Motifs, monuments and mountains: prehistoric rock art in the Cumbrian landscape

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Motifs, Monuments & Mountains:  
*Prehistoric Rock Art in the Cumbrian Landscape*

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*Thesis submitted for the degree of Ph.D.*

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Abstract

This thesis presents a comprehensive review and analysis of the prehistoric rock carvings in the county of Cumbria in NW England. It builds upon Beckensall's *Prehistoric Rock Art in Cumbria* (2002), focusing on a substantial study area with diverse topography, and seeking to understand the rock art in relation to the natural landscape and known archaeology, and in the context of rock art traditions in neighbouring regions. Systematic evaluation of the database resulted in the exclusion of several panels of 'rock art', which were determined to be of geological origin. Additional panels were sought by increasing public awareness and through direct field-survey, and six new panels were documented. Further examples were identified from literature sources, and all were collated in a revised dataset. From the landscape characteristics of known panels, predictive theoretical models were developed, and areas matching these models were field-surveyed. These demonstrated that the upland rock art tradition of NE England does not appear to cross into Cumbria, and that a very different, outcrop-based practice occurred in the central valleys. GIS was used to explore the updated dataset for relationships between rock art, topography, and archaeology. Three groups of panels with shared characteristics were further investigated, focusing on the materiality of the carved rocks, their accessibility within the landscape, their potential social and religious dimensions, and their extended biographies within multiple contexts. Connections with seasonal expeditions for the procurement of stone were explored and the notion of natural route-ways applied to account for the location of rock art at key communication nodes. Concepts of 'natural monuments' and 'ancestral art' were also considered, with topographical elements such as rivers and mountains, and natural features like fissures and solution hollows, argued to be integral to a social and sacred landscape, which was signified and enhanced by rock carvings.
# Contents

<table>
<thead>
<tr>
<th>List of Figures</th>
<th>iii</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of Tables</td>
<td>x</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>xi</td>
</tr>
</tbody>
</table>

## Volume 1

1 These Curious Marks  
*Introducing the study area and research questions* ........................................... 1

### PART I  
The State of the Art: British and Irish carvings in 2007

2 Mapping & Measuring British Carvings  
*An update to the Rock Art Pilot Project Report (2000)* ........................................ 17

3 Interpreting Rock Art  
*Theoretical approaches to understanding the role of rock art* ............................... 48

### PART II  
Changing Pictures: Cumbrian rock art, old and new

4 Recognising Rock Art  
*Issues of identification and a critical appraisal of the published data for Cumbria* .... 73

5 Developing the Picture  
*New reports, targeted surveys and recording methods* ........................................... 125

6 Contexts and Connections  
*Data analysis and discussion* .................................................................................. 192

## Volume 2

### PART III  
Perspectives and Perceptions: Three themed studies

7 Lakeland Landmarks  
*Cup-marked outcrops in the central Lake District valleys* ....................................... 228

8 The Axe Factor  
*The sacred and social dimensions of prehistoric carvings in Great Langdale* ............. 302

9 East of Eden  
*Rock art in monumental settings* .............................................................................. 336

10 Reflections and Projections  
*Research outcomes and directions for future work* ................................................. 386

*Bibliography* .................................................................................................................. 396
Appendices

A Tables relating to the evaluation of Cumbrian panels in Part II ................................. 413
B Cup-mark measurement (Chapter 5) ................................................................. 426
C Data tables used for GIS Analysis in Chapter 6 ................................................. 433
D Results of SMR searches considered in Part III ............................................... 444
E Inventory of all panels investigated ............................................................. 452
F Photo-gallery .................................................................................................. 519
Motifs, Monuments and Mountains

List of Figures

Figure 1-1: Research matrix .................................................................................................................................. 3
Figure 1-2: The county of Cumbria showing major towns, road systems and natural features. ...................... 8
Figure 1-3: County boundaries, National Park, and Character Areas (green lines) in Cumbria. .................... 10
Figure 1-4: Animal motifs at Goatscrag rock shelter, Northumberland. Photo: S. Forster ......................... 19
Figure 1-2: Footprint motifs on the Calderstones .......................................................................................... 20
Figure 2-1: Simple elements as categorised by Beckensall (1999: fig. 6.) .................................................. 21
Figure 2-4: Fluid curvilinear cup-and-ring art in an open location at Lordenshaw, Northumberland. ........... 21
Figure 2-2: Megalithic art. Internal panels at Barcleodiad-y-Gawres, Anglesey (left) and Loughcrew, Ireland (right). Photos: A. Stanfield (Anglesey) and P. Deakin (Ireland). .................................................... 22
Figure 2-6: Peak marks visible on well-preserved motif from Fylingdales Moor, North Yorkshire. .......... 23
Figure 2-7: Pecked areas at Knowth. Photos: P. Deakin. ............................................................................. 23
Figure 2-8: Fylingdales Moor, July 2003: two months before the fire ......................................................... 26
Figure 2-9: Rock art panel on Fylingdales Moor, July 2003. .................................................................... 27
Figure 2-10: Devastation on Fylingdales Moor shortly after the fire, March 2004. .................................... 27
Figure 2-11: Kerbed cairn showing contrast between ‘passage-grave’ and ‘cup-and-ring’ panels, and their proximity within the monument. Photos: G. Parry. ........................................................................................... 28
Figure 2-12: Multiple figures identified at Creswell Crags. After Pike et al., 2005. ...................................... 29
Figure 2-13: New panel on Barningham Moor found by NDRAP volunteer Richard Stroud in July 2006. .... 30
Figure 2-14: Recording pathways. .................................................................................................................. 36
Figure 2-15: Ketley Crag, Northumberland showing contrast between weathered motifs to the rear and recently exposed motifs in the foreground. .................................................................................. 37
Figure 2-16: Rubbing method at Tanum (Magnusson et al. 2001) .............................................................. 39
Figure 2-17: The wax rubbing method demonstrated in the field by Beckensall with resulting drawing by the author. .................................................................................................................................................. 39
Figure 2-18: Tracing motifs at Valcamonico, Italy. The mirror is used to reflect sunlight onto the rock surface, helping to highlight faint markings .............................................................................................. 40
Figure 2-19: Alastair Carty of Archaeoptics Ltd. demonstrates laser scanning at the Copt Howe panel in Cumbria. ........................................................................................................................................... 43
Figure 2-20: Laser scanning in progress at Lordenshaw, Northumberland. AHRC funded BTRAR Project .................................................................................................................................................... 44
Figure 2-21: Screen shot of 3D model of cup and ring motif at Chatton Sandyford, Northumberland, NDRA Project .............................................................................................................................................................. 44
Figure 3-1: Deer figures emerging from circular motifs. Left: at Ballochmyle (after Stevenson 1993); and right: in Galicia (after Pena, 1976). .................................................................................................................. 53
Figure 3-2: Ladder motifs unique to Ilkley Moor (after Edwards 1999, fig. 35). ............................................. 55
Figure 3-3: Distribution of passage grave art and Grooved Ware. After Bradley & Edmonds 1993, fig. 2.8. ... 56
Figure 3-4: Interpretation of the smallest Folkton drum. ............................................................................ 57
Figure 3-5: Grooved Ware pottery from Skara Brae (after Shepherd 2000, fig. 12.19) .................................. 57
Figure 3-6: Interlocking spirals. Left: on a carved stone ball (Photo from the National Museum of Antiquities of Scotland. Reproduced from Purse, 1974, p. 46) and: right: in Galicia (after Pena, 1976) ............................................................................................................ 58
Figure 3-7: Wave-like form of Rock No. 1, Naquane, Valcamonica ................................................................60
Figure 3-8: The summit of Langdale as depicted by Thomas Allom ................................................................67
Figure 4-1: Engraving from Roeke (1972: opp. page 112). ......................................................................... 74
Figure 4-2: Simpson lithographs (1967). Left: Long Meg (plate vii); Right: two carved stones at little Meg cairn circle (plate v). No. 2 is now lost ................................................................................................................................................. 76
Figure 4-3: The Asper’s Field Stone, depicted by Simpson (1867: plate xvii). ............................................ 76
Figure 4-4: The Redhills cist cover - now lost (Taylor 1883: 112). ............................................................... 77
Figure 4-5: Old Parks stones in situ capture by photography in 1902 (After Beckensall 2002: fig. 112). .......... 78
Figure 4-6: Kerb stone at Glassonby: 'touched-up' photograph by F. W. Tassell (Thornley 1902: fig. 3). ........ 79
Figure 4-7: Little Meg Cist cover, sketched by W. G. Collingwood (Thornley 1902: fig. 2). ......................... 79
Figure 4-8: The Eden Hall stone, drawn in 1910 (Ferguson 1910: 508). ..................................................... 79
Figure 4-9: Comparison between rock art contexts in Northumberland and Cumbria based on 2002 data .................................................................................................................................................. 84
Figure 4-10: The ‘Giants Grave, St Andrews Church, Penrith. Hog-back and cross shaft decorated with ‘cup-marks’ .................................................................................................................................................. 89
Figure 4-11: Rings on hard whinstone (left) appear different to rings on soft sandstone (right). Left: Little Meg kerbstone, Eden Valley, Cumbria. Right: portable cobbled, Maryport, Cumbria. Photo: S. Hood. ... 90
Figure 4-12: Different techniques. Left: clearly visible peck marks at Howdale Moor, North Yorkshire. Right: inscribed lozenge, Casterlidge, Cumbria (web ref #9) ...................................................................................... 91
Figure 4-13: Concentric rings at Copt Howe, Great Langdale showing different appearance of rings — style, skill, or technique? .................................................................................................................................................. 91
Figure 4-14: Geological patterns in Cumbria. A-C, Wythburn, Thirlemere; D Sedgalegate stone circle. ... 93
Figure 4-15: Natural patterns in Cumbria: Wythburn, Thirlmere (left) and Black Crag, (right). .................... 93
Figure 4-16: Factors influencing the present-day appearance of rock art ........................................................................... 94
Figure 4-17: Partially weathered natural cupules in Cumbria. Left: Elterwater (slate); and right Black Crag (Borrowdale Volcanic Series) .................................................................95
Figure 4-18: Natural cupules and circular features in Cumbria. A and B: Copt Howe; C: Wythburn and D: Black Crag. ................................................................................................................96
Figure 4-19: Looking east into the enclosure showing stone #11..................................................................................102
Figure 4-20: The spiral on stone #11 captured by digital photography on the left by Hannah Casement and on the right by Neil Stephenson (Beckensall 2002: pl.18 and fig. 82). The faint spiral can be seen to the left of the ranging pole ..................................................................................102
Figure 4-21: Recording at Castlerigg: left: 'Rubbing' in progress; centre: original rubbing; and right: drawing produced by Beckensall (Beckensall 2002: figs. 83 and 85) ........................................................................102
Figure 4-22: Wax rubbing of Castlerigg stone #11 by the author..................................................................................103
Figure 4-23: Images from the ground based remote sensing survey. (Figures courtesy of Dr Chris Brooke). 104
Figure 4-24: Oblique lighting on stone #11 highlights graffiti but no spiral. .................................................................104
Figure 4-25: Second enclosure stone (CU0018) with reported spiral motif. Photograph produced using oblique lighting (web ref #9). ..................................................................................104
Figure 4-26: Features recorded on the 'daughters' at Long Meg, after Beckensall (2002: figs. 75 and 76) ..................105
Figure 4-27: Long Meg No. 7 (CU0016) from Beckensall 2002 plate 15. Carved spirals or geology?.....................106
Figure 4-28: Location of marked stones recorded by Beckensall at Long Meg & Her Daughters. After Soffe & Clare (1988). .................................................................................................106
Figure 4-29: Beckensall recordings of the Goggleby Stone (left) and the Asper's Field Stone (right) (2002: fig. 130) ........................................................................................................................................108
Figure 4-30: Panorama showing Goggleby stone (left) and Asper's Field stone (left) with fells in distance to the north-west. .............................................................................................................108
Figure 4-31: The axe-shaped Goggleby stone and detail of the 'saucer'. .............................................................................109
Figure 4-32: Natural marking comparable to the Goggleby Stone on one of Long Meg's Daughters. .................109
Figure 4-33: The Asper's Field Stone: geological features? ..........................................................................................110
Figure 4-34: Interpretation of Hardendale kerbstone by Beckensall (2002: fig. 129) ..................................................110
Figure 4-35: Hardendale cairn circle, showing position of marked stone........................................................................111
Figure 4-36: Kerbstone with natural hollows at Hardendale. ..........................................................................................111
Figure 4-37: Cup and ring marked kerb stone recorded by Beckensall (2002: fig. 124) ..............................................112
Figure 4-38: Impression of cup-and-ring motif at Cairn 4, created by shadows. ..........................................................112
Figure 4-39: Geological structure of 'cup-and-ring' at Moor Divock. ........................................................................113
Figure 4-40: Cup-marked slab in Cairn no. 4 at Moor Divock. ......................................................................................113
Figure 4-41: Drawing of stone #5 at Castlerigg after Beckensall (2002: fig. 84). .........................................................113
Figure 4-42: Detail of stone #5 at Castlerigg showing impression of a cup-and-ring motif. ........................................114
Figure 4-43: Castlerigg 4 (stone #10). Left: Beckensall interpretation (2002: fig. 84); right: photograph with oblique lighting (web ref #9). ..................................................................................114
Figure 4-44: Natural cupules at Po House, Lacra. Photo: S. Hood ................................................................................115
Figure 4-45: Natural 'cups' at Gawthwaite Lands. ........................................................................................................116
Figure 4-46: Rubbing of Dean 'capstone' after Hood (2005: fig. 2) ..............................................................................116
Figure 4-47: The Dean 'capstone'. ................................................................................................................................117
Figure 4-48: Rubbed of Studfold Gate stone #1 after Hood (2005: fig. 6). ....................................................................117
Figure 4-49: Chevron patterns on stone at Studfold Gate .............................................................................................118
Figure 4-50: Horizontal groove at Studfold Gate stone circle. Photo: S. Hood. ..............................................................118
Figure 4-51: Broomrigg ' plaque' with interpretation. ........................................................................................................119
Figure 4-52: Beckensall interpretation of lozenge on stone #23 (2002: fig. 84). ........................................................120
Figure 4-53: Lozenge on stone #27 at Castlerigg. Photo: web ref #9........................................................................120
Figure 4-54: Aspatria cist stones as depicted in Rooke (1792: fig. opposite page 112). ..........................................122
Figure 4-55: Aspatria Stone 'I' as depicted in Beckensall (2002: fig. 173) .......................................................................122
Figure 4-56: Figures with shields. Left: Tanum 18; right: Tanum 90. Photos: web ref: #11.................................................122
Figure 4-57: Scandinavian 'Sun wheels'. Left: Tanum 157; right: Vivebroggaard, Norway. Photos: web ref: #11. 122
Figure 4-58: Flower motifs on the Equinox Stone, Cairn T, Loughcrew. Photo: Philip Deakin. ..............................123
Figure 4-59: Comparative contexts for original Cumbrian dataset, for confirmed panels, and for Northumberland dataset ...........................................................................................................................124
Figure 5-1: Cup-marks on prostrate stone at Shap ........................................................................................................130
Figure 5-2: Cup-marked outcrop near Crummock Water .................................................................................................131
Figure 5-3: Cup-marks on outcrop at Buttermere .........................................................................................................132
Figure 5-4: Cup-marked boulder at near Side Pike. Lower photo: Gabriel Blamires ..................................................133
Figure 5-5: Cup-marked outcrop at Broadgate Park, Grasmere. ....................................................................................134
Figure 5-6: Single cupule at Burthal Howe, Grasmere. Photo: A. Stanford ................................................................135
Figure 5-7: Gillalees 5 showing relationship with cairn. Photos: Brian Kerr .................................................................136
Figure 5-8: Slab at Lowick Common with natural solution hollow and possible cup-mark. ....................................137
Figure 5-9: Unusual chevron pattern on boulder in earthworks on the Greystoke Estate. Photo: K. Mounsey. .........................................................................................................................138
Figure 5-10: Cupules on outcrop near Elterwater showing two cups which may be carved ....................................139
Figure 5-11: Partially weathered cupule near Elterwater .............................................................................................140
Figure 5-12: Cup-and-ring marked stone at Tortie Cottage, typical of the north-eastern tradition of carvings in elevated positions. ................................................................. 142
Figure 5-13: Elevation of carved panels in Northumberland and West Yorkshire ........................................ 144
Figure 5-14: Elevation of panels in West Yorkshire and Chatton Parish, Northumberland, expressed as a percentage of the maximum local elevation. ......................................................... 145
Figure 5-15: View south-east from Moor Divock across Ullswater towards Patterdale. ..................................... 146
Figure 5-16: Sink holes in the limestone part of the moor ............................................................................ 147
Figure 5-17: Crossroads: Roman 'High Street' meets the track to Pooley Bridge. ........................................... 147
Figure 5-18: Location of Moor Divock showing landscape panels known at the time of the survey, in Cumbria and in the west of Northumberland. ......................................................... 149
Figure 5-19: View south towards Arthur's Pike. ............................................................................................. 150
Figure 5-20: Antiquarian map of remains on Moor Divock (Waistell Taylor 1886). ........................................ 150
Figure 5-21: Moor Divock showing Ullswater, route-ways and 2 km x 2 km survey area. .................................. 151
Figure 5-22: Map showing area surveyed, prehistoric and Roman remains, and possible rock art panels (red circles). .................................................. 152
Figure 5-23: Kerbstone at Cairn 5 with cupule (CU0103), thought to be geological. ......................................... 153
Figure 5-24: Cairn No. 4 ............................................................................................................................ 154
Figure 5-25: 'Cup-and-ring' mark recorded by Beckensall (CU0038). The feature appears entirely natural. .... 154
Figure 5-26: Possible cup-marks on slab in Cairn 4 (CU0039). ................................................................. 154
Figure 5-27: Remains of cist in 'star cairn' at White Raise. ......................................................................... 155
Figure 5-28: Limestone cist cover (CU0077) from White Raise 'star-fish' cairn. Hollows appear natural. ....... 155
Figure 5-29: Location of outcrops (●) used to develop model. West to east: Low Park, Syke Farm, Patterdale (4 panels). Red rectangles = areas selected for detailed survey. ● = Broadgate Park panel, found after the survey, but fitting the model. Base map courtesy of Countryside Agency, © 2005 (web ref #3) ............................................................................................................................................. 158
Figure 5-30: Extent of Thirlmere prior to dam, showing area with rock art potential to the right of the map. Based on map in Harwood J.J., History and Description of the Thirlmere Water Scheme. ............................................................................ 164
Figure 5-31: Southern end of Thirlmere, showing low water level in July 2005 .................................................. 164
Figure 5-32: Wyth Burn near to Steel End ...................................................................................................... 165
Figure 5-33: Boulder fields in lower valley .................................................................................................... 165
Figure 5-34: Potential outcrops in the Wyth Burn valley .............................................................................. 165
Figure 5-35: The Binka Stone on the western shore ....................................................................................... 166
Figure 5-36: Southern end of the lake revealed by the low water level.......................................................... 166
Figure 5-37: Area around Wythburn surveyed. Dotted line indicates area normally inundated ......................... 167
Figure 5-38: Outcrop to the north of the beck with unusual geological markings (CU0101). ......................... 168
Figure 5-39: Outcrop to the south of the beck (top) covered with geological markings (CU0103). ................. 169
Figure 5-40: Geological patterns on boulder to the south of the beck (CU0102). ........................................... 170
Figure 5-41: Striking boulders but no rock art .............................................................................................. 171
Figure 5-42: Survey areas (green) around Ambleside at the northern end of Lake Windermere ..................... 173
Figure 5-43: Outcrop at Waterhead, Lake Windermere behind ..................................................................... 174
Figure 5-44: Outcrop with natural cupules at Waterhead (CU0094). ........................................................... 174
Figure 5-45: Potential outcrops at Rothay Park, smoothed by glaciers and polished by sliding .................... 175
Figure 5-46: Unusual 'ring' feature at Rothay Park (CU0014). ................................................................. 175
Figure 5-47: Possible cup-mark on boulder on Barton Fell, west of the survey area. Photos: G. Parry. .............. 176
Figure 5-48: Circular feature on boulder on the north-west of Moor Divock (actual location unknown). Photos: S. Hood. ......................................................................................................................... 177
Figure 5-49: Scaled drawing in progress at Buttermere. .................................................................................. 181
Figure 5-50: Photogrammetry and GPS survey at Crummock. ....................................................................... 182
Figure 5-51: Section I of the Broadgate Park panel. Scaled plan based on tracing ......................................... 184
Figure 5-52: Motif on Copt Howe panel B capture by A) wax rubbing by the author; B) drawing based on wax rubbing published by Beckensall (2002: fig. 39); C) by photography; and D) tracing by the author ........................................................................................................................................ 184
Figure 5-53: Detail of Copt Howe panel A captured by tracing (left) and by wax rubbing followed by drawing (right). Interpretation on the left is by Beckensall (2002: fig. 31). ................................................................. 185
Figure 5-54: Points recorded by differential GPS on the Low Park outcrop ................................................ 186
Figure 5-55: 3D model of Low Park outcrop showing areas of carving ....................................................... 186
Figure 5-56: Vitrex™ profile gauge .............................................................................................................. 187
Figure 5-57: Asymmetrical erosion of cups on sloping surfaces .................................................................... 188
Figure 5-58: Cup-mark measurements .......................................................................................................... 188
Figure 5-59: Scatter chart showing the form of cup-marks on three Cumbrian panels and on one panel at Bryn Celli Ddu (BCD) on Anglesey .......................................................... 190
Figure 5-60: Grouped frequency distribution for diameter : depth ratios of cup-marks on all panels. .......... 190
Figure 6-1: Comparison between rock art contexts in original (2003) and revised (2007) datasets .......... 194
Figure 6-2: Distribution of original dataset (2003). ● = monumental context; ○ = landscape context; ................................................................. 195
Figure 7-42: Carved area of the surface, looking north towards the Vale of Lorton. ........................................ 255
Figure 7-43: Groupings of cups at Low Park outcrop, with major natural fissures. Recorded by scaled
drawing, 2005. .......................................................... 256
Figure 7-44: Detail of cups at Low Park. Top left: gp. I; top right: gp. III; middle: gp IV; bottom: gp. V.
Recorded by scaled drawing, 2005. ........................................ 257
Figure 7-45: Group II - possible 'domino' arrangement. .......................................................... 258
Figure 7-46: Deep cup (Group V), smoothed by water. .......................................................... 258
Figure 7-47: Location of Syke Farm panel. .................................................................................... 259
Figure 7-48: Syke Farm panel with Mill Beck in foreground. .............................................................. 259
Figure 7-49: Plan view of the Syke Farm panel, recorded by scaled drawing. .......................................... 260
Figure 7-50: Syke Farm panel. Additional motifs lie beneath the turf to the left. ...................................... 260
Figure 7-51: Detail of motifs at Syke Farm. ....................................................................................... 261
Figure 7-52: Broadgate Park, Grasmere. A rock art site with its own pay and display car park! .................. 262
Figure 7-53: Location of Broadgate Park outcrop. ............................................................................. 262
Figure 7-54: Smooth, sloping north face, without carvings. ............................................................... 263
Figure 7-55: Upper surface with cup-marks (Group I) and natural fissures. .......................................... 263
Figure 7-56: Plan view of Broadgate Park carvings, recorded by tracing. Dotted lines indicate edge of turf.
Recorded by tracing, 2006. .......................................................... 264
Figure 7-57: Detail of carved areas at Broadgate Park. Recorded by tracing, 2006. ................................. 265
Figure 7-58: Greenrigg 3. Detail of southwest side. After Beckensall (2002: fig. 18). ................................. 269
Figure 7-59: Rows of cups. Left: Old Bewick; right: Hazelfrigg. (Web ref #5) ......................................... 270
Figure 7-60: The Idol Stone, Ilkley Moor. ....................................................................................... 270
Figure 7-61: Extended parallel grooves at Lordenshaw (4e). (Web ref #5) ................................................. 270
Figure 7-62: Low Park. Distinctive natural patterning on rock surface. ................................................... 271
Figure 7-63: Low Park. 'Molten' appearance and ripples. .......................................................... 272
Figure 7-64: Wave-like form of Low Park outcrop. ............................................................................. 272
Figure 7-65: Broadgate Park: Group I looking south with fissure 'star'. .................................................... 274
Figure 7-66: Broadgate Park: Detail of Group I with 'star' of crossing fissures. ........................................ 274
Figure 7-67: Greenrigg 3 after Beckensall (2002: fig. 17) showing 'star' of crossing fissures, and grooves emanating from horizontal fissure. .......................................................... 274
Figure 7-68: Parallellines and fissures at Low Park. Parallel lines and fissures at Low Park. ......................... 275
Figure 7-69: Detail of Greenrigg 3 showing contrast between natural fissures (horizontal) and carved
grooves (vertical). Photo: Tim Cook ............................................................................................... 275
Figure 7-70: Clacton-style Grooved Ware, (After Longworth 1971). ......................................................... 275
Figure 7-71: Cups in slate outcrop at Burrow Ned, Isle of Man. Photo: A. Stanford. ................................. 277
Figure 7-72: The cup-marked outcrop at Bryn Celi Ddu, Anglesey. ......................................................... 277
Figure 7-73: Bryn Celi Ddu: the smooth upper surface. Photo: A. Stanford. .................................................. 278
Figure 7-74: Compromise of cups. Left: Bryn Celi Ddu (Photo: A. Stanford); right: Low Park, Cumbria. 278
Figure 7-75: Prehistoric sites and finds within 5 km of the Patterdale outcrops (●); (●) = site; (▲) = find-spot. 280
Figure 7-76: Glencoyn Park Survey. (After Hoachen & Loney 2007: fig.11.3) ....................................... 280
Figure 7-77: Prehistoric sites within 5 km of the carvings at Low Park. No finds are documented. ......... 281
Figure 7-78: Prehistoric sites and finds within 5 km of the carvings at Syke Farm. ................................. 282
Figure 7-79: Undated earthwork known as 'Kirkstead' near Low Park outcrop. (After Mason & Valentine 1924: 121) ......................................................................................................................... 282
Figure 7-80: Prehistoric sites and finds within 5 km of the Broadgate outcrop. ● = earthworks or monuments; ▲ = find-spot. (Small red circle is rock art site at Copt Howe). ................................. 284
Figure 7-81: Boulders in the churchyard at St. Oswalds, Grasmere. The remains of a megalithic
monument? .......................................................................................................................... 284
Figure 7-82: View south across valley floor from Crookabeck. ............................................................... 287
Figure 7-83: Location of Low Park outcrop in valley bottom. ............................................................... 287
Figure 7-84: Low Park: view south towards Crummock Water and central fells, Rannerdale Knotts in
centre. .......................................................................................................................... 290
Figure 7-85: Syke Farm: view north-west over carved panel towards Crummock Water (just visible). .... 291
Figure 7-86: Syke Farm: view south-east towards Buttermere (not visible); Haystacks beyond. ............... 291
Figure 7-87: View west towards Loweswater Fell. .................................................................................. 292
Figure 7-88: View south-west with Arnison Crag beyond. Photo: Stan Beckensall. ............................... 292
Figure 7-89: 'Lion and Lamb'. The summit of Helm Crag viewed from the Broadgate Park outcrop. ......... 293
Figure 7-90: Routes postulated by Plint, after Waterhouse (1985, fig. 2.8) ................................................ 295
Figure 7-91: Central Lake District: slope surface. Darker shading indicates steeper slope; ● = outcrop site. 296
Figure 7-92: Central Lake District: cost surface. Darker shading indicates higher cost; ● = outcrop site. 296
Figure 7-93: Relationship between ancient mountain routes and carved outcrops. Green lines indicate former
Roman roads; arrows indicate drove roads. After (Hindle 1984: fig. 5.8). .................................................. 296
Figure 7-94: Kirkstone Pass. View north towards Patterdale. ............................................................... 299
Figure 7-95: Dug-out boat found at Branthwaite, after (Ward 1974: fig. 2). ............................................... 300
Figure 8-1: Central location of Copt Howe site ....................................................................................... 304
Figure 8-2: Topography of Great Langdale showing Copt Howe and other nearby rock art panels. ......... 304
Figure 8-3: Complex composition and natural cupules on flat, vertical panel of Boulder A ............................. 305
Figure 8-4: The Langdale Pikes viewed over the Langdale Boulders. Carved areas of Boulders A and B highlighted. Photo: Adam Stanford. ................................................................. 305
Figure 8-5: Interpretation of Panel A at Copt Howe. (After Beckensall 2002, fig. 39) ................................ 307
Figure 8-6: Rings without cups in Cumbria, after Beckensall, 2002: A: Little Meg; B: Glassonby; and C: Maryport. (Not to scale). ........................................................................................................... 308
Figure 8-7: Concentric ring motifs on Boulder A at Copt Howe ................................................................. 308
Figure 8-8: Triple chevron design at Copt Howe (top) and below, detail from one of the Calderstones, Liverpool. (After Forde-Johnstone, 1957, fig. 2) ......................................................... 309
Figure 8-9: Area of diffuse pecking on Boulder A, Copt Howe ................................................................. 310
Figure 8-10: Detail of closely-pecked area on Boulder A, Copt Howe, recorded by tracing .............................. 310
Figure 8-11: Incomplete (?) ring motif on Boulder B at Copt Howe .............................................................. 311
Figure 8-12: Boulder B showing area of lost rock. Location of single motif indicated by white ring. Photo: Adam Stanford. ........................................................................................................... 311
Figure 8-13: Langdale Pikes framed by the carved boulders. (modern wall not included). Red arrows indicate direction of photographs in Figures 8-16 and 8-17 ................................................................. 312
Figure 8-14: Sketch plan and profile of the group of boulders (modern wall not included). Red arrows indicate direction of photographs in Figures 8-16 and 8-17 ........................................................................... 316
Figure 8-15: Approaching the ‘passage-way’ from the east ............................................................................ 316
Figure 8-16: Views A (approaching the ‘passage-way’); B (looking towards the .............................................. 317
Figure 8-17: Views D (southern approach); E (northern approach); and F (northern grouping). ...................... 318
Figure 8-18: The ‘cave’ directly below the motif on Boulder B. Photo: Adam Stanford .................................. 319
Figure 8-19: Roughed out Group VI axe ........................................................................................................ 321
Figure 8-20: Site of the main stone quarry at Pike O’Stickle ........................................................................... 321
Figure 8-21: The valley of Great Langdale viewed from the summit of Loft Crag, showing the location of the carved boulders and the route south via Lake Windermere .......................................................... 322
Figure 8-22: Starburst sun over Harrison Stickle on June 22 2005 as viewed from the top of Boulder B ........ 325
Figure 8-23: Statistics observations, June 22 2005 ....................................................................................... 326
Figure 8-24: Interpretation of the path of the sun along the northern flank of Harrison Stickle ....................... 327
Figure 8-25: Motifs superimposed over a silhouette of the mountains: representational art? ....................... 328
Figure 8-26: ‘Map’ interpretation of the Copt Howe carvings by ‘Iron Man’ (web ref #14) ............................ 328
Figure 8-27: Map showing rock art sites in Langdale in relation to the Langdale Pikes. The carved outcrop at Grasmere lies in the next valley. Aerial photograph from Google Earth ......................................................... 329
Figure 8-28: Location of Side Pike carved boulder within larch plantation. The footpath can be seen in the background. ........................................................................................................................................... 330
Figure 8-29: Plan view of the boulder with cup-marks. Drawing based on .................................................... 330
Figure 8-30: View of the Langdale Pikes from in front of the carved boulder (outside of the decorated stones and putative ‘guide’ stones). ................................................................................................. 333
Figure 8-32: Pointed stone found by the author on route-way proposed by Blamires (2006). Note how the boulder echoes the shape of the mountain ........................................................................................................................................... 333
Figure 8-33: An alternative explanation for the Copt Howe carvings? Cartoon from The Westmorland Gazette (Anis 1999: 19) .................................................................................................................. 335
Figure 9-1: Satellite photograph showing the location of the Eden Valley ................................................... 337
Figure 9-2: The Eden Valley (Google Earth) .................................................................................................. 337
Figure 9-3: Countryside Agency map of the Eden Valley (Character Area No. 9) ........................................... 338
Figure 9-4: Solid geology of Cumbria showing Eden Valley and area of Permian sandstone. (After Higham 1986: fig. 1.1) ......................................................................................................................... 339
Figure 9-5: Geological section east-west across northern Britain showing Eden Valley ......................... 339
Figure 9-6: Eden Lacy Viaduct, Little Salkeld. Photo: S. Ledingham .......................................................... 340
Figure 9-7: Upper reaches of the River Eden, where field-walking has produced evidence of occupation. Photo: S. Ledingham ................................................................. 341
Figure 9-8: Mayburgh Henge. Photo: S. Ledingham ...................................................................................... 342
Figure 9-9: King Arthur’s Round Table. Photo: S. Ledingham ........................................................................ 342
Figure 10-10: View over Long Meg and Her Daughters across the valley towards Cross Fell and the Pennines. Photo: S. Ledingham ................................................................. 343
Figure 9-10: Major monuments around the Eden Valley. Large circles = enclosures and henges; small circles = stone circles and kerbed cairns; squares = linear cairns. Red circle indicates rock art present ................................................................. 344
Figure 9-12: Four monumental sites with rock art to the east of the Eden ................................................... 347
Figure 9-13: Plan of the circle by Dymond (surveyed in 1875), showing relationship between Long Meg and the central point of the circle (as defined by him). After Dymond (1881) ......................................................................................... 349
Figure 9-14: Left: interpretation of the carvings by Beckensall (2002: fig. 70); right: oblique lighting highlights carvings. Photo: Megalithics (web ref #9) ......................................................................................... 350
Figure 9-15: Detail of concentric circle motif on Long Meg. Photo: Alice Simpson. ........................................ 350
Figure 9-16: Plan of the Long Meg site showing parch marks. Potentially prehistoric features shown in red. Note also alignment of Long Meg with enclosure entrances. (After Soe & Clare 1988: fig. 1) .... 351
Figure 9-17: Plan of Little Meg kerbed cairn by Dymond, 1875. (Collingwood, 1913: 407) ............................ 352

viii
Figure 9-18: Lost kerbstone at Little Meg recorded by Simpson (1867, plate V) ............................................. 353
Figure 9-19: The much-disturbed Little Meg cairn in 2003 ..............................................................................
Figure 9-21: Little Meg carvings recorded by Beckensall (2002: fig. 92) (left) and detail captured by Megalithics (web ref #9) (right). ................................................................. 354
Figure 9-22: Little Meg cist cobble no. 1. Left - recording by Beckensall (2002: fig. 95); right - photograph from Beckensall (2002; plate 26). .................................................. 354
Figure 9-23: Glassonby cairn recorded by W.G. Collingwood (1901: 296). The two Xs mark possible positions of a second carved stone. ................................................................. 356
Figure 9-24: The Glassonby kerbstone photographed by Megalithics (web ref #9). ........................................... 356
Figure 9-25: Glassonby kerbstone interpreted by Beckensall (2002: fig. 101). .......................................................... 357
Figure 9-26: Cup-marked cobble from the cairn, found at the edge of the field. ....................................................... 357
Figure 9-27: Old Parks stones in situ captured in 2002 (From Beckensall 2002: fig. 112) ........................................ 358
Figure 9-28: Sketch plan of Old Parks mound after Beckensall (2002: fig. 108). Red lines indicate carved faces. .......................................................................................................................... 358
Figure 9-29: Old Parks stones interpreted by Beckensall (2002: fig. 113-115). .......................................................... 359
Figure 9-30: Redhills cist cover, recorded by Taylor, 1883. ................................................................................... 360
Figure 9-31: Eden Hall stone at the Tullie House Museum, Carlisle. .......................................................... 362
Figure 9-32: Impressions of the Eden Hall stone. a) antiquarian sketch (Fergusson 1910: 508); b) drawing, Frodsham (1989: fig. 3); c) drawing from a wax rubbing (Beckensall 2002: fig. 166) .................. 362
Figure 9-33: Examples of enclosing grooves from a) Carlington Castle, and b) Corbridge, both in Northumberland. (Web ref #5; not to scale). .............................................................. 362
Figure 9-34: Penrith cup-marked sandstone cobbles (Front and reverse). .......................................................... 363
Figure 9-35: Penanular motifs at Stagstones Farm (left) and Ruckroft (right). From Beckensall (2002: fig. 161 and 159 resp.). .......................................................... 364
Figure 9-36: Examples of portable penanulars. Not to scale. (Northumberland examples from Beckensall archive, web ref #5). .............................................................. 365
Figure 9-37: The River Eden close to Long Meg and Her Daughters. Photo: S. Ledingham. .................................. 368
Figure 9-38: View across Great Salkeld to the Eden showing approximate position of the monuments. Photo: S. Ledingham. .............................................................. 368
Figure 9-39: Lacy's Caves. Photo: S. Ledingham. .......................................................................................... 368
Figure 9-40: Possible 'truncated motif' on Long Meg. Photo: Alice Simpson. ...................................................... 369
Figure 9-41: Upper part of Long Meg. Left: Beckensall recording (2002: fig. 70); Right: laser scan (Diaz-Andreu et al 2005: fig. 1) .......................................................... 370
Figure 9-42: The decorated cliff above the River Coquet, Northumberland; cf. Figure 9-39. Photo: Gus van Veen & Jan Brouwer. .......................................................... 370
Figure 9-43: Detail from Morwick; cf. Figure 9-15. Photo: Gus van Veen & Jan Brouwer. .................................... 370
Figure 9-44: Plan of Long Meg and Her Daughters by Thom (1967: 151) showing circle proposed construction and alignments. .............................................................. 372
Figure 9-45: Long Meg viewed through the entrance stones, showing oblique angle of carved face. Photo: Alice Simpson. .............................................................. 372
Figure 9-46: Topographical plan showing possible relationship between Long Meg and the enclosure. The bank of the stone circle is also visible. After Clare 2006: 9. .................................................................................................................. 373
Figure 9-47: Long Meg as viewed from the 'passage' between the stone circle and the enclosure, with 'notched' top visible (see inset). Photos: Alice Simpson. ...................................................... 373
Figure 9-48: Glassonby kerb, with colours based on stone types described by Collingwood (1901: 297-298). .................................................................................. 379
Figure 9-49: Comparison between motif on stone C4 (left) in Cairn I. Loughcrew (after Shee Twohig 1981: fig. 218) and Little Meg kerbstone (after Beckensall 2002: fig. 92). ........................................................................ 380
Figure 9-50: View of the Millin Bay cairn from the north on completion of excavation. From Collins et al, plate 1. .................................................................................. 381
Figure 9-51: Comparison between decoration on stone M19 (left) from the inner stone setting at Millin Bay (After Collins et al, fig. 12) and stone #3 (right) from Old Parks cairn in the Eden Valley (After Beckensall, 2002: fig. 113). .................................................................... 381
Figure 10-1: James Simpson, L.L.D., F.S.A., Hon. Canon of Carlisle. President of the Cumberland and Westmorland Antiquarian and Archaeological Society. .................................................. 395
List of Tables

Table 1-1: Context analysis of carved panels in Cumbria and Northumberland .................................................. 6
Table 1-2: Correlation between Natural Areas and Character Areas for Cumbria .................................................. 9
Table 2-1: Estimated numbers of rock art panels in Britain, Nov 2006 ............................................................... 31
Table 2-2: Graphical capture of rock art .............................................................................................................. 35
Table 2-3: Rock art recording methods: pros and cons. ....................................................................................... 45
Table 3-1: Broad outline of rock art traditions and contexts. ............................................................................ 51
Table 4-1: Chronology of rock art discovery in Cumbria and key publications to 2002 ..................................... 82
Table 4-2: Regional and contextual variation of Cumbrian panels known in 2002 based on Countryside Agency Character Areas. ............................................................................................................. 83
Table 4-3: Comparison between rock art contexts in Northumberland and Cumbria based on 2002 data ........ 84
Table 4-4: Cup-marks: natural or not? ................................................................................................................. 97
Table 4-5: Scoring system to assess the probability of cup-marks being of natural or artificial origin. .......... 98
Table 4-6: Data sources (No. in parentheses indicates no. sites/panels not included in other listed sources) .... 99
Table 4-7: Locations of published panels and evaluation methods ................................................................. 100
Table 4-8: Summary of results of appraisal of published data ........................................................................ 100
Table 4-9: Comparison between rock art contexts for Cumbria for original dataset, for confirmed panels, and for Northumberland dataset ................................................................. 124
Table 5-1: Professional contacts established ...................................................................................................... 126
Table 5-2: Amateur contacts established .............................................................................................................. 126
Table 5-3: Talks given on Cumbrian rock art .................................................................................................... 127
Table 5-4: Summary of results for potential new panels .................................................................................. 129
Table 5-5: New and unresolved panels identified following public appeals and from other sources .............. 129
Table 5-6: Elevation of rock art panels in Northumberland and West Yorkshire .............................................. 144
Table 5-7: Elevation of panels in West Yorkshire and Chatton Parish, Northumberland, expressed as a percentage of the maximum local elevation ................................................................. 145
Table 5-8: Landscape position of ‘landscape’ art known in Cumbria at the time of the survey. .......................... 146
Table 5-9: Small finds on Moor Divock ................................................................................................................ 148
Table 5-10: Summary of possible rock art on and around Moor Divock with results of evaluation .................. 153
Table 5-11: Common characteristics of ‘lake’ sites ............................................................................................ 159
Table 5-12: Phase I - Analysis of major lakes for required characteristics using OS 1:25000 maps ................. 160
Table 5-13: Phase II - Preliminary Visits ............................................................................................................. 161
Table 5-14: Common characteristics of ‘lake’ sites with new site added for comparison .............................. 178
Table 5-15: Summary of cup-mark measurements in millimetres .................................................................... 189
Table 5-16: Summary of recording techniques used. ....................................................................................... 191
Table 6-1: Results of evaluation of published rock art (see Chapter 4). ............................................................... 194
Table 6-2: New rock art identified during the study (see Chapter 5). ................................................................. 194
Table 6-3: Comparison between old (2003) and current (2007) rock art data .................................................. 194
Table 6-4: Geological events in Cumbria after (Shackleton 1966). ................................................................. 201
Table 6-5: Pollen Zones .................................................................................................................................... 202
Table 6-6: Distribution frequency across Countryside Character Areas (confirmed panels only). ................. 204
Table 6-7: Characteristics of panels in landscape contexts ............................................................................... 212
Table 6-8: Characteristics of panels in monumental contexts .......................................................................... 213
Table 6-9: Confirmed panels in other contexts ................................................................................................. 214
Table 6-10: Architectural development of stone circles proposed by Burl with radiocarbon dates derived from associated artefacts. ........................................................................................................ 219
Table 7-1: Locations of sites and panel references, in order of discovery .......................................................... 230
Table 7-2: Outcrop and ‘panel’ characteristics (For Greenrigg and Crookabeck, areas were totalled) ............. 267
Table 7-3: Approximate frequency of motifs on Cumbrian outcrops (counts for Patterdale sites based on Beckensail recordings) ........................................................................................................ 268
Table 7-4: Location characteristics of panels discussed in Chapter 7. ............................................................... 288
Table 9-1: Major monuments in the Eden Valley. (p-m) = parch mark only; Red font = rock art present .... 345
Table 9-2: Eden Valley Panels in monumental contexts .................................................................................. 348
Table 9-3: Eden Valley panels with unknown original context ........................................................................ 361
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Motifs, Monuments & Mountains:  
*Prehistoric Rock Art in the Cumbrian Landscape*  

**Volume 1 of 3**

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*Thesis submitted for the degree of Ph.D.*  
Department of Archaeology  
Durham University  
2007

**Contents of Volume 1**

1. These Curious Marks  
   *Introducing the study area and research questions* ...................................................... 1

PART I  
The State of the Art: British and Irish carvings in 2007

2. Mapping & Measuring British Carvings  
   *An update to the Rock Art Pilot Project Report (2000)* ............................................ 17

3. Interpreting Rock Art  
   *Theoretical approaches to understanding the role of rock art* ................................... 48

PART II  
Changing Pictures: Cumbrian rock art, old and new

4. Recognising Rock Art  
   *Issues of identification and a critical appraisal of the published data for Cumbria* .......... 73

5. Developing the Picture  
   *New reports, targeted surveys and recording methods* ............................................. 125

6. Contexts and Connections  
   *Data analysis and discussion* ................................................................. 192
Chapter 1: These Curious Marks

Introducing the study area and research questions

The curious markings recently discovered upon Long Meg, at Maughanby, at Shap, and at other places, have added new interest to these ancient monuments, and may enable us eventually to learn their history. That the mystery will be cleared up, I fully believe, though it may happen that those who first essay an explanation of these strange characters or curious symbols, or seek to assign to them a date or a meaning will... err from the truth... Whatever the meaning of these curious marks, and whatever they may symbolize... we shall do well – each in his own locality – to keep his eyes open and examine these upright stones – whether in a circle or standing alone – to see if we can find any such marks upon them.

Read at the inaugural meeting of the Cumberland and Westmorland Antiquarian and Archaeological Society (CWAAS), in Penrith on Sept. 11th 1866 by the Reverend James Simpson, Vicar of Kirkby Stephen

Almost one hundred and fifty years have passed since Simpson’s ‘call to arms’ and he would perhaps be surprised to learn that although these ‘curious markings’ continue to captivate and to intrigue, and many more examples have been identified, their meaning remains elusive: the ‘mystery’ is yet to be ‘cleared up’. These designs, pecked or incised onto boulders, outcrops and megaliths throughout northern Britain are an invaluable legacy: a unique insight into the minds of our prehistoric ancestors, more intimate than their great monuments and potentially more meaningful than the tools of their daily lives. Unlocking their secrets could lead to a fuller, deeper understanding of the communities who inhabited the prehistoric landscape, yet until very recently the relevance of rock carvings to studies of wider British prehistory has frequently been overlooked or underestimated, and a definitive, comprehensive explanation of their role is yet to be determined.

Exactly when the meaning and significance of the carvings became lost is unknown; no mention of them appears in the historical record until eighteenth century antiquarians became interested in local heritage and began avidly recording them. Rock-art continued to fascinate successive generations of amateur scholars from Sir James Y. Simpson and George Tate in the 1860s through to Ronald Morris and Stan Beckensall in the late twentieth century, yet the lack of contextual evidence made the study of petroglyphs unattractive to professional protagonists. It was only towards the end of the twentieth century, with changes in theoretical approaches, that British rock art become an acceptable field of study for academic archaeologists. Recognising its potential, Bradley (1991; 1993; 1994; 1997) and later Waddington (1996; 1998) used new ‘landscape’-based studies to give rock art a more prominent role in prehistoric research, and in the year 2000 English Heritage published the findings of a wide-ranging survey of the state of British rock art.

1 The tradition continues with enthusiasts reporting and discussing their finds on web sites such as The Modern Antiquarian (web ref #1) and the British Rock Art Blog (web ref #2).
the Rock Art Pilot Project, or RAPP (RAPP 2000). This provided a comprehensive overview of all aspects of rock art in Britain and made a number of recommendations for future research, management and education.

Today the debate continues with fresh generations applying the latest theoretical paradigms and innovative recording techniques. Many more examples have been identified, and fieldwork by O'Connor in Ireland (2003), Waddington in Northumberland (2005), and Jones in Kilmartin (2006) has begun to uncover tangible evidence relating to chronology and activities surrounding rock art sites. Yet despite the copious data now collated and the variety of approaches applied, research has so far generated more questions than it has answered. These range from fundamental concerns with dating to more specific issues of motif interpretation. There is also a broader, cultural dimension. Do styles of carving reflecting regional influences and traditions? Questions have also arisen concerning basic, universal human neuropsychology including our instincts to communicate, to express ourselves, and to connect with our surroundings. In the last five years research in Britain has focussed either on single sites, for example Hunterheugh (Waddington et al. 2005) and Cronk yn How (Darvill & O'Connor 2005), on elements of design (Evans & Dowson 2004; Jones 2005; Jones 2006), or on specific aspects of recording and analysis (Trinks et al. 2005; Diaz-Andreu et al. 2006; Winterbottom & Long 2006). With few exceptions (e.g. Hale 2003) all regional studies have been undertaken by amateur groups or individuals, and primarily consist of gazetteers (e.g. Beckensall 2002; Boughey & Vickerman 2003; Brown & Chappell 2005) which, whilst providing an invaluable resource, include only minimal interpretation and limited attempts to integrate the rock art into the wider archaeological landscape; to date there has been no broad-based academic study at a regional level. This project takes just such an approach, focussing on a substantial area - the county of Cumbria in North West Britain. This region was a clear candidate for a number of reasons. A manageable number of rock art panels (66) had been well-recorded in a variety of contexts, but little interpretive work had been undertaken at any of the sites. Further, although no systematic survey had been undertaken in the region, two major new sites were identified just prior to the start of the study, suggesting that more awaited discovery. In addition, the county incorporates a number of highly contrasting landscapes from coastal lowlands to mountains and moors, providing useful comparisons, and the exaggerated topography of the central Lake District makes this an ideal area for considering relationships with the landscape and movement though it. Finally, the county is bounded on all sides by areas with strong traditions of rock art, raising questions about external influences and local traditions.

The following chapter sets the scene for the discussion which follows. Section 1.1 presents the main themes of the study and approaches used, and outlines the specific research questions to be addressed. Section 1.2 defines the geographical scope of the study, and Section 1.3 outlines the structure of the thesis.
1.1 Research Themes

The ultimate aim of any research into rock art is to understand the role(s) it played in the lives of both the communities who first created it, and later generations who encountered it. The exact meaning of the carvings may be beyond reach – requiring a knowledge and world-view now lost – yet a growing body of circumstantial evidence is beginning to shed some light on these 'curious marks', with an acknowledgment that the surrounding landscape, and the carved boulders and outcrops may themselves have held as much significance as the motifs inscribed upon them, and may form an integral part of a larger picture. Analyses have been undertaken at a variety of levels using a diverse array of theoretical and technical approaches, but it is only by piecing together the individual findings from each of these very specific research projects that a deeper insight into the purpose of the carved stones is achieved. This study therefore explores the rock art of Cumbria using a variety of perspectives and scales, from 'bird's eye' distribution mapping down to statistical analysis of cup marks, and the discussion encompasses both a wider consideration of the Cumbrian panels within the Atlantic tradition, and more detailed observations regarding the ways in which specific motifs relate to the canvases on which they were carved. A number of theoretical approaches were applied, with fact-based GIS analysis and detailed recording supporting softer phenomenological evaluations and ethnographic analogies. Throughout the research, the material was explored within the dual themes of 'context' and 'connections', both of which relate strongly to the landscape and to social activities within it. These were investigated through relationships between the rock art and a) the physical landscape, b) other rock art sites/panels, and c) the archaeological landscape. It was hoped that this holistic approach, drawing upon a range of theoretical approaches and applying various strands of enquiry at a regional level, would allow the construction of a more comprehensive picture of the role of rock art within both the natural and archaeological landscape of the area, providing a chronological and contextual framework which could potentially be extended to other regions in Britain.

<table>
<thead>
<tr>
<th>Relationships with landscape</th>
<th>CONTEXT</th>
<th>CONNECTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationships with other rock art sites/panels</td>
<td></td>
<td></td>
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<tr>
<td>Relationships with archaeological features and material culture</td>
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Figure 1-1: Research matrix
1.1.1 Context: integrating rock art

Current debates on rock-art highlight its social and symbolic significance within the landscape. The county of Cumbria offers a unique opportunity to test a number of theoretical models, as it has many of the elements currently argued (Bradley 1997; Waddington 1998) to be influential in the positioning of petroglyphs and critical to their symbolic relevance: elevated areas with extensive views; striking natural features; known route-ways, perhaps related to its stone axe trade, and numerous stone circles and standing stones. The rich monumental heritage of the region is supplemented by an extensive record of pollen analysis (Pennington 1970; Pennington 1975; Wimble et al. 2000), although there is scant evidence of prehistoric settlement (Evans 2004) and there has been little general analysis of the county as a whole. An objective of this research, therefore, was to take a broad view of both the archaeological record and the physical landscape and to investigate how the rock art dataset might relate to both of these, and also to findings from studies elsewhere in Britain. Cumbrian rock art has been found in a variety of contexts and encompasses contrasting styles, presenting an opportunity to explore changing ideologies, and the re-use of carved stones, adding a further time-dimension to the study. An analysis of these contexts and their relationship to dated archaeology was therefore undertaken in order to develop a chronological framework. At a more local level, this project provided the opportunity to carry out detailed measurements and research at a number of sites, described here in three themed studies (Chapter 7, 8 and 9). The aim here was to apply a range of theoretical models to discover whether rock art in specific contexts could reveal anything about the way in which prehistoric communities related to and interacted with the landscape.

1.1.2 Connections: a cultural melting pot?

The geographical situation of the region suggests a potential for a wealth of cultural influences. The county occupies a central position with respect to northern prehistoric communities, being within easy reach of the coasts of Ireland and the Isle of Man, Anglesey, and Galloway; to the north east lie the Scottish Lowlands, Northumberland and Durham, and across the Pennines is North Yorkshire. All of these areas have strong traditions of prehistoric art, with megalithic contexts predominating around the Irish Sea, and landscape traditions flourishing further east. Strong links throughout the prehistoric period are evinced by the movement of artefacts out of the area, particularly stone axes, and the presence of imported items, such as bronze from Ireland and flint from Yorkshire. The character of monuments in the east of the county has also been used to infer links with both east Yorkshire and with Ireland. This well-established 'melting pot' therefore provides a valuable setting in which to examine traditions of rock art, both in terms of style and their application in various contexts, and to consider both differences and similarities between rock art practices around Northern Britain. These ideas are explored in general terms in Chapter 6 and in more detail within the themed studies of Part III.

Before attempting to address any of these questions it was vital to understand fully the extent and quality of the available dataset. The first challenge of this research was therefore to verify and
establish the limitations of the record, and to evaluate the degree to which it reflected a true picture of rock art in the region.

1.1.3 Absence of Evidence?

The north-western county of Cumbria may appear an odd choice for the study of prehistoric rock carvings since it has few recorded examples as compared with the neighbouring counties of Durham, Northumberland, North Yorkshire and Dumfriesshire, contributing only 66 panels or 1.2% of the estimated total of 5500 for the entire British Isles. Yet this in itself raises an important question: does the current record reflect the true distribution of British rock art or is the relative scarcity of art in Cumbria a result of other factors? In contrast to other regions there has been no concerted effort to locate art in the county over the last fifty years. Only two 'catalogues' of known sites have been produced in recent years, by Frodsham (1989) and by Beckensall (2002). Almost all of the thirty sites (sixty-six panels) listed by Beckensall were chance finds reported by private individuals - workmen, landowners or local residents. Could field-walking detect more sites or does the paucity of carved stones in Cumbria relate to differing geology, topography, land-use or other factors? Beckensall's thirty sites are predominantly associated with monuments and burial cairns, or are 'portable' examples found out of context or re-used in stone walls. Fewer than 25% of the Cumbrian panels he lists can be classified as 'landscape' art (i.e. having no demonstrable association with monuments or other human-made features). Frodsham observes "the relative scarcity of megalithic carvings in Cumbria is in some ways compensated for by their diversity" (Frodsham 1989). With only a few exceptions this small but varied corpus of sites is clustered in the Eden Valley on the eastern side of Cumbria, close to a number of monuments including two henges and several stone circles, a marked contrast with neighbouring regions to the east and north where the vast majority (almost 65% - see Table 1.1) of sites comprise boulders or outcrops with no obvious context, generally on elevated marginal land. Similar upland areas clearly exist within Cumbria, so why has so little 'landscape' art been identified? Would targeted surveys reveal a different picture? These fundamental questions are addressed in Chapters 4 and 5.
Table 1-1: Context analysis of carved panels in Cumbria\(^2\) and Northumberland\(^3\)

<table>
<thead>
<tr>
<th>General Context</th>
<th>Panels</th>
<th>% of Total</th>
<th>Specific Context</th>
<th>Panels</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumbria</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art in the Landscape</td>
<td>16</td>
<td>24.2</td>
<td>Outcrops</td>
<td>5</td>
<td>7.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Boulders</td>
<td>11</td>
<td>16.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rock Shelters</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Art in Other Contexts</td>
<td>50</td>
<td>75.8</td>
<td>Ceremonial Monuments</td>
<td>17</td>
<td>25.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Burial Cairns</td>
<td>19</td>
<td>28.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Portable/Re-used Stones</td>
<td>14</td>
<td>21.2</td>
</tr>
<tr>
<td>Northumberland</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art in the Landscape</td>
<td>692</td>
<td>64.7</td>
<td>Outcrops</td>
<td>399</td>
<td>37.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Boulders</td>
<td>273</td>
<td>25.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rock Shelters</td>
<td>20</td>
<td>1.9</td>
</tr>
<tr>
<td>Art in Other Contexts</td>
<td>319</td>
<td>29.8</td>
<td>Ceremonial Monuments</td>
<td>18</td>
<td>16.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Burial Cairns</td>
<td>163</td>
<td>15.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Portable/Re-used Stones</td>
<td>238</td>
<td>22.2</td>
</tr>
</tbody>
</table>

1.2 The Study Area Defined

In any discussion of connections and context the identification of geographical and cultural domains is clearly fundamental. In order to understand movement, exchanges and influences it is necessary to understand the places and parameters involved. The use of modern geographical and administrative boundaries seems inappropriate to a discussion of prehistoric interactions; however, in order to describe discrete areas in a recognisable way it is necessary to use at least some twentieth century references. Happily, the present study area of 6,768 km\(^2\) can also be well-defined by topology and geology – elements which have remained relatively stable since prehistory. Bounded to the west by the Irish Sea, to the north by the Solway Firth and to the south by the Kent Estuary, this almost ‘peninsular’ area is open to the east only as far as the Pennine Mountains which run north-south forming a natural division between the neighbouring counties of Northumberland, Durham and Yorkshire. This region of diverse and exaggerated topography comprises mountains, lakes, valleys, moors, estuaries and coastal plains. The following section

\(^2\) Source = (Beckensall 2000)
\(^3\) Source = The Beckensall Archive (web ref # 5)
introduces the study area and considers how both administrative and natural boundaries can be useful in providing a framework for discussion.

1.2.1 Administrative Boundaries and Rock Art
The roughly oval area of mountainous land which projects into the Irish Sea on the north western coast of England has been known by many names. Today, this area corresponds roughly to the modern county of Cumbria, formed in 1974 from the amalgamation of the counties of Cumberland, Westmorland and parts of Lancashire North-of-the-Sands and North Yorkshire. The new eastern boundary joins with Dumfriesshire to the north, Northumberland to the north east, County Durham and North Yorkshire to the east, and Lancashire to the south. County boundaries such as these have strongly influenced the way in which British rock art sites have traditionally been recorded and analysed. The literature on British rock art sites tends to follow a traditional, hierarchical organisation with sites first defined by area/region and only then categorised by ‘type’ e.g. ‘outcrop/landscape’, ‘monument/megalith’. This regional approach is perhaps the legacy of the local amateur enthusiasts who have been (and remain) key to the identification and recording of sites. This is further perpetuated by the current system of archaeological information management in which data is divided into neat bundles for the county Sites and Monuments Records, with sites grouped by county boundaries. These artificial divisions make it difficult to see the bigger picture: Cumbrian rock art panels at Tortie Cottage (Richardson 1992) lie just 5 km from a group of panels at Hartleyburn across the border in Northumberland, yet these two sites never appear on the same distribution map, or in the same gazetteer. (In fact, one of the Hartleyburn panels lies on the Cumbrian side of the border). In Cumbria (as in most other counties with rock art) further complications occur since responsibility for the management of archaeological sites is divided between the County Council and the National Park Authority. This has resulted in the development of two databases with the National Park covering 2,292 km² in central Cumbria, and the County Council looking after the periphery⁴.

⁴ Data from the LDNP subset should theoretically be present on the CC SMR.
1.2.2 Alternative divisions

A number of classification systems have been developed to describe the English countryside at a landscape scale, ignoring county boundaries. These include the Institute of Terrestrial Ecology’s ‘Land Classification’, English Nature’s ‘Natural Areas’, and the Countryside Commission’s ‘Character Areas’. Whilst there is some commonality each classification has its own specific objectives and has been prepared using different approaches. The ITE Land Classification takes account of environmental parameters such as topography, climate, solid geology, drift geology, man-made features, island status and distance from coasts. It has been used as stratification for ecological survey and as a basis for modelling likely changes in land use. The Character of England (or Joint Character Map) published in 1996 by English Nature and the Countryside Agency, with help from English Heritage, describes England in terms of both natural and cultural aspects. There are 120 Natural Areas, many of which are coincident with Character Areas; the remainder comprise one or more of the 159 Character Areas. The Natural Areas are defined as bio-geographic zones that reflect the geological foundation, the natural systems and processes and wildlife; the Character Areas are defined as having “a unique sense of place” (web ref #3). The county of Cumbria falls within several Natural Areas (numerical designations in parentheses): Solway Basin (6), Eden Valley (9), West Cumbrian Coastal Plain (7), and Cumbrian Fells and Dales (10). It also incorporates part of the Border Uplands (2), North Pennines (4), and the
Yorkshire Dales (8). Cumbrian rock art has been recorded in all of these areas with the exception of the Yorkshire Dales (although many examples are located on the Yorkshire side of the area).

In summary, the geographical scope of this study corresponds roughly to the county of Cumbria, but this administrative boundary is only loosely applied; although administrative boundaries are widely recognised and therefore provide a useful framework for discussion, they can also be misleading. The Character Areas provide a more relevant way to describe the study area and to analyse distribution, and will be used throughout this thesis.

<table>
<thead>
<tr>
<th>English Nature Natural Areas</th>
<th>ID No.</th>
<th>Countryside Agency Character Areas</th>
<th>ID No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumbria Fells and Dales</td>
<td>10</td>
<td>Cumbria High Fells</td>
<td>8</td>
</tr>
<tr>
<td>Cumbria Fells and Dales</td>
<td></td>
<td>Cumbria Low Fells</td>
<td>19</td>
</tr>
<tr>
<td>Cumbria Fells and Dales</td>
<td></td>
<td>Morecambe Bay Limestones</td>
<td>20</td>
</tr>
<tr>
<td>Cumbria Fells and Dales</td>
<td></td>
<td>Orton Fells</td>
<td>17</td>
</tr>
<tr>
<td>Cumbria Fells and Dales</td>
<td></td>
<td>Howgill Fells</td>
<td>18</td>
</tr>
<tr>
<td>Border Uplands</td>
<td>2</td>
<td>Border Moors and Forests</td>
<td>5</td>
</tr>
<tr>
<td>Border Uplands</td>
<td></td>
<td>Tyne Gap and Hadrian's Wall</td>
<td>11</td>
</tr>
<tr>
<td>Eden Valley</td>
<td>9</td>
<td>Eden Valley</td>
<td>9</td>
</tr>
<tr>
<td>Solway Basin</td>
<td>3</td>
<td>Solway Basin</td>
<td>6</td>
</tr>
<tr>
<td>West Cumbrian Coastal Plain</td>
<td>11</td>
<td>West Cumbrian Coastal Plain</td>
<td>7</td>
</tr>
<tr>
<td>North Pennines</td>
<td>4</td>
<td>North Pennines</td>
<td>10</td>
</tr>
<tr>
<td>Yorkshire Dales</td>
<td>8</td>
<td>Yorkshire Dales</td>
<td>21</td>
</tr>
</tbody>
</table>
1.3 Prehistory in Cumbria: a case of neglect?

In 2004 Helen Evans posed the question *Where is the Cumbrian Neolithic?* She is not alone in recognising that the archaeology of prehistoric Lakeland is far from clear; in a paper entitled *Forgotten land: what’s going on in Bronze Age Cumbria?*, Loney and Hoan explored a similar theme (Bronze Age Forum, 2004), and the recently published *North West Region Archaeology Framework Assessment* suggests little has changed in the last forty years, stating that "It is evident that the North West lies somewhat behind other regions in terms of research initiatives and projects" (Brennand 2005).
Given the presence of a number of impressive, extant remains one might expect the county to be well probed and recorded by professional archaeological researchers. In fact this is far from the case, with most monuments receiving only scant interest from academia and many having been recorded only by antiquarian scholars, and more recently by amateur enthusiasts (some extremely skilled and knowledgeable). Very few large-scale or extended modern projects have been undertaken on prehistoric sites in the area, notable (published) exceptions including surveys at Langdale (Claris & Quartermaine 1989) and at Matterdale by Glasgow University (Hoaen & Loney 2003), and the North West Wetlands Survey (Hodgkinson et al. 2000) that provides a comprehensive review of the archaeology of a substantial part of the county.

The majority of archaeological work in Cumbria has instead been undertaken by local units: Oxford Archaeology North (previously Lancaster University Archaeology Unit), North Pennines Archaeology Ltd., and Headland Archaeology; or by the National Trust or National Park Authority (Brennand 2005; Mackintosh 2005). Much of the professionally-undertaken, non-development led fieldwork is driven by a need to inform management strategies. However, a substantial contribution is made by the voluntary sector with many of the local archaeological societies active in terms of fieldwork, and providing a platform for dissemination in the form of lectures and journal publications, notably the Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society. Apart from this journal very few recent academic publications relating specifically to pre-roman Cumbrian archaeology could be located (Evans 2004; Watson & Bradley 2004; Clare 2006; Cherry 2007; Clare 2007). The Northwest Wetlands Survey (Hodgkinson et al. 2000) noted above, undertaken by Oxford Archaeology North, provides a valuable synthesis of lowland coastal archaeology as well as surveys of a number of key wetlands, but is not specific to the prehistoric period. Although Higham’s 1986 publication, The Northern Counties to AD 1000, includes a valuable appraisal of early prehistory in the region, it is thirty years since it was published; the record has expanded and both theoretical and practical approaches have evolved.

The lack of progress in unravelling the archaeological record in the region can be linked to a number of factors, including geography, topography, and politics, and is not a recent phenomenon. In a paper presented to the British Association in 1976 Clare Fell, then the president of the county’s archaeological society, listed a number of reasons for the relative delay in modern research into the prehistory of north-west England. These included the absence of local higher education establishments teaching archaeology, and the abundance of Roman sites which had absorbed the bulk of informed research. She also noted that acid soils, high rainfall, mountainous terrain and “the somewhat superior way in which southerners tend to look on the north as a backward area” all had a negative influence (Fell 1976). The evidence has itself also frustrated attempts to unravel a comprehensive sequence. With little excavation taking place, very few finds have come from secure contexts and surface scatters appear to defy classifications developed in more productive southern parts of Britain. Lithic assemblages include combinations
of tools diagnostic of periods ranging from the Mesolithic to the Early Bronze Age, and distribution maps are skewed by fieldwork bias, and land-use issues. On a more positive note, Cumbria has one of the most comprehensive palynological records in Britain, largely due to the work of Winifred Pennington (1970; 1975), and more recently supplemented by the North West Wetlands Survey (Hodgkinson et al. 2000) and other individuals (e.g. Dumayne-Peaty & Barber 1998; Wimble et al. 2000).

1.3.1 Archaeology and Natural Areas
Both the Natural Areas and Character Areas are strongly related to underlying geological characteristics which influence not only the topography but also the natural vegetation and wildlife, which in turn controlled patterns of land use, settlement and human activity. Accounts of Cumbrian prehistory invariably highlight a split between the eastern and western sides of the central mountains, dividing the county into key regions reflecting the patterns of prehistoric archaeology along with, it could be argued, the patterns of 20th century archaeological activity. Distribution maps of find spots and sites appear to resolve into defined clusters along the Eden Valley to the east, and along the coast and the Furness Peninsula to the south west, with a noticeable absence of activity around the central valleys and uplands. This division, along with direct evidence from artefacts and stylistic comparisons, has led researchers to consider Cumbria chiefly in terms of links with and influences from external groups — across the Pennines to the east (Manby 1965) and across the Irish Sea to the west (Fell 1940; Watson & Bradley 2004). In fact, the clusters of high activity coincide closely with the Eden Valley and West Cumbrian Coastal Plain natural divisions described above, and more detailed understanding of the subtle character of each area may help to reveal local differences which may have had more influence on the distribution patterns observed than did any external factors.

1.4 Thesis Structure

This thesis is divided into three parts: Part I presents a review of current knowledge and recent studies giving context and perspective for the present study; Part II presents a critical appraisal of published data, describes new surveys, discoveries, and recording methodologies, and finally considers the distribution of the final dataset across the county as a whole; Part III takes three of the contextual groupings identified in this analysis and examines each in greater detail.

Part I: The State of the Art: British and Irish rock art in 2007
The first section of the thesis introduces a number of analytical and theoretical approaches which will be applied to the Cumbrian rock art corpus in subsequent chapters. The English Heritage-commissioned Rock Art Pilot Project Report (RAPP 2000) provided a detailed and comprehensive account of the state of English rock art at the turn of the millennium; no attempt is made to reproduce this resource, but instead these chapters provide an update focussing on developments since its publication. The last seven years have seen substantial progress within
both the academic and heritage sectors, with innovations in both fieldwork and theoretical approaches. An already strong amateur involvement has also been boosted by the information-sharing power of the Internet, resulting in a number of significant discoveries.

Chapter 2 presents a picture of British rock art research as it stands in 2007, defining terminology, describing recent discoveries, fieldwork and reviewing methods of measuring, recording and conserving British rock art. Chapter 3 considers a number of current theoretical approaches: key areas of debate are introduced and the British tradition is situated within a wider geographical, cultural and chronological context. Also examined are a number of complementary strands which seek to delve into more human elements of rock art, attempting to understand the motivations, inspirations, and intentions of the creators of the rock art, and the reactions of those who encountered it.

Part II: Changing Pictures: Cumbrian rock art, old and new
In order to ensure that the analysis and interpretation carried out during the project were based upon the most complete and accurate data that could be obtained a number of tasks were carried out. Part II of the thesis describes the various stages of fieldwork undertaken prior to analysis of the final dataset. These include an evaluation of the factors affecting the survival and positive identification of rock art in Cumbria, a critical appraisal of site data available prior to the present project, targeted surveys designed to test models regarding the location of new sites, public involvement, and the verification of new sites reported during the project, and the recording of confirmed new rock art using a variety of techniques.

Chapter 4 begins by considering some basic aspects of rock art research: questions of data reliability and factors affecting the completeness of the archaeological record. Specific questions of identification are explored and the techniques used to capture the motifs are evaluated. The dataset for Cumbria\(^5\) as known prior to the project is then presented, and its historical development over the last century is explored. During the course of the study each panel in this dataset was visited (where possible) and evaluated with the benefit of a twenty-first century perspective. The results of this work are presented and some of the challenges encountered are detailed.

A second phase of fieldwork involved the identification of new sites using a variety of approaches, as described in Chapter 5. Initially, a database of unpublished, potential rock art panels was compiled. Many of these were reported by members of the public, some following direct appeals made at conferences and during presentations to local groups; others were identified from literature sources, web sites, and databases. Potential panels were assessed by site visits where possible. A second approach involved targeted field surveys based on models designed to test the concept that rock art might be found at characteristic locations. These surveys are detailed

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\(^5\) As included on the Sites and Monuments Record in June 2004.
and results and conclusions presented. New panels identified during the course of the research were recorded by a variety of methods and this work is also described.

Finally, Chapter 6 presents the revised dataset for the whole study area, and considers emerging patterns based on contextual differences and spatial distribution in relation to both the physical and archaeological landscape of Cumbria.

Part III: Perspectives and Perceptions: Three themed studies in the Cumbrian landscape
Although 'bird's eye' analysis of rock art panels in the landscape provides a broad indication of possible patterns of activity, in order to gain a more detailed insight into the motivations of the communities who created and lived among the rock art it is necessary to apply the zoom lens and focus on more local and more specific aspects of the rock art sites. In this section, detailed field observations and information from desk-top surveys are analysed using GIS analysis and the theoretical approaches described in Part I to consider three very different groups of sites that had been observed in Chapter 6 to have a number of common elements.

The first considers simple cup-marked outcrops in the landscape. Among the most recent discoveries in Cumbria (three during the course of this research), are four lakeside sites (seven panels) which bear striking similarities: they are all carved on outcropping rocks on low lying ground; they are situated within 1500 m of the shore of a lake; they lie within 50 m of a beck; they are positioned close to the foot of mountain passes leading to the high fells; and the dominant motif at all four sites is the plain cup mark. Chapter 7 explores these common characteristics to determine whether they can reveal anything about the role of these sites in prehistory.

Chapter 8 examines a single, unique site which blurs the boundaries between monumental and landscape art. In November 1999 a new rock art panel was identified at Copt Howe in the central valley of Great Langdale, the main route to the quarries which were the source of the stone used for Group VI axes, exploited throughout the Neolithic period. Following the discovery there was much speculation about the possibility of further carved stones in the valley, but it was not until April 2006 that a second panel was identified. This chapter considers both landscape and stylistic evidence, and in particular examines a possible relationship between the panels and the process of axe production.

The third themed study turns to art in a very different context: the monuments and portable stones of the Eden Valley. This disparate group of panels appears to indicate the use of carved panels in many contexts over a long period, with examples found on Neolithic standing stones, Bronze Age cists and kerb stones, and several portable cobbles. A variety of styles is also represented, suggesting a number of influences. The single common factor linking these examples is their location in the fertile lowlands of the Eden Valley at the eastern edge of Cumbria; the majority are
found along the eastern bank of the River Eden or close to the confluence of the Eden and Lowther, an area rich in prehistoric monuments but with few prehistoric settlement sites.

Chapter 10 returns to the research themes outlined in Section 1.1 of this chapter, reviewing them in the light of the evidence revealed during the project. Research outcomes are synthesised and their implications considered within the wider context of prehistoric archaeology. Potential directions for future work, prompted by discoveries or developments during the project are suggested.

The Inventory
All the rock art panels and ‘marked’ stones (included those determined to be of geological origin) considered during the project were assigned an ID number in the form CUnnnn. Details of each panel are included in a comprehensive inventory in Appendix E.
PART I

The State of the Art:

*British and Irish rock art in 2007*

*Little Meg, Maughanby, Cumbria.*
Chapter 2
Mapping & Measuring British Carvings

Archaeology is the search for fact... not truth.
If it's truth you're looking for, Dr. Tyree's philosophy class is right down the hall.

George Lucas
(Indiana Jones and the Last Crusade, 1989)

The search for information about British rock art must begin with the English Heritage-commissioned Rock Art Pilot Project Report (RAPP 2000), compiled jointly by teams from Bournemouth University School of Conservation Sciences and University College London Institute of Archaeology. This substantial text provides a comprehensive and meticulous review and assessment of English rock art at the turn of the millennium, its only failings being its limited circulation and the fact that it is no longer up-to-date. The following chapter provides an update to the report, with a review of recent discoveries and new methods applied to the mapping and recording of rock art in Britain and Ireland. Firstly, however some introduction is needed to the rock art terminology that will be used throughout this study.

2.1 Defining British rock art

In 1977, independent researcher Ronald Morris first applied the term ‘rock art’ to the growing corpus of British carvings (Morris 1977). Prior to that, they had been variously termed ‘lapidary art’, ‘ring cuttings’, ‘sculptured stones’, ‘circular carvings’, ‘incised markings’, ‘ancient sculpturings’, ‘incised sculpturings’, ‘cup-marked stones’, ‘cup-and-ring carvings’, ‘rock carvings’ and ‘petroglyphs’. Although the word ‘art’ causes discomfort to purists, rock art has become an accepted term, encompassing both carved and painted panels worldwide, and more specifically that body of material defined as “any artificially created mark that is cut, engraved, incised, gouged, ground or pecked into, or applied with paint, wax or other substances onto, the surface of rock” (RAPP 2000: 29). No painted British rock art has so far been identified so the term ‘rock carving’ is generally used to describe British panels, although this implies a technique rarely encountered as the majority of the art is produced by ‘pecking’. An alternative term preferred by some researchers is ‘petroglyph’ (as distinct from ‘pictograph’ which is an image drawn or painted on a rock face). The three terms ‘rock art’, ‘rock carving’ and ‘petroglyph’ are used interchangeably throughout this thesis. The following additional definitions are borrowed from the RAPP report (2000: 29) with refinements:

1The word comes from the Greek words petros meaning ‘stone’ and glyphein meaning ‘to carve’ (it was originally coined in French as pétroglyphe).
Chapter 2: Mapping & Measuring British Carvings

Motifs, Monuments and Mountains

site: the immediate locale of the rock art. This may include more than one rock art panel and may encompass a monument or other archaeological feature.

panel: a spatially delimited rock surface with motifs on it.

element: a distinctive mark that has been artificially created on a rock surface, for example a ‘cup’ or ‘ring’ or ‘spiral’. Several elements may be combined to create a motif.

motif: a combination of elements or a distinctive form such as a ‘cup and ring’, a ‘rosette’ or a ‘key-hole’

We must next enter the territory of rock art classification and explore the various approaches used to divide the panels into categories intended to facilitate discussion.

2.1.1 Contextual divisions

Perhaps the most logical splitting of the dataset is by ‘context’. Prehistoric rock art occurs in Britain in three main situations. The majority of known panels are located on outcrops, earth-fast boulders, cliffs or rock shelters and are described as ‘landscape’ or ‘open-air’ rock art. These examples have the advantage of being in their original location, but tend to have little archaeological context. A second group of carvings are associated with monumental, usually megalithic, structures from different periods, including both ceremonial and mortuary sites from Neolithic stone circles to Bronze Age burial cists. Such art has an obvious context, but the origin of many carved stones and the circumstance in which the carvings were originally applied cannot always be discerned. The remainder of the British rock art corpus comprises surface finds and stones re-located or re-used in modern structures and having no firm original context. These are known as ‘portable’ or ‘mobiliary’ panels, and include fragments, shaped slabs, cobbles, plaques, and, in some schemes, carved stone balls (Hewitt 1991). An additional, unusual context is that of decorated house walls as at Skara Brae, where several of the slabs forming the walls of the Neolithic settlement are incised.

Although these divisions provide a framework for discussion, they are not without issues. The categories are not mutually exclusive, and variations are used by different authors. The term ‘portable’ is generally poorly defined: how large or heavy must a stone be to be assigned to the ‘portable’ category rather than ‘landscape’ art? Similarly, cup-marked ‘cobbles’ may have a ‘monumental’ context within a cairn but are clearly ‘portable’. Further complications arise when issues of origin are explored. The stones may have been re-used several times over their history,

² Although recent excavations have begun to demonstrate otherwise (see Section 2.2.4)
perhaps beginning life on an outcropping rock before being quarried for use in a stone circle or cairn, and finally being used as building material.

2.1.2 Stylistic differences

The overwhelming majority of British rock art motifs from the Neolithic and Bronze Age are non-figurative, abstract designs ranging from the simple cup-marks and grooves to complex combinations of rings, spirals, penannulars, lozenges and chevrons. In contrast to the earlier, Palaeolithic animal carvings, e.g. Creswell Crags (Bahn et al. 2004; Pike et al. 2005) and later, Pictish symbol stones (see Mack 1997), and unlike all other European rock carving traditions, very few British Neolithic or Bronze Age carvings have been identified which are unambiguously representational. Yet they do occur in small numbers and are worth a brief mention.

Representational carvings in Britain

Stonehenge provides the clearest example of representational art in Britain, with axe and dagger motifs (Goskar 2003) and a curious possible box-shaped figure (see Scarre 1997 for a discussion of possible interpretations). A small number of human elements, common elsewhere in Europe, are also known: foot prints (with toes) are found on the Pool Farm cist cover in Dorset (Beckensall 1999: fig. 70), the Calderstones in Liverpool (Forde-Johnston 1957), and on the Cochno stone near Whitehill in Dumbartonshire. ‘Sole’-prints (without toes) occur at Balmacnaughton, Creagantairbh, Dunadd, Murlaganmore and Old Bewick (Beckensall 1999). Hand-prints are also rare, found only at Barrnakill (Lochgilphead) and Kilneuair Church (Ford), both in Argyl-and-Bute (ibid.). Animal figures, which may be deer, are depicted on the wall of a rock overhang at Goatscrag in Northumberland (Burgess 1972) and at Ballochmyle, Ayrshire (Stevenson 1993). The chronological context for many of these representational carvings is unclear. The axes and daggers at Stonehenge clearly belong to a period when metal was worked, and it is also possible that both the animals and the foot and hand prints may also belong to later prehistoric periods.

Figure 2-1: Animal motifs at Goatscrag rock shelter, Northumberland. Photo: S. Forster.

3 The term ‘style’ is used here to refer to the range and nature of the elements and motifs used, and their arrangement on the rock surface. It does not relate to the methods and/or tools used to execute the carving.
Abstract carvings: motifs, composition and ‘style’

The vast majority of British panels comprise abstract motifs, and a number of attempts have been made to categorise these. Beckensall lists the main elements as ‘cups’, ‘cups at the centre of curved grooves’, ‘cups with grooves running from them’, ‘rings, penannulars and arcs’, ‘keyhole patterns’, ‘grooves enclosing multiple cups’ and ‘grooves’ (Figure 2-3). Elements of these are found in all rock art but two groups which have distinctive palettes of motifs and compositions are ‘passage grave’ art (also known as ‘Boyne Valley’ or ‘megalithic’ art), and ‘cup-and-ring’ art (also known as ‘Galician’ or ‘Atlantic’ art) which is found in almost all other contexts.

Passage grave art is found in association with chambered tombs, particularly those of the Boyne Valley (Shee Twohig 1981; O'Kelly 1982; Eogan 1986). It is typified by angular elements including chevrons, triangles and lozenges, but also by complex circular motifs such as spirals and concentric rings. It is found predominantly on flat, vertical surfaces that may have been prepared by diffuse pecking (Eogan & Aboud 1990). The majority of panels are pecked, but some are incised. Several phases have been recognised, with an earlier ‘depictive’ style being replaced by a ‘plastic’ style which incorporates (and is inspired by the natural forms and features of the rock canvas (O'Sullivan 1986). Compositions tend to be extensive, covering all the available surface, and have been argued to embody control over the natural environment, with regular, geometrical and symmetrical patterns predominating.

By contrast, ‘cup-and-ring’ art uses mostly curvilinear motifs, including simple hemispherical cupules, grooves, rings, penannulars, spirals and variations of these. The carvings are found in the
landscape, on outcrops, boulders, cliffs or rock shelters, but several are also associated with monuments such as cairns, stone circles and standing stones. They are predominantly found on horizontal or gently sloping surfaces, and natural features such as curves or fissures may be incorporated into the design. They are generally considered more ‘fluid’ in their design, reflecting natural elements such as water ripples, and they tend to be found in open, ‘public’ positions.

The relationship between ‘passage grave’ and ‘cup-and-ring’ art remains a subject of debate to which I will return but it is worth noting here that although their respective distributions appear discrete, with passage grave art confined to those areas where this particular form of monument is found (the majority are located in Ireland, with some examples in Wales, Anglesey and Orkney), there are many motifs which are found within both traditions.

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*Figure 2-3: Simple elements as categorised by Beckensall (1999: fig. 6.).*

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4 With the exception of cist slabs which may represent a later re-use of open-air art.
Chapter 2: Mapping & Measuring British Carvings

Motifs, Monuments and Mountains

Figure 2-4: Fluid curvilinear cup-and-ring art in an open location at Lordenshaw, Northumberland.

Figure 2-5: Megalithic art. Internal panels at Barcudia-y-Gawres, Anglesey (left) and Loughcrew, Ireland (right). Photos: A. Stanford (Anglesey) and P. Deakin (Ireland).
2.1.3 Tools and execution

A further method of categorising rock art is by the method and/or tools employed in its production. The majority of British carvings are created by pecking the rock surface using a stone tool. Peck marks may remain visible on panels which have been protected from the elements (the majority are weathered) and vary in size from less than 1 mm up to 4 mm in diameter. This contrasts with engraved or 'graphitic' art where motifs are incised or 'scratched' onto the rock surface. This method was used extensively on Orkney to decorate passage graves at Quoyness, Cuween (Bradley 1998a) and Maes Howe (Ashmore 1986) and houses at Skara Brae (Shepherd 2000). Examples are also found in Irish passage graves.

![Figure 2-6: Peck marks visible on well-preserved motif from Fylingdales Moor, North Yorkshire.](image1)

![Figure 2-7: Pecked areas at Knowth. Photos: P. Deakin.](image2)
Chapter 2: Mapping & Measuring British Carvings

Motifs, Monuments and Mountains

2.1.5 Geography

The most commonly used categorisation of British rock art found in the literature is that of geographical location. This is partly a legacy of the antiquarians who documented their local areas, but also reflects the ‘clustered’ nature of rock art across Britain, with a number of hot spots evident. There is no national database of rock art panels, nor have any analyses been carried out on the entire corpus. Regional datasets make up the majority of the record, with varying levels of detail and different emphasis applied by individual researchers. This aspect is now considered further with a review of the current picture of British rock art, and some of the most recent discoveries.

2.2 Mapping British rock art

Rock art research in Britain is a recent addition to the academic agenda, having been the domain of antiquarians and independent amateurs for the larger part of the nineteenth and twentieth centuries. As a result, information can be difficult to access; catalogues vary greatly in coverage, scope and detail, and few are available electronically. With no central repository, rock art researchers wishing to see the ‘bigger picture’ are faced with a diverse array of sources to be compiled and reconciled. Despite these difficulties the RAPP report succeeded in presenting a comprehensive overview of the evidence to date: the extent, and distribution of known panels with respect to topography, geology and natural features; the range of styles, motifs, and contexts, and the known chronology. This information is not reproduced here; however, a brief overview of the development of rock art discovery in Britain is included to provide a context for the main discussion, which focuses on developments that post-date the report.

2.2.1 The British Rock Art Corpus

During the nineteenth century, hundreds of carved panels scattered across the British landscape were expertly documented by Victorian antiquaries such as Simpson (1865), Tate (1865), Bruce (1869) and others, yet these mysterious symbols failed to ignite the curiosity of the emerging professional archaeological fraternity. Perhaps the distribution of panels in predominantly inaccessible northern regions, and a southern-centric society were partly to blame, but the association of rock art with more ‘fringe’ elements of research (archaeoastronomy suffered a similar fate until recently), and the absence of secure context and dating evidence may also have contributed to its lack of appeal as a research topic. In the second half of the nineteenth century, archaeology responded to the new positivist philosophy: philology was displaced by the geological principles of stratigraphy, and by biological and cultural evolutionism; rock art remained marginalised in a discipline increasingly focussed on excavation. The resulting disinterest within research institutions continued throughout most of the twentieth century, leaving the field open to a series of skilled amateurs and semi-professionals who devoted countless hours to the locating and recording of thousands of carved panels

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5 This strong tradition of amateur involvement continues today and played a key part in this study as will become apparent in later chapters.
across the north of Britain. Independent researchers like Ronald Morris (Scotland), Stan Beckensall (north-east England), Tim Laurie (Swaledale), Maarten Van Hoek (Scotland and Ireland), the Ilkley Archaeology Group (West Yorkshire) and Paul Brown and Graeme Chappell (North York Moors) developed recording methods and produced the gazetteers which now form the basis of the rock art record for Britain. Along with these gazetteers numerous short papers were published describing individual panels or sites, many appearing in the pages of local journals (e.g. Allen 1882; Lamb 1897; Ferguson 1910). The RAPP project reviewed a large number of these sources and also consulted Local Authority Sites and Monuments Records, before presenting a series of observations (2000; ch. 3-5). In summary, they found that:

- Rock art is widely scattered across the British Isles, although there are marked concentrations such as in West Yorkshire, Northumberland and Galloway.
- It is estimated that there are 1600 rock art panels in England; the most widely represented motif is the cup-mark.
- It is believed that most British rock art dates to the period 4000 - 1500 BC.

(RAPP 2000: 9)

The report also highlighted the need to “validate, consolidate and re-cast information” from the many disparate sources. Since 2000, a number of developments have taken place: many new panels have been identified and recorded, several new papers have been published (both gazetteers and site reports) and electronic resources have greatly enhanced the availability of the information. A follow-up initiative to RAPP, the Northumberland and Durham Rock Art Project (NDRAP), has begun to address some of the data management issues, mobilising volunteers to comprehensively record panels for a pilot database, which may one day be extended to provide national coverage.

2.2.2 New discoveries
Several important discoveries in recent years amply demonstrate that there are many carved panels still to be identified which may dramatically alter perceptions of rock art and its role within British prehistoric society.

Fylingdales Moor, North Yorkshire
Some of the most significant discoveries in recent years occurred as a result of an event which had both positive and negative impacts on the rock art record. On 17th September 2003, an intense fire swept across 2.5 km² of Fylingdales Moor in North Yorkshire, taking several days to bring under control. The fire stripped the landscape, revealing a wealth of archaeological features, including many new rock art panels (Figure 2-10). However, as the devastating fire burnt away the turf to reveal the carved stones it also caused serious damage to them, destroying surfaces and making them brittle, fragile, and vulnerable to water and frost. Subsequent recording, management and re-vegetation operations were undertaken during a major multi-partnership project involving the National Park Authority, Fylingdales Estate, the Court Leet, English Heritage, English Nature, specialist consultants and DEFRA. Local rock art experts and enthusiasts were already aware of approximately 120 rock
art panels on the moor; the fire revealed a further 80, bringing the total to around 200 – a 66% increase. There are now around 490 panels recorded for wider area of the North Yorkshire Moors (Brown & Chappell 2005) – a substantial increase on the NMR figures before the fire in 2000 which listed only 209 for North Yorkshire and 17 for Cleveland (RAPP: Table 5.4), or the 59 records listed by the North York Moors National Park (ibid.; Table 5.3). A particularly important discovery was a stone slab decorated in the ‘passage grave’ style, in a monumental setting which has since been partially excavated. The carving was described as ‘fresh’ with clear peck-marks suggesting that it had not been exposed to weathering for a lengthy period. Only 10% of the monument was examined, but this showed the decorated stone (1.0 x 0.8 x 0.2 m) to be one of several kerbstones set in a retaining gully. A second kerbstone had a much simpler cup-and-groove design, more akin to the panels on the moor. The area immediately in front of the stone slabs was filled with cobbles, including twelve with cup-marks. No material which would date the monument was recovered. The design on the geometrically decorated slab prompted much discussion, and has been likened to a map or landscape, the lozenges representing mountains. There has also been speculation that the stone was removed (during prehistory) from its original context and re-fashioned to fit its present position, yet close examination of the pattern suggests it was designed to fit the contours of the slab and was never truncated. Perhaps more significant is the close proximity of the ‘passage grave’ and ‘cup-and-ring’ styles of decoration in the same monumental context, raising questions about the relationship of these two traditions. No report on the excavation (carried out by Tees Valley Archaeology) and its findings has yet been published, but a detailed description of the marked stones is provided by Brown and Chappell (2005: 64-68, figs. 43-45).

Figure 2-8: Fylingdales Moor, July 2003: two months before the fire.

6 The monument was controversially re-buried following the partial excavation, and its location withheld.
Figure 2-9: Rock art panel on Fylingdales Moor, July 2003.

Figure 2-10: Devastation on Fylingdales Moor shortly after the fire, March 2004.
Figure 2-11: Kerbed cairn showing contrast between ‘passage-grave’ and ‘cup-and-ring’ panels, and their proximity within the monument. Photos: G. Parry.
Creswell and Cheddar

Although discoveries at Creswell Crags and at Aveline's Hole are dated much earlier than the period with which this study is concerned and no element of continuity is implied, they are nonetheless significant in that they begin to fill major gaps in the story of British rock art. The Palaeolithic art found in 2003 in caves at Creswell, Derbyshire, (Bahn et al. 2004) is the earliest known example in Britain, now assigned a minimum date of 10,800 BC based on uranium-series disequilibrium dating of flowstones, which is consistent with radiocarbon dates for the Late Upper Palaeolithic occupation of the caves (Pike et al. 2005). The art is representational with key figures including a bison, and an ibex (Figure 2-12). Also in 2003, more cave art was identified at Aveline's Hole, Burrington Coombe in North Somerset. This time the carvings were abstract hatchings, dated both stylistically and from their archaeological context to the Mesolithic period (Mullan & Wilson 2004).

2.2.3 Surveys, gazetteers and databases

The Yorkshire fire presented a unique opportunity for a detailed survey, which combined the resources of heritage bodies and local amateurs. Although other areas have received less intense scrutiny, new gazetteers have been published which both compile existing data and add new records for Wales (Darvill & Wainwright 2003), Cumbria (Beckensall 2002), West Yorkshire (Boughey & Vickerman 2003), and the Isle of Man (Darvill & O'Connor 2005). In Strathclyde a field survey commissioned by the RCAHMS identified 121 carved rocks in an area of 68 km² on the slopes above the northern shore of Loch Tay where previously only twenty-one were recorded (Hale 2003). In Northumberland and Durham, work carried out by trained volunteers has demonstrated that the previously existing dataset was both inaccurate and incomplete: some 'carvings' have been determined to be geological in origin and many new panels have been added to the dataset (see for example Figure 2-13). These new finds were chance discoveries identified during field visits to record known sites, and not as a result of targeted surveys, so many more panels may await discovery. Clearly, significant finds are still to be made and the record is far from complete.
Along with the larger scale surveys and gazetteers, many new individual panels have been reported, often in local journals. These include examples from Devon (Waterhouse 2000), Derbyshire (Makepeace 2001), Ireland (Bayley & Roycroft 2003), Cumbria (Clare & Clarke 2004), and Inverness (Dutton & Clapperton 2005), and two major new sites in Cumbria, at Patterdale (Cook 1999) and Copt Howe (Brown & Brown 1999), discussed at length in Chapters 7 and 8 respectively. Although these publications tend to be obscure, panels reported to the relevant county council archaeology department or National Park Authority should eventually appear on Sites and Monuments Records (SMR) or Historical Environment Records (HER). Several such databases can now be searched online, greatly improving the accessibility of rock art records, although the lack of consistency between datasets for different regions makes comparison problematic. A number of sources can be searched simultaneously via the Archaeology Data Service web site (web ref #4), although the lack of controlled terminology or a thesaurus-linked search engine makes it difficult to obtain meaningful statistics: rock art is variously described as ‘cup-marked stone’, ‘cup and ring mark’, ‘carved stone’, ‘rock carving’ and several other combinations. The site allows searching across databases for a number of regions where rock art is present, including the SMRs for County Durham, Northumberland, Northern Ireland, the West of Scotland, as well as the National Trust SMR and Yorkshire Dales National Park HER, and the RCAHMS Canmore database.

January 2005 saw the launch of The Beckensall Archive website (web ref #5), developed at Newcastle University and designed to provide access to data on 1069 panels in Northumberland, supported by 6000 images. The site proved a great success, attracting over two million hits in the first few days.

7 The ADS search interface allows only three terms to be combined and there is no facility for more complex Boolean search expressions.  
8 The Cumbria SMR and Lake District National Park HER are not yet available via the Internet although a project with this aim has been underway for some time.
By October 2005, this had grown to over five million, with more than 60,000 individual visits to the website, and an average of twenty pages viewed per visit. This clearly demonstrates the huge public appetite for rock art; the majority of new sites are still identified by enthusiastic amateurs who now often report their finds and discuss their observations on popular websites such as Rock Art in the British Landscape (web ref #6), The Modern Antiquarian (web ref #1) and The Megalithic Portal (web ref #7). Web sites such as these have played a large part in the informal location and recording of new panels, linking a network of geographically dispersed amateurs, facilitating the sharing of information, images and ideas, and promoting discussion. Many of those who actively contribute to the sites have a detailed knowledge of their local landscape and its history, and have developed a keen instinct for seeking out new rock art. Their contribution should not be overlooked or underestimated.

Latest Figures

The RAPP report estimated that 1600 panels were known in England (2000: 9). Today, based on figures from the new gazetteers mentioned above, the figure is closer to 2500. When added to current estimates for Scotland, Ireland and Wales this makes a grand total of around 5500 panels (Table 2-1), although this is likely to be a gross underestimate as many of the sources list ‘sites’ which may comprise several individual panels.

Table 2-1: Estimated numbers of rock art panels in Britain, Nov 2006.

<table>
<thead>
<tr>
<th>Country</th>
<th>Estimated number of rock art panels known in Britain in 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>2500</td>
</tr>
<tr>
<td>Wales</td>
<td>50</td>
</tr>
<tr>
<td>Scotland</td>
<td>1950</td>
</tr>
<tr>
<td>Ireland</td>
<td>1000</td>
</tr>
<tr>
<td>Total</td>
<td>5500</td>
</tr>
</tbody>
</table>

2.2.4 Investigative Fieldwork

Until recently, excavations involving rock art tended to be at sites where previously unknown carved stones were revealed by chance, such as the Dalladies long barrow (Piggott 1974), and the Fulforth Farm cist near Durham (Beckensall 1999: 136-137). A small number of monumental rock art sites have also been excavated, for example the Tortie Stone (Richardson 1992) and the Goggleby Stone (Clare 1978), both standing stones in Cumbria, but excavations of landscape rock art are less common. An investigation of the relationship between the Fowberry cairn and nearby outcrop panels on Weetwood Moor, Northumberland yielded several new ‘open-air’ panels and small portable

9 The site has since won a British Archaeology Award for the best ITC site (Beckensall pers. comm., Nov 8 2006).
Chapter 2: Mapping & Measuring British Carvings

Motifs, Monuments and Mountains

stones, but the only other find was a scraper in the deposit between the cairn and the outcrop (Beckensall 1999: 142-144). A similar investigation sought to determine the relationship between three carved panels situated within an enclosure at Backstone Beck, Ilkley Moor, West Yorkshire and nearby artefact scatters (Edwards & Bradley 1999: 76). A fourth panel was discovered, and two distributions of grooved ware and worked flint were identified close to the carved boulders, as were areas of heat-affected soil. Charcoal radiocarbon dated to between 2900 and 2600 BC was found underneath an undecorated boulder in the enclosure. At Gardom’s Edge, Derbyshire, an extended exploration of the area surrounding three carved boulders revealed two stake holes, a polished shale ring, and some chert and flint flakes (web ref #8).

In the last five years several more excavations have taken place at landscape rock art sites, with significant results. In Ireland, a pioneering project used Ground Penetrating Radar to survey areas around rock art at Drumhirril, Co. Monaghan (O’Connor 2003). This revealed a number of features prompting excavation around the panels and resulting in the discovery of material dating from the Early Neolithic to the Early Bronze Age, plus structural features and samples for radiocarbon analysis. A similar project is currently underway, comparing Irish and Scottish rock art: excavations at Torbhlaren (Kilmartin) revealed that one of the massive carved outcrops was surrounded by a stone platform, with an associated stake hole structure and an extensive worked quartz assemblage (Jones 2006: 219). Excavation of large fissures in the outcrops also yielded lithic material and new motifs.

Excavation also provided new insight at Hunterheugh Crag in Northumberland (Waddington et al. 2005). Here, two chronologically discrete phases of carving on outcropping rock, separated by an episode of quarrying, were overlaid by an Early Bronze Age cist and cairn. The Phase 1 carvings, added prior to the quarrying, were significantly more weathered than those of Phase 2, some of which were applied to the freshly quarried surface. However, the fact that some of the Phase 2 carvings were themselves badly weathered suggests that a substantial period elapsed before they were protected by the building of the cairn, which in turn provides a terminus post quem for both phases of carving, and demonstrates a clear Neolithic origin for the tradition. These subtle variations in depth, style and position of motifs can clearly provide valuable clues to the biography of the site, demonstrating the importance of detailed and accurate recordings. The next section reviews both traditional and current methods and technologies and discusses some of the issues arising, including preservation and presentation.

2.3 Recording strategies and techniques

Until very recently, the way in which rock art was recorded had changed little since antiquarians first became interested in these ‘curious marks’ in the 19th century. The focus was primarily on the motifs, which were represented with varying degrees of accuracy through drawings and wax rubbings, later supplemented with photographs. Little information was collected regarding the rock surface, the
nature of the outcrop or boulder, and rarely was the situation of the panel in its surroundings considered. With a few exceptions, motifs were drawn as black marks on a white background, emphasising this separation between the human-made carvings and the natural (and therefore 'unimportant') background. Motifs were analysed based on their size, shape and relationships with each other, with little regard for similarities in the selection of panels or their place within the wider archaeological landscape. The work of Morris is a notable exception, his observations relating to elevation, inclination, and direction of slope for Scottish rock art panels demonstrating an approach that has only recently been applied elsewhere in Britain.

In the last decade the new emphasis on landscape studies and the phenomenological approaches permeating archaeological research have led to the recognition that it is no longer sufficient to record only the motifs present on rock art panels. Current rock art studies are concerned with understanding the relationship between the rock art and its surroundings, with the motivations and intentions of the carvers, and with the changing role of rock art within dynamic, evolving landscapes. Records must therefore document in detail the nature of the rock surface or 'canvas', the boulder or outcrop, its context and immediate locale. Developments in GPS technology together with the availability of sophisticated GIS software have provided the tools to carry out rapid and accurate spatial and topographical analyses but the recording of the panel and its motifs still requires painstaking work in the field. No recommended recording strategy or methodology is currently available for British carvings, and information is generally captured using a combination of graphical/visual records (including 3D and 2D) and textual/numerical documentation (including measurements and observations). The result, as already noted, is a diverse assortment of incompatible databases, difficult to access and impossible to compare. The Northumberland and Durham Rock Art Project (NDRAP), has begun to address some of the data management issues, recording panels to a common standard and developing recommendations.

In addition to changes in the nature of the information recorded, the last few years has seen a flurry of publications relating to the tools and techniques used to produce graphic representations of the carvings themselves with much work carried out in relation to British examples. These include methods which create a 3D representation of the carved surface such as laser scanning (Eklund & Fowles 2003; Simpson et al. 2004; Diaz-Andreu et al. 2005; Trinks et al. 2005) and photogrammetry (Bryan 2004). The sub-millimetre precision of the laser scan models allows fine analysis of motifs, and has been used to identify superimposition, and to detect tool marks, with some interesting results. At Stonehenge many previously unknown carvings were identified (Goskar 2003) whereas at Castlerigg stone circle, a spiral feature once captured in a photograph remained undetected by the laser (Diaz-Andreu et al. 2006). The ability of laser scanners to reproduce fine detail has also been applied to the long term monitoring of rock art panels, with models compared to detect surface weathering (Barnett et al. 2005).
The RAPP Report (2000) describes a variety of recording techniques and approaches for documenting and managing rock art and it is not the intention to cover the same ground here. Rather, this section highlights some of the factors governing the process of rock art recording from the planning stage through the collection and processing of data, through to the digitisation and sharing of the resulting information. An understanding of these elements and their historical basis was vital in determining the recording strategies used for the present project.

2.3.1 The planning stage: fitness for purpose

The development of an appropriate recording strategy requires an understanding of both the ultimate purpose of the recording and the nature of the panel to be documented, the available resources (budget/equipment/expertise/time) also being an important factor. The first of these is perhaps the most critical and the most often overlooked. For example the aim may be to:

- document the extent of imagery present in a preliminary survey
- form a record in a digital database
- produce a figure for publication or for a heritage display
- carry out stylistic comparisons with other panels
- undertake a detailed analysis of motifs and/or tool marks, e.g. to detect superimposition of motifs
- compare specific characteristics with other panels, for example within a database
- carry out geographical analyses, for example using GIS software
- assess risk to the panel and inform management decisions
- monitor deterioration of the surface
- provide a record for archival purposes, and thus preserve the panel for the future

These objectives need not be mutually exclusive but some clearly require a more detailed approach; an initial broad-based survey may be followed by more specific recording once a number of general factors are assessed.

The nature of the panel itself is also an important consideration in choosing a recording method. Some techniques are more suitable for specific types of petroglyphs, or for specific surfaces. For example, a flat, horizontal surface may suit a technique which would not work well on a rounded boulder or vertical panel. The extent of the panel, its orientation and accessibility must each be taken into account for similar reasons: remote, inaccessible locations may preclude the use of techniques requiring bulky or heavy equipment (for example generators). More extensive panels take longer to record, and produce larger data files if high resolution techniques are applied, and this may be a consideration where costs include time or where data processing is an issue.

Before any high tech equipment is deployed a number of important records must be made: in order to carry out comparisons or conduct a statistical analysis, information about panels must be in a form that is comparable, and searchable. This is where text-based recording is critical and where
compatibility between records is crucial in order to create a useful dataset which can be shared and interrogated.

2.3.2 Text-based observational recording and measuring: the Recording Form

The Recording Form is the basis of any rock art recording, and of any subsequent database and compatibility with other systems is a key consideration. A major challenge is the lack of a common terminology: there have been various attempts to achieve a degree of standardisation in rock art terminology but with little success (Bednarik 1991:116-118). The RAPP proposals included thirty-eight controlled vocabulary 'look-up' tables for fields including archaeological period, county, panel type and motif class (RAPP 2000: 171-176). Similarly, lack of a formal hierarchical typography for the classification of motifs makes indexing at this level subjective and statistical analysis problematic. In Scandinavia some steps have been taken to standardise documentation (Magnusson et al. 2001) and there is a standard Rock Art Record file used by UNESCO, ICOM and ICOMOS.

The majority of rock art sites in Britain have not been documented in a controlled way but the recording form used for the NDRA Project may provide a prototype for a national recording standard. The form was designed to be used in the field by non-specialists with minimum equipment. It includes a number of tick-box fields to provide consistency, some hierarchical question structures to aid analysis, and space for drawings and free observations. The form covers aspects including the nature of the motifs, the geology of the rock, the dimensions, aspect, elevation and orientation of the panel, the position of the site within the landscape, and its relationship to both natural and artificial features. Space is also provided for a sketch of the horizon for 360 degrees around the site, a scale drawing of the panel, and a sketch map of the location. Motifs present are recorded by selecting from a number of graphical representations. A substantial part of the form allows an assessment of the condition of the panel and risks from natural and human sources, and it is intended that this will inform future management strategies.

2.3.3 Graphical representations

Current graphical records of rock art can be divided into those which are two-dimensional (plans or sketches) and those which are three-dimensional (either real or virtual models). Whatever the result, there are generally two stages in the creation of graphical records: capture of 'raw data' in the field and then data-processing using computer software. Techniques of data capture can be divided into those which involve contact with the surface and those which do not.

<table>
<thead>
<tr>
<th>Final representation</th>
<th>Contact methods</th>
<th>Non-contact methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>2D plan</td>
<td>Rubbing, tracing</td>
<td>Scale drawing, photography</td>
</tr>
<tr>
<td>3D model</td>
<td>Plaster cast</td>
<td>Photogrammetry, laser scanning</td>
</tr>
</tbody>
</table>
The majority of British rock art has been recorded by traditional, contact methods such as rubbing and tracing, producing 2D results. New techniques such as photogrammetry and laser scanning can reduce or even eliminate the subjectivity of these approaches, whilst also removing the need for any harmful contact with the rock surface. The high resolution 3D models produced are clearly more accurate representations of curved surfaces than 2D plans (see for example Eklund & Fowles 2003; Goskar 2003; Barnett et al. 2005; Trinks et al. 2005), however laser scanning remains an expensive option, requiring expertise both in the field and in processing the large data files generated. Although sub-millimetre resolution and the ability to manipulate a 3D model may be valuable for some purposes (for example the monitoring of surface deterioration or the detection of superimposition) it is perhaps not necessary to record all carved panels to this degree. The traditional methods are more accessible and provide an adequate record of the carvings for most purposes. The technique of photogrammetry (Chandler et al. 2005) may offer a good compromise, avoiding contact and subjective interpretation, and producing a 3D surface, at relatively low cost: images can be captured using inexpensive digital cameras and, although currently costly, processing software is becoming more available.

Figure 2-14: Recording pathways.
To clean or not to clean?
The question of whether carved panels should be 'cleaned' prior to recording is still debated amongst rock art recorders and heritage bodies, and practices differ around the world. Where turf or other vegetation obscures additional motifs, it is tempting to remove the covering to determine the full extent of the carving. This may have serious consequences for the preservation of the newly exposed carvings by dramatically altering the conditions at the rock surface, and is not recommended by English Heritage (T. Barnett, pers. comm. 2005). Where 'fresh' carvings have been exposed in the past the difference in weathering is very apparent (Figure 2-15). Although exposure can control condensation, plants may provide protection from precipitation, and improving ventilation may increase evaporation and salt deposition (Rosenfeld 1988: 54). The entire dynamics of the site must therefore be assessed before any measures are implemented. The worst scenario is that of repeated cycles of cover followed by exposure. Lambert recommends that previously uncovered engravings should be kept clear of encroaching vegetation whereas those covered for long periods should be left covered or, if exposed consolidated in some way (1989: 18-22). Where encroaching mosses and soil cover are removed an archaeological assessment should be made to determine whether the site has sub-surface cultural deposits. Consideration should also be given to providing drainage to prevent a repetition of the soil build-up.

![Figure 2-15: Ketley Crag, Northumberland showing contrast between weathered motifs to the rear and recently exposed motifs in the foreground.](image)

Motifs are often obscured by lichens which penetrate surface pores to extract minerals and secrete damaging oxalic acid. Removal of lichen is strongly recommended by some experts although others believe it may be a useful agent in the quest for dating evidence (Childers 1994; Tratebas & Chapman 1996; Coles 2001). Whether to remove lichens or not may also depend upon the species and the state and composition of the rock substrate. The least invasive cleaning technique is dry brushing with monitoring to observe any re-colonisation. Use of commercial fungicides to eliminate lichens and
other biological agents is not generally recommended\textsuperscript{10} as such materials are ecologically harmful, may themselves cause staining, and secondary effects on the chemistry of surface layers and subsequent dating methods is not clear (Bednarik 1995; Walderhaug & Walderhaug 1998; Loendorf 2001). Generally, most lichen removal undertaken currently is either carried out manually, (excluding brushing) or by applying dilute chemical solutions to promote dehydration (Loendorf et al. 1998). In Valcamonica in northern Italy for example, new panels are cleared manually of vegetation, then moss and lichen removed using twigs. The panel is then ‘washed’ using water and soft brushes to remove any loose dirt.

**Traditional ‘contact’ methods**

‘Rubbing’ and ‘tracing’ have been used for many years, and are the basis of many previous studies and archives, although both involve contact with the rock surface and are therefore not encouraged by Heritage bodies. The use of carbon-containing materials also has implications for the C14 dating potential of the surface. Both methods are subjective and the most experienced rock art researcher may interpret features in different ways on separate occasions. Difficulties in securing the paper/plastic over rounded surfaces can add to the problem, potentially distorting the panel shape. Both methods capture only a single ‘horizon’ of carving so are effective on large flat rock surfaces but less suitable for more irregular, curved surfaces where the conversion of a 2D recording to a 3D sketch can be challenging. On the plus side, both methods are cheap, quick, and ensure that the entire rock surface is recorded, including natural fissures and textures. Neither method requires extensive training. The results are adequate for illustrative purposes and may be sufficient to document the extent of imagery present in a preliminary survey or provide a basis for further management decisions, but may not be sufficient for detailed analysis of motifs, tool marks, or for monitoring weathering. Both methods result in large volumes of raw data\textsuperscript{11} which is difficult to store, manage and to manipulate, although the plastic sheets used for tracing are much more robust than the newsprint used for rubbings. In order to create images suitable for publication the primary recordings must be further processed, using photography or with scaled drawings. Neither rubbing nor tracing is sufficient in itself for archival, research, or conservation purposes and both are usually supplemented by photography.

**Rubbing**

There are two methods of rubbing used in rock art recording: the Tanum method (used in Scandinavia) and the Wax Crayon method (used in the UK). In the first of these a soft sponge wrapped in carbon paper is rubbed over the sheets of paper (110 gm) placed over the carving; grass is then rubbed across the surface to ‘fix’ the carbon (Magnusson et al. 2001: 33-46). A different method is favoured by Beckensall and has been heavily used in recording rock art in the UK. It is accomplished by securing a piece of newsprint over the rock and then using fingertips to feel the

\textsuperscript{10} Rosenfeld (1985) argues that all lichens should be removed using harsh methods such as wire brushes and biocides!

\textsuperscript{11} The Vitlycke carving at Tanum required 220 sheets were used, totalling 200 m\textsuperscript{2} of paper.
outlines of features on the surface before marking these with a wax crayon. The crayon is then used to rub over the surface of the rock, capturing texture and natural features. The resulting recording is used (along with photographs and direct observation) as the basis for scale drawings suitable for publication.

Figure 2-16: Rubbing method at Tanum (Magnusson et al. 2001)

Figure 2-17: The wax rubbing method demonstrated in the field by Beckensall with resulting drawing by the author.
Tracing

Tracing is the preferred method of recording rock art at Valcamonica in the Italian Alps. Transparent film is secured over the panel using a low-tack tape and the underlying images are either outlined or individual peck marks captured. Natural features such as cracks and lichen may be traced in a different colour. The completed tracings are re-drafted in the lab onto a clean sheet and these in turn drawn at a smaller scale in order to create illustrations for publication, or simply more manageable and accessible records. Depending on the specific techniques used and the size and complexity of the panel, it may take several days to trace a panel. This can be physically demanding, involving holding uncomfortable positions for long periods of time, and causing eye strain. However tracing can be very useful in situations where conventional photographs do not show faint details, as the close proximity of the recorder to the panel allows for detailed examination.

Non-contact methods

Although relatively inexpensive, simple and convenient, the methods described above have many disadvantages, being very subjective and potentially damaging or contaminating the rock surface. There are a number of non-contact alternatives, ranging from scaled drawing in the field to laser-scanning, each with particular strengths and weaknesses. The RCHMS employ skilled artists to produce finely detailed illustrations, each taking many hours to complete. Scaled drawings may also be used to produce plan-views, particularly useful for flat panels. 2D representations are sufficient for flat surfaces but are less appropriate for more awkward, bulky forms. New techniques such as photogrammetry and laser scanning can produce 3D models which are clearly more accurate representations of curved surfaces. In addition, they reduce or even eliminate the subjectivity of
traditional approaches, whilst also removing the need for any harmful contact with the rock surface. The ability to manipulate a virtual model may also be valuable for the monitoring of surface deterioration or the detection of superimposition. However for the present, laser scanning remains an expensive option, requiring expertise both in the field and in processing the vast datasets generated. Developments in the use of photogrammetry, which no longer requires expensive cameras, may be a middle way, especially as processing software becomes more widely available and less costly. In addition, the value of simple photography should not be overlooked; photographs of the motifs, panel and surroundings form a key part of the rock art record which can be easily obtained with little specialist knowledge.

Scaled drawing
Drawing may be undertaken directly in the field, but may also be used to convert recordings obtained by rubbing or tracing into more useable illustrations. A scale or set of reference points is first established against which the imagery is measured. This may be a grid constructed of strings spaced an equal distance apart on a frame, or a tape measure stretched across a panel. A simple line level is used to create a level reference grid. The locations of different points on an element are then measured relative to the grid, and plotted on graph paper at the appropriate scale. In order to provide a consistent reference, the grid must be level and secure. It should not touch the panel itself, and the means used to secure it should not damage the rock surface or any adjacent panels.

No matter how skilled the recorder, drawing is an inherently subjective process. Changing light, viewing angle, visual acuity, the height of the recorder, and even an individual’s ability to recognize particular shapes can influence what is recorded. Any drawing is also distorted in the translation of a 3D object into a 2D representation. Information about the relative depth of pecked engravings, superimposition, colour changes, and the distance between elements can be lost. Additionally, it can be difficult to reproduce a sense of perspective. It can also be time consuming, and challenging when weather conditions are not favourable.

There is currently no generally agreed standard for the representation of rock art and a number of different styles have been used. Most use darker shades to indicate depth (for example cups or grooves) although this is not always the case. Independent researcher Paul Brown employs a ‘negative’ image with cups and grooves left white, but captures detail of the surrounding rock surface. Possibly the most detailed (and artistic) are those commissioned by Historic Scotland and used for to record the rock art of the Kilmartin Valley (RCAHMS: 1999).

Photography
Most rock art records are supplemented by photographs which can provide valuable insights which are not apparent from either the recording form or other representations. Photography can be used to capture detail of carvings, the rock or outcrop, its immediate location, or a panoramic view of the landscape surrounding the site. Use of artificial lighting sources applied at an oblique angle can
enhance contrast for shallow motifs. Basic equipment is relatively inexpensive and requires little training however more professional techniques can be used to excellent effect. Maggie and Keith Davison used low angle illumination to produce detailed pictures of rock art in Cumbria, and stereo pairs presented using 'Wobblevision' (web ref #1) to give a 3D effect (K. Davison 2006 pers. comm.). Aron Mazel supplemented the Beckensall Archive (web ref #5) with 'Bubbleword' photographs of the locations of selected rock art sites.

As well as being illustrations in their own right, photographs can be processed using graphic software to create outlines or silhouettes of motifs - perhaps selecting carved areas, or differentiating layers of superimposed motifs (Bednarik & Seshadri 1995; Clogg et al. 2000; David & al 2001). Methods of digital image processing (DIP) are perhaps more suited to painted art than carvings but this technology has also been applied to British carvings with some success (Donnan 1999).

**Photogrammetry**

Photogrammetry is based upon the principal of stereo-photography and can provide an excellent archival record of both 2D and 3D surfaces with very accurate, millimetric data. It is a more accessible alternative to costly laser scanning techniques, and is regularly used by conservators for monitoring work on historic building fabric. The technique has also been used to record a variety of rock art panels worldwide (Bell et al. 1996; Kirsh 1997). The resulting digital models are more accurate and more objective than recordings produced by contact methods and can be manipulated using computer software to create perspective views & animations. A low-technology, low-cost photogrammetry method has been applied to Aboriginal art (Chandler et al. 2005). This approach is currently being developed by the Photogrammetric Unit at English Heritage, and is the method used for by volunteers participating in NDRAP Project. A resolution of 5mm is readily achievable using relatively inexpensive, non-specialist equipment, with minimal operator training. Stereo-photographs are obtained using a standard digital camera, and these are processed using commercially available TopCon PI-3000 Image Surveying Station software.

**Laser Scanning**

There have been a series of successful ventures into documenting and recording rock art using 3D laser scanning, for example at the Upper Palaeolithic rock shelter of Cap Blanc in southwest France (Robson Brown et al. 2001) as part of the RockCare project in Tanum, Sweden (Bertilsson 2001: 23) and, also in Sweden, as part of the INTERREG IIA project (Löfendahl & Magnusson 2001: 51). In Britain, work at Stonehenge has identified previously unknown carvings as occurred recently at Stonehenge (Goskar 2003) and laser scanning has been used to record carvings on Rombald's Moor, West Yorkshire as part of the Rock Art Pilot Project (2000; Eklund & Fowles 2003), on Fylingdales Moor and at Creswell Caves in Derbyshire (Carty In press). The technique has also been used to monitor weathering in the 'Fading Rock Art Landscape Project' (Barnett et al. 2005).
Laser scanning requires very expensive equipment and a high level of skill and experience, and most recording is undertaken by specialist groups operating in the commercial sector, for example Archaeoptics Ltd (web ref #10). The scanner (e.g. the Minolta V1900) operates by emitting a laser light pulse that is reflected from the rock surface. The distance to the reflecting point is then calculated by measuring the travel-time of the light pulse. Laser scanners can record up to 8000 points per sec with an accuracy of less than 1 mm. The entire process may be completed in minutes, although very high resolution scans or large panels may take much longer. For optimal results the lighting must be flat, so scanning is best carried out within a tent or at night. The final result is a highly precise, objectively produced 3D model which can be manipulated in virtual space to allow detailed analysis. Digital light sources can be moved to enhance particular features and cross-sections can be produced, for example across grooves, to allow examination of surface detail. The appearance of the model can also be enhanced by subjecting the dataset to various algorithms to artificially flatten the surface and highlight the carvings (Trinks et al. 2005).

Figure 2-19: Alastair Carty of Archaeoptics Ltd. demonstrates laser scanning at the Copt Howe panel in Cumbria.
Figure 2-20: Laser scanning in progress at Lordenshaw, Northumberland. AHRC funded BTRAR Project.

Figure 2-21: Screen shot of 3D model of cup and ring motif at Chatton Sandyford, Northumberland, NDRA Project.
<table>
<thead>
<tr>
<th>METHOD</th>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONTACT METHODS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wax rubbing/tracing</td>
<td>Cheap, quick and easily taught</td>
<td>Subjective</td>
</tr>
<tr>
<td>Portable</td>
<td>Direct contact with rock; danger of contaminating rock with wax</td>
<td></td>
</tr>
<tr>
<td>Captures texture</td>
<td>Difficult to capture curved, 3D surfaces</td>
<td></td>
</tr>
<tr>
<td>Captures 1:1 representation</td>
<td>Paper gets wet and tears</td>
<td></td>
</tr>
<tr>
<td>Tracing part can capture elements in different planes - e.g. edges of cups</td>
<td>Need to secure paper to rock</td>
<td></td>
</tr>
<tr>
<td>Don’t need good lighting conditions</td>
<td>Needs to be processed into drawing, usually reduced, introducing errors.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Only sense of touch used</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Need to store bulky sheets of paper</td>
<td></td>
</tr>
<tr>
<td>Carbon paper rubbing</td>
<td>Cheap, quick and easily taught</td>
<td>Less subjective than wax rubbing</td>
</tr>
<tr>
<td>Portable</td>
<td>Direct contact with rock; danger of contaminating rock with carbon</td>
<td></td>
</tr>
<tr>
<td>Captures texture</td>
<td>Difficult to capture curved, 3D surfaces</td>
<td></td>
</tr>
<tr>
<td>Captures 1:1 representation</td>
<td>Paper gets wet and tears</td>
<td></td>
</tr>
<tr>
<td>Don’t need good lighting conditions</td>
<td>Need to secure paper to rock</td>
<td></td>
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<tr>
<td></td>
<td>Captures only a plane view</td>
<td></td>
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<tr>
<td></td>
<td>Needs to be processed into drawing, usually reduced, introducing errors.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Need to store bulky sheets of paper</td>
<td></td>
</tr>
<tr>
<td>Tracing</td>
<td>Cheap, quick and easily taught</td>
<td>Less subjective than rubbