange-red
cinereous	ashen grey	sail feathers	flight feathers
eyes	iris	short feathers of wings	coverts
eye-lids	eye-ring	train	tail
livid	bluish-leaden		

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Appendix 1: Bird species considered

The list below gives, in the order of Voous (1977), those species previously considered together with additional species currently found in Northumberland but mentioned only incidentally, usually for comparison purposes, in Wallis's accounts. For the former species, the section in which they are found is given. For the latter, each entry commences with the current English and scientific names followed in brackets by the accounts in Wallis which cite the species and his terms for the species. The subsequent text gives the relevant descriptive material and details of any checks made on attribution. Species marked by an asterisk were not mentioned by Wallis but have been included in the systematic list under *other species* as their consideration offers additional perspective.

Diver sp *Gavia sp* (P6: Diver, Loon): The legs of the puffin (as coulterneb) are reported as being 'situated so far backwards, like the divers, or loons.'
Gannet *Morus bassanus* L. -- Seabirds.
Cormorant *Phalacrocorax carbo* L. -- Seabirds.
Shag *Phalacrocorax aristotelis* L. -- Seabirds.
Bittern *Botaurus stellaris* L. -- Waterbirds.
Grey heron *Ardea cinerea* L. -- Waterbirds.
White stork *Ciconia ciconia* L. -- Waterbirds.
Bewick's swan *Cygnus columbianus* Ord/Whooper swan *C. cygnus* L. -- Waterbirds.
Bean goose *Anser fabalis* Latham -- Waterbirds.
Barnacle goose *Branta leucopsis* Bechstein -- Waterbirds.
Brent goose *Brenta bernicla* L. -- Waterbirds.
Shelduck *Tadorna tadorna* L. -- Seabirds.
Mallard *Anas platyrhynchos* L. (P4,6,8: Common duck): In size comparisons, the shelduck is 'larger than a common duck' and the puffin and razorbill are 'less than the common duck.'
Eider *Somateria mollissima* L. -- Seabirds.
Goldeneye *Bucephala clangula* L. -- Waterbirds.
Red-breasted merganser/goosander *Mergus serrator* L./*Mergus merganser* L. (P2: Dun-diver): Wallis's account for the shag describes its body as 'small, flat, and depressed like the dun-divers.' Heysham (1794-97) states that dun divers have 'generally been considered as the female of the goosander' and indeed Selby (1831) takes this view but the detailed description given by Heysham suggests that they could equally well be Red-breasted mergansers. It is safer to equate the term with red-headed (female/immature) sawbills
Honey buzzard *Pernis apivorus* L. -- Birds of prey.
Red kite *Milvus milvus* L. -- Birds of prey.
White-tailed eagle *Haliaeetus albicilla* L. -- Birds of prey.
Marsh harrier Circus aeruginosus L. -- Birds of prey.
Hen harrier *Circus cyaneus* L. -- Birds of prey.
*Goshawk *Accipiter gentilis* L. -- Birds of prey.
Sparrowhawk *Accipiter nisus* L. -- Birds of prey.
Common buzzard *Buteo buteo* L. -- Birds of prey.
Golden eagle *Aquila chrysaetos* L. -- Birds of prey.
Osprey *Pandion haliaetus* L. -- Birds of prey.
Kestrel *Falco tinnunculus* L. -- Birds of prey.
Merlin *Falco columbarius* L. -- Birds of prey.
Peregrine *Falcon peregrinus* Tunstall -- Birds of prey.
Red grouse *Lagopus lagopus* L. -- Game birds and rails.
Black grouse *Tetrao tetrix* L. -- Game birds and rails.
*Capercaillie *Tetrao urogallus* L. -- Game birds and rails.
Grey partridge *Perdix perdix* L. (F7: Partridge): It was noted in the account of the sparrowhawk that it was very destructive to partridges. Wallis gives no status information but it is likely that as

with other game birds its numbers were shortly to rise rapidly. By the early 19th century Wingate (1825) said it was 'well known in all parts of the county' and Selby (1833) indicated that it had benefited from the recent agricultural improvements and was now abundant.

Quail *Coturnix coturnix* L. -- Game birds and rails.

