

## **Newcastle University Biology Projects 2006: management studies on feral goats**

Again this year, several students of biology from Newcastle University carried out research work supported by the James Knott Trust. The focus was entirely on the feral goats and their interactions with the landscape. A start had been made in 2005 to census the goats by accruing a photo gallery, taking advantage of the huge variation in coat colour and pattern, as well as horn size and shape, that members of the College valley herd collectively exhibit. Photos of most of the 123 animals removed in late 2005 could be used to verify which individuals were left on the hill at that point.

Four students worked from May to September 2006 to verify the census and update the photo gallery: Garaham Holyoak (2006 graduate: M.Sc. Environmental Resource Assessment), Anna Caine (2006 graduate: M.Sc. Wildlife Conservation & Management), Cheryl Rigg (2<sup>nd</sup> year: B.Sc. Zoology) and Lizzie Ross (1<sup>st</sup> year: B.Sc. Zoology). Thanks to permission from the neighbouring Yeavinger and Lilburn Estates to the east and north, they were able to record the whole population in the north Cheviots, not simply those individuals that spent most of their time in the College Valley Estate itself.

Graham Holyoak also investigated where the goats spend time foraging and sheltering in relation to vegetation distribution across their range on the eastern flank of the valley. Whilst it is not yet possible to explain their foraging movements in terms of the sward type present in different areas, the importance of both gorse and bracken stands as shelter is undoubted. For such large animals, feral goats are surprisingly sensitive to wind and rain, taking advantage of the terrain and any tall vegetation to protect themselves.

Anna Caine concentrated on the goats living on the Tors and Hare Law and came to the conclusion that the 2005 removals had greatly reduced the population on the Estate's ground. In particular, animals living further afield do not seem to have moved into the vacated ground in any dramatic fashion. Thus, so far as the Estate is concerned, the removal operations were effective and of the right scale, in that they have markedly reduced grazing pressure by goats in general, as well as removing the threat of damaging 'break-ins' to the Harrow Bog SSSI woodland enclosures: the twin objectives of the whole operation. Cheryl Rigg and Lizzie Ross checked the saplings planted in 2005 and 2006 within these enclosures and found no substantial evidence of molestation by animals, although about 25% of the tree guards had apparently been blown off by the wind!

The main focus for Cheryl and Lizzie was to census goats living in outlying areas, in order to complete the photo gallery and census, which they did by repeatedly walking over to Coldburn, Commonburn and Yeavinger Bell. The main concentration of animals was found throughout the spring and summer in the Easter/Wester Tor valley on Lilburn's ground. One other thing became clear: there remains a genuine divide between a small heft on Yeavinger Bell and a much larger one over the rest of the range, a pattern originally described by David Bullock more than 25 years ago. Whether there are real sub-divisions within the larger area which includes the Estate's ground remains to be seen. Cheryl is spending the current winter back at university analysing all the 2005 and 2006 census data in an effort to see how surviving individuals were affected by the 2005 removals, and to re-evaluate the heft structure

of the whole population, based on preliminary work by Stephen Rippon (2006 graduate: B.Sc. Environmental Biology) and Anna Caine.

The 2006 census results revealed a group of just 26 animals, including 8 kids, on Yeavinger Bell. A total of 171 individuals, including 28 kids, were counted over the rest of the range to the south. There were no animals living beyond Hare Law. So an accurate figure of 197 emerges as the total population in the summer of 2006, down from about 350 in 2005.

A meeting of all interested parties, organised by Mary Gough (Northumberland National Park Authority) at the Cuddystone Hall on 11<sup>th</sup> October, considered all this work and concluded that no large-scale removal operations were required this autumn. The notion that the goat population was thriving on abundant grazings and surviving well through mild winters was called into question by Ted Fox of Elsdonburn because, although twinning is often observed at kidding in March/April, many nannies are without a kid at all by May, and surviving pairs of twins seem to be rare by this stage. In addition, there are about 80 individuals from the 2005 census that cannot be accounted for in the subsequent removals or the 2006 census: this implies that yearling and adult mortality is much higher than was thought. Lizzie Ross is therefore now scheduled to check the whole area in December/January for evidence of mortality, to document kidding by individual nannies over the Easter period, and to check their survival in the summer of 2007. Other plans for 2007 include attaching GPS collars to two goats so that their every move can be recorded, and hopefully explained in terms of the distributions of other goats, good forage, and shelter areas.



*Peter Garson, Division of Biology, Newcastle University*

## Archaeological Fieldwork in the College Valley, Summer 2006

By **Johnnie Shipley** (School of Historic Studies, Newcastle University).

During late June and early July 2006 around 20 students and staff from Newcastle University undertook two weeks' archaeological fieldwork in the College Valley. This involved the survey and excavation of the abandoned farmstead of Harrowbog (Grid Reference NT893 274) near Hethpool, along with detailed topographic survey of the deserted medieval village of Heddon (centred on Grid Reference NT861 284). The fieldwork carried out aimed to further our knowledge of land use in the College Valley through its monuments, structures and field boundaries, as well as provide a chronology for Harrowbog.

The excavation of three trenches across the site added a considerable amount to our knowledge of the site, with what appeared to be small terraces or cultivation beds (formed by a low dry stone wall) recorded on the southern edge of the site. Within the main structure itself removal of the rubble caused by the collapse of the walls revealed a flagged floor in the northern area, bordered by a cobbled passage running through the house on an east-west alignment. On the northern edge of the site a substantial wall was recorded on a north-south alignment, with cobbles and flagging to the east suggesting a structure or enclosing wall.

Trench one was situated to the south west of the main building and uncovered a low dry stone wall running parallel to the southern courtyard wall, and appeared to form a narrow terrace/bed. The rich loam within this feature would suggest it had been used as a garden plot.

Trench two examined the central room of the main building, and removal of the top soil and rubble collapse revealed a cobbled surface with what appeared to be a narrow flagged corridor running through the building from east to west (**Fig 1**). To the south of the corridor the cobbled surface did not continue, however it was not clear if this was because the flagging had been removed at the end of the structures life, or if the rubble and bracken growth had dislodged the floor. From this area a coin dated to 1789 was recovered from below the rubble collapse providing us with an approximate date (late 18<sup>th</sup> Century) for the abandonment, while a roof tile recovered from the same area suggests that the structure had a pan tile roof as apposed to a thatched roof.

The final trench examined earthworks to the northwest of the main building (**Fig 2**). In addition to the two east-west walls that survived as earthworks, excavation revealed a substantial wall running through the trench on a north-south alignment which seemed to predate the east-west walls. Due to the substantial nature of the wall it would appear that it represents an earlier structure on the site, and there was cobbling/flagging to the east of the wall, one would assume that this was the "internal" side of the wall.

The detailed topographical surveys both at Harrowbog and Heddon picked up a number of discrete features that had not previously been identified, and it is hoped that these surveys can be continued in future seasons to provide a complete 3D image of the landscape at both sites.



Fig 1



Fig 2