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A survey of the Sandbowl snail *Catinella arenaria* in Cumbria

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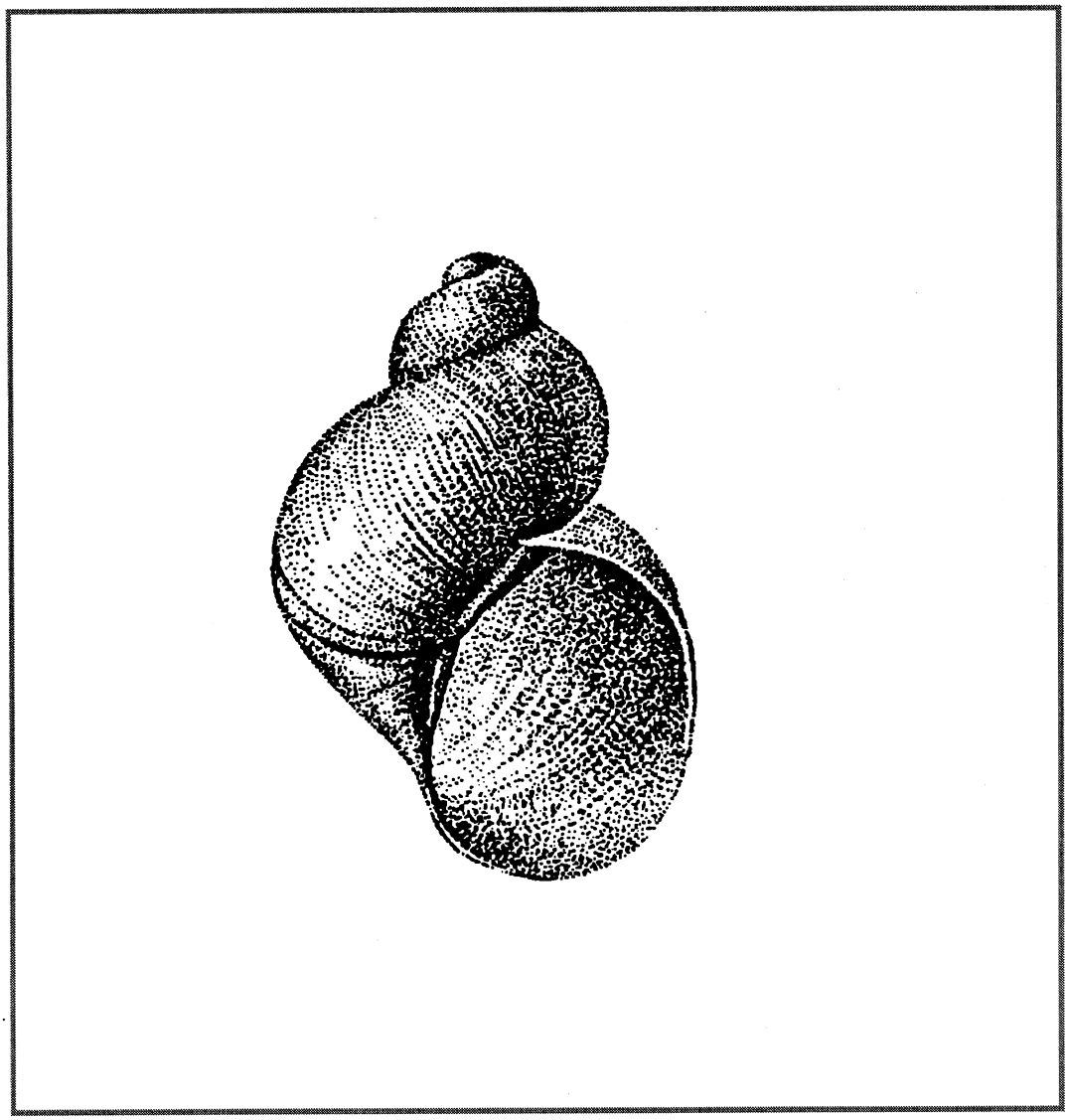

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English Nature Research Reports

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A survey for the Sandbowl Snail, *Catinella arenaria*, in Cumbria

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This report was prepared by Martin Drake using information supplied by Barry Colville.

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CONTENTS

Introduction

Catinella arenaria (Bouchard-Chantereaux, 1837), the Sandbowl Snail, is a rare in Britain, being known from Braunton Burrows in Devon and three localities in east Cumbria (Coles & Colville, 1979; Colville, unpublished). It is given the Red Data Book status of Endangered (Kerney, 1991) and is listed in Schedule 5 of the Wildlife & Countryside Act, and consequently is a priority species in the Biodiversity Action Plan (Biodiversity Steering Group, 1995). The action plan recommends further survey of sites.

In Cumbria *Catinella* is found in calcareous flushes on limestone. Another Endangered species on the BAP list is *Vertigo geyeri* Lindholm, which also occurs in such sites. The aim of this survey was to search suitable isolated calcareous flushes for *Catinella* and other rare molluscs, notably *Vertigo geyeri.*

Methods

Base-rich flushes were identified from maps and from information on SSSI supplied by English Nature. The occurrence of flora indicative of these flushes was a useful starting point for selection, notably the presence of black bog-rush *Schoenus nigricans*. More than twenty sites were visited between August 1997 and January 1998. Information is given for a further six sites which had been visited between 1990 and 1996 (some of which were re-visited in 1997). Molluscs were recorded by searching in the field and, at some sites, by sorting through samples of litter in the laboratory. Table 1 lists the sites and details of the habitats recorded on cards used for the Conchological Society's national recording scheme. Species recorded from 1996 to 1998 were counted (at most sites) and categorised as adult, juvenile or dead shells. Records made before 1996 were scored for presence only. Records for site which were unpromising or supported a mundane fauna are not included in this report.

Results

Thirty four species were recorded at these flushes, including two Endangered species (*Catinella, Vertigo geyeri*) and one Rare species (*V. lilljeborgi* (Westerlund)). *Columnella aspera* Walden is possible regionally scarce (Table 2).

Catinella arenaria

The previously known sites for *Catinella* are from within SSSIs at Tarn Moor, Crosby Gill and Orton Pasture. The search in 1997-8 covered a wide geographic area on the limestone but the only new records were from sites within five kilometres of those of earlier records. These form a cluster between Orton and Crosby Garrett. There are now records for eleven separate flushes at six localities. The newly located sites are Westgill Hill, Halligill and Potts Valley. The colonies at Westgill Hill and Halligill are not within SSSI (Great Asby Scar SSSI is about 2 km south of them). Four of the five colonies at Potts Valley are just within the Sunbiggin Tarn & Moors and Little Asby Scar SSSI, and the fifth is just outside. A decision is needed on whether to extend the SSSI boundary to include the flush that supports this colony of *Catinella.*

The feature in common with these three new sites is tufa-forming calcareous flushes with *Schoenus nigricans* and short *Carex* species. Stagmire Moss, where *Vertigo geyeri* was found, also had these features but *Catinella* was absent here. The sites are grazed by sheep and possibly cattle and this has kept down the height of the vegetation and exposed bare mud. Both these factors seem to favour *Catinella*. Excessive trampling would be deleterious but the present management appears to be suitable and it is recommended that it is not changed. The other factors that may be keeping the sites open are flushing and frost.

Catinella was moderately frequent at all six localities and abundant at some flushes on Potts Valley and Tarn Moor in spring and summer. Juveniles were recorded in April and December, and were frequent at two flushes in both months. The abundance of juveniles suggests that the populations are healthy. It is not possible to infer seasonal life-cycle patterns from these data, but they do suggest that it may more easy to locate the species in summer (July and August) than in colder months. At one flush at Potts Valley, adults were seen mating on the dead leaves of *Carex viridula.* They were not found in the most low-lying areas which may flood when it rains.

Catinella occurs with *Vertigo geyeri* at a number of these flushes and both species clearly require similar habitats. *Vertigo substriata* is a local species of wet sites but seemed to be poorly associated with the two rare species. *Euconulus alderi* was perhaps more often associated with *Catinella* and *V. geyeri* but not sufficiently frequently to act as an indicator of potential sites for them.

Vertigo geyeri

The records from three flushes at Potts Valley, together with *Catinella*, and one at Stagmire Moss are new for Cumbria, making four separate sites in total for this species in the county. The others are near Helbeck Wood, NY779164, and Tarn Moor together with *Catinella.*

References

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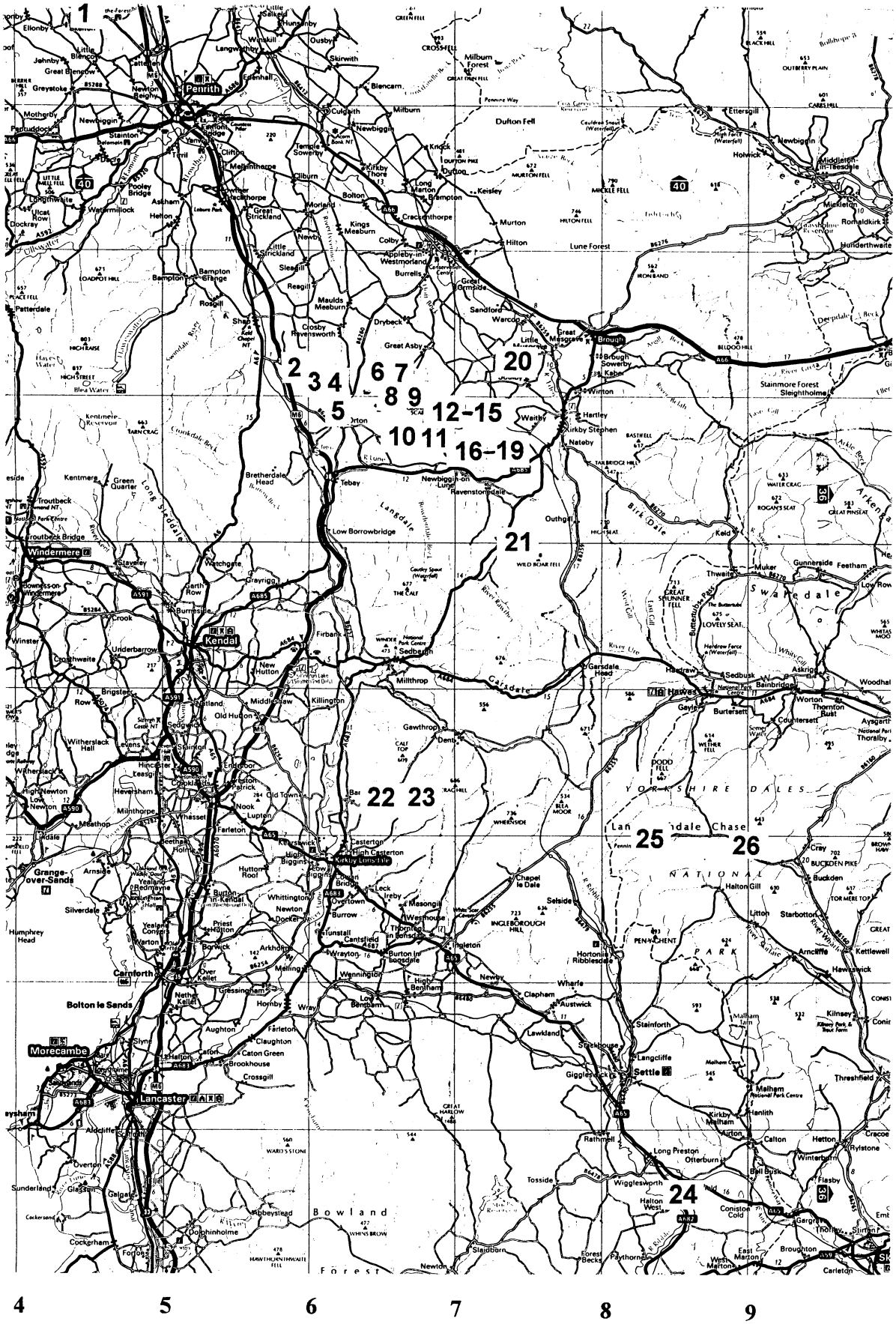
Table 1. Sites visited for *Catinella* and *Vertigo*, 1991 - 1998

	Locality	SSSI	Grid and altitude	Habitat details	Date of visit	*Catinella* or *V. geyeri* present
1	Unthank		NY452367 175m	Mire beside flooded canalised stream: grass and rush.	28/12/97	
2	500m E of M6 Shap exit, 2km S of Hardendale		NY585128 305m	mire around stream rush, grass, lousewort, moss	14/7/97	
3	Crosby Gill, flush C	yes	NY612109 290m	calcareous flush, grassland with cattle and sheep	24/7/91	*Catinella*
4	Crosby Gill, flush E	yes	NY613112 290m	calcareous flushes in grassland with sheep and cattle	24/7/91	*Catinella*
5	Orton Pasture	yes	NY626092 261m	flushed dips in grass field caused by digging for liming field elsewhere	24/7/91	*Catinella*
6	Westgill Hill, Bank Moor		NY644127 270m	stony tufa-forming calcareous flush with *Schoenus nigricans*.	19/12/97	*Catinella*
7	0.5 km S of Halligill, 2.5km W of Great Asby		NY661126 270m	flush area by stream with grass and small *Carex* sp.	27/12/97	
8	W side of Linglow Hill, 5km NE of Orton		NY651119 320m	acid flush, moss, *Sphagnum*, grass, rush and short sedge	24/12/97	
9	SW of south tip of Halligill Wood, 4km ESE of Crosby Ravensworth		NY657128 270m	calcareous tufaceous flush with *Schoenus nigricans* and short sedge	27/12/97	*Catinella*
10	Tarn Moor, near Sunbiggin Tarn	yes	NY671076 250m	*Schoenus nigricans*, short sedges, moss	12/10/90	*Catinella* *V. geyeri*
11	Tarn Moor near Sunbiggin Tarn	yes	NY672070 260m	calcareous flush *Schoenus nigricans*, short sedge, moss, *Parnassia*	29/8/87	*Catinella* *V. geyeri*
12	Potts Valley, Crosby Garrett	yes	NY698080 240m	calcareous flushes with *Schoenus nigricans* and small sedges	27/4/97	*Catinella*
13	Potts Valley, Crosby Garrett	yes	NY700081 240m	calcareous flushes with *Schoenus nigricans* and small sedges	27/4/97	*Catinella*
14	Potts Valley, Crosby Garrett	just outside boundary	NY702080 250m	calcareous flush, mainly short sedges	24/4/94	*Catinella* *V. geyeri*
15	Potts Valley, Crosby Garrett	yes	NY704082 245m	flush with Juncus sp	17/7/96	*Catinella* *V. geyeri*
16	Smardale Gill 1, E bank of Scandal Beck, Ravenstonedale		NY721057 230m	flush on steep bank. grass, rush and short sedge	28/11/97	

	Locality	SSSI	Grid and altitude	Habitat details	Date of visit	*Catinella* or *V. geyeri* present
17	Smardale Gill 2, E bank of Scandal Beck, Ravenstonedale		NY725064 220m	fen with sedge and rush	28/11/97	
18	Smardale Gill 3, W bank of Scandal Beck, Ravenstonedale		NY724063 220m	grass and rush fen	28/11/97	
19	Smardale Gill		NY725066 230m	spring and flush with grass, rush and sedge and moss	19/8/97	
20	Stagmire Moss, Soulby	yes	NY737123 155m	fen with tufa-forming calcareous flush, *Chara*, sp, *Schoenus nigricans*, *Carex viridula*, *brachyrryndria* grass rush and moss	13/11/97	*V. geyeri*
21	Stennerskeugh Clouds, Ravonstonedale		NY742001 440m	flush (wet) with small sedges and moss, and under limestone boulders in old mine workings	18/8/97	
22	Barbondale, Barbon Low Fell		SD655824 220m	flush with rush, short sedge and moss	9/1/98	
23	Barbondale, Brindbeck Bridge		SD655829 200m	flush with short sedges, grass and rush	9/1/98	
24	Pan Beck, Hellifield		SD848559 125m	fen with grass, rush, large and small sedge, lousewort, thistle, penny-wort, mint, horsetail, ragged robin and orchid	26/6/97	
25	Green Field Meadow, Upper Langstrothdale		SD833794 370m	flushed bank with short sedges, grass, moss, rush and variety of flowering plants	21/9/97	
26	Langstrothdale, Yokenthwaite, Buckden		SD900792 265m	flush with short sedges	21/9/97	

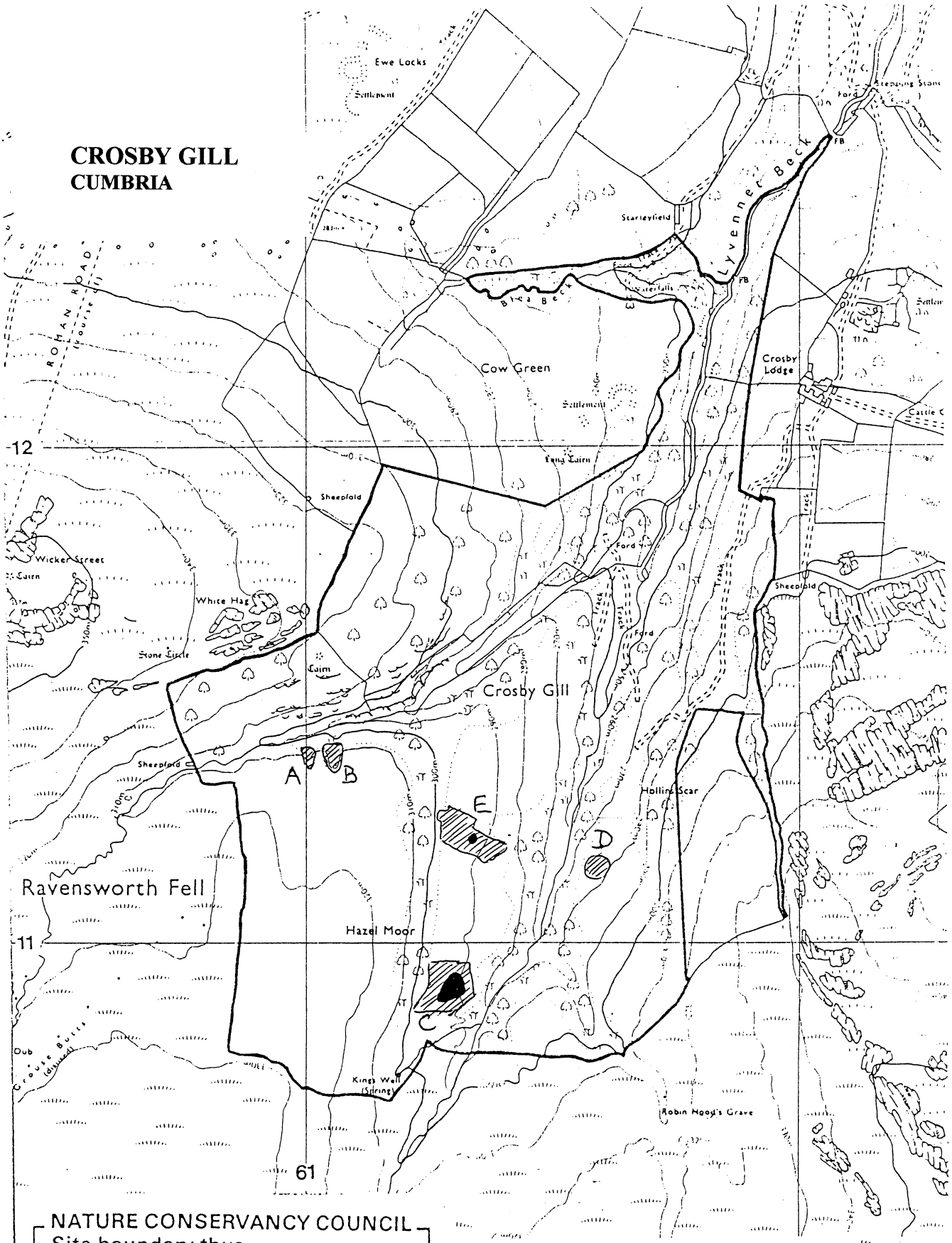
Table 2. Species recorded at each site. x - present; a - adult; j - juvenile; d - dead; + - more than; Ab - abundant; numbers are of individuals

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Carychium minimum	2		x	x				1	14	x	x	2	2	3	1	5+	5+	10+	5	10			1	20	1	1
Carychium tridentatum						4				x									1							
Catinella arenaria			10+	1	10+	1a,24j,2d			2a,20j	x	60+	Ab	10+	1a,3j	1a,5d											
Oxyloma pfeifferi	12	5	x	x	x	10a,60j	6j		1a,40j,5d	x	x	Ab	10+	Ab	Ab	10+	10+	10+	4	Ab				3	2a, j	Ab
Cochlichopa lubrica	2j		x	x	x	18j	1j		2a,6j		x	a,d,5j	1j	2	1j		3+	2a,3j		1a,2j				1j	3j	
Pyramidula rupestris																					x					
Columella aspera								2														1a, 5j	1a,2j			
Vertigo antivertigo	3a,1j		x		x	1	28+	1	21a, j	x	7	13	2	3			20+	1		50			17a,19j	2		
Vertigo substriata						1j	1a,2j	2	1a,1j	x		1d		1	1d	1	10+	1j	2	5		2a,5j		3		
Vertigo pygmaea			x	x	x	58a,94j	12+		40a, j	x	11	19	2	5	2a,2d	6	3+	10+		1					13+a, j	3a,1j
Vertigo lilljeborgi										x																
Vertigo geyeri										x	2	7		2	1d					10						
Leiostyla anglica																			5a,4j							
Lauria cylindracea																					x					
Vallonia excentrica				x			1									1										
Punctum pygmaeum						30		1	6	x						4		2	5	4		1		2	1	
Arion ater									1															5		
Arion intermedius																								1j		
Vitrea crystallina																				1				3	1	
Nesovitrea hammonis	1			x	x	1d						a		1						1j				4		
Aegopinella nitidula									1j									1a,3j						1a,2j		
Oxychilus cellarius												1d														
Oxychilus alliarius												1j														
Zonitoides nitidus										x	x									1j						
Derocera laeve	10+					2	1	x	x	x								1				1	1			
Deroceras reticulatum					x	5+		1			x	1a,1j	x			1		1			x			1		
Euconulus fulvus										x							3	4j		14						
Euconulus alderi						2	1	2	10j	x	x	3	x	2a,3j	1				2					2		
Candidula intersecta													x													
Trichia hispida			x	x	x	1a,6j	11j		8j	x	x	3a,1j	x	5j	2		2a,5j	x	x					1	6	x
Cepaea nemoralis																			x					3+		
Lymnaea truncatula	x	x	x	x	x	1d,4j	1j	3	x	x	x	x	x	x	x	x	x	x		x	x	1j	8j			
Lymnaea peregra		x	x	x						x		x	x		x											
Anisus leucostoma	A																									



Sites visited in 1997-8 and others where *Catinella* was previously known

CROSBY GILL
CUMBRIA



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Site boundary thus

Scale 1:10 000

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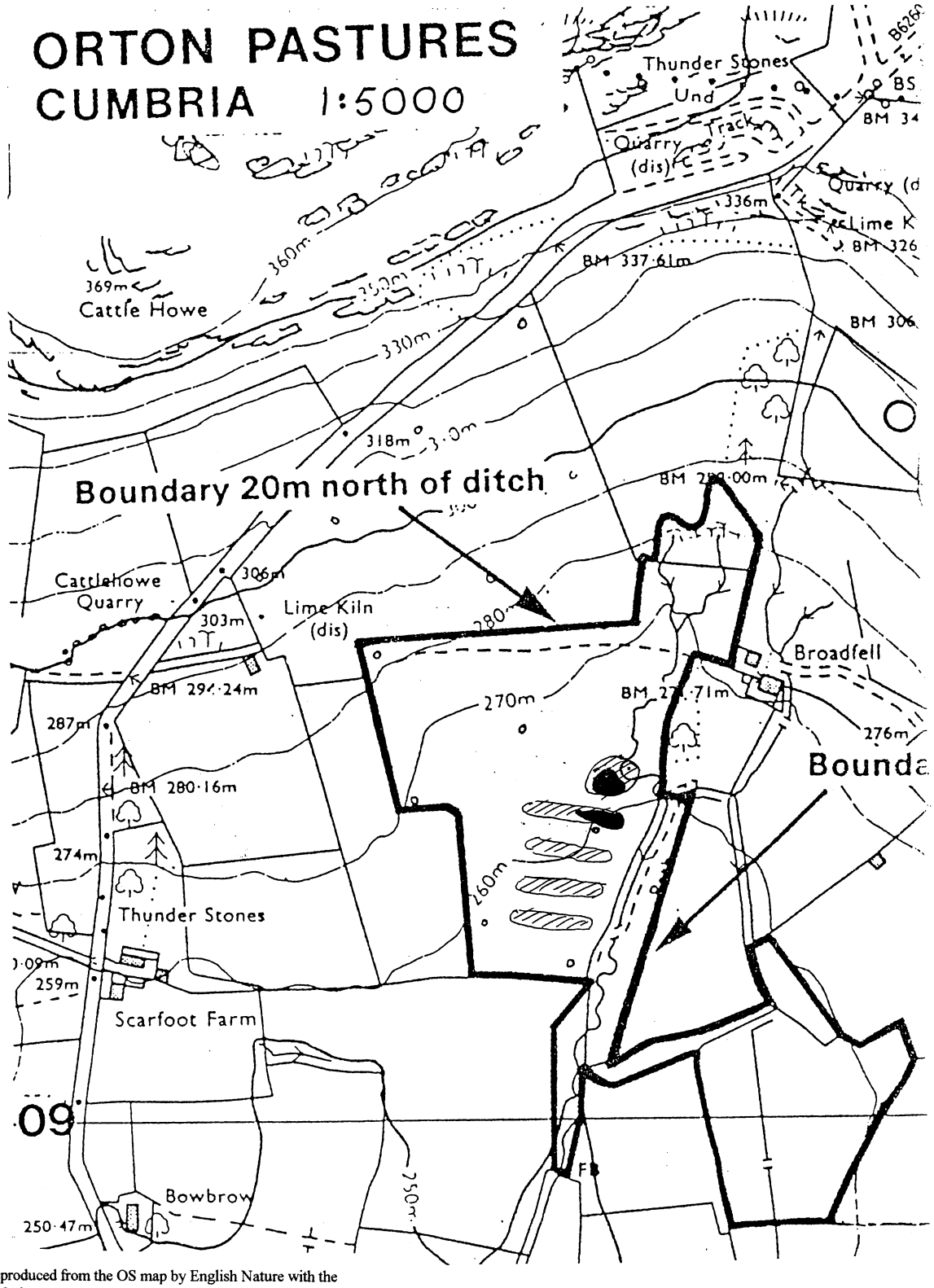
0 Yards 600

***Catinella arenaria* colony**

Flush



***Catinella arenaria* colony**

Flush

SUNBIGGIN TARN & MOORS AND LITTLE ASBY SCAR

CUMBRIA