Pheasant *Phasianus colchicus* L. -- Game birds and rails.

Corn crake *Crex crex* L. -- Game birds and rails.

Dotterel *Charadrius morinellus* L. -- Waders.

Golden plover *Pluvialis apricaria* L. -- Waders.

Woodcock *Scolopax rusticola* L. -- Waders.

Guillemot *Uria aalge* Pontoppidan -- Seabirds.

Razorbill *Alca Torda* L. -- Seabirds.

Great auk *Pinguinus impennis* L. -- Seabirds.

*Black guillemot *Cepphus grylle* L. -- Seabirds.

Puffin *Fratercula arctica* L. -- Seabirds.

Pigeon sp *Columba sp* (F6,7,25,27 Pigeon, Pidgeon): In size comparisons, the kestrel and golden plover (as grey plover, stone-plover or green migratory plover) are the size of a pigeon and the sparrowhawk is the size of a small pigeon.

Wood pigeon *Columba palumbus* L. (F3: Wood-pigeon): The red kite (as glead) is a great destroyer of 'wood-pigeons.'

Cuckoo *Cuculus canorus* L. (F12: Cuckow): The nightjar (as churn owl or goatsucker) is 'of the size and shape of a cuckow.'

Long-eared owl *Asio otus* L. -- Non-passerines: landbirds.

Nightjar *Caprimulgus europaeus* L. -- Non-passerines: landbirds.

Kingfisher *Alcedo atthis* L. -- Non-passerines: landbirds.

Hoopoe *Upupa epops* L. -- Non-passerines: landbirds.

*Wryneck *Jynx torquilla* L. -- Non-passerines: landbirds.

Green woodpecker *Picus viridis* L. -- Non-passerines: landbirds.

Great-spotted woodpecker *Dendrocopos major* L. -- Non-passerines: landbirds.

Lesser spotted woodpecker *Dendrocopos minor* L. -- Non-passerines: landbirds.

Sky lark *Alauda arvensis* L. (F30,32: Sky-lark): The brambling (as mountain finch) is 'of the size of the sky-lark' although it is actually 20% smaller. The apparent reason for this discrepancy is described earlier (see brambling). The tree pipit/meadow pipit (as titlark) is described accurately as 'considerably less than the sky-lark.'

Tree pipit/Meadow pipit *Anthus trivialis* L./*A. pratensis* L. -- Passerines.

Dipper *Cinclus cinclus* L. -- Passerines.

Wren *Troglodytes troglodytes* L. (F34: Common wren): The goldcrest (as golden-crowned wren) is 'the size of the common wren but looks less from the feathers lying closer, and smoother.'

Common redstart *Phoenicurus phoenicurus* L. -- Passerines.

Blackbird *Turdus merula* L. (F8,9,16,19*:* Blackbird): In size comparisons it was reported that the merlin was 'not much larger than a blackbird', the great spotted woodpecker was 'somewhat larger than a blackbird' and the great grey shrike (as great ash-coloured shrieke) and dipper (as water-ouzel) were the same size as a blackbird. The dipper did, however, have 'a shorter body and thicker neck' than the blackbird.

Song thrush *Turdus philomelos* C.L.Brehm (F28: Song-thrush): The dotterel is of the size of a 'song-thrush.'

Goldcrest *Regulus regulus* L. -- Passerines.

*Coal tit *Parus ater* L. -- Passerines.

*Nuthatch *Sitta europaea* L. -- Passerines.

Red-backed shrike *Lanius collurio* L. -- Passerines.

Great grey shrike *Lanius excubitor* L. -- Passerines.

Jay *Garrulus glandarius* L. -- Passerines.
Hooded crow *Corvus corone cornix* L. -- Passerines.
Raven *Corvus corax* L. (F13: Raven): The hooded crow (as Royston crow) ‘sometimes dines on grosser food with the raven.’
Brambling *Fringilla montifringilla* L. -- Passerines.
Siskin *Carduelis spinus* L. -- Passerines.
Common crossbill *Loxia curvirostra* L. -- Passerines.
Bullfinch *Pyrrhula pyrrhula* L. (F10: Bullfinch.): The red-backed shrike (as the butcher bird) is of the size of a bullfinch.

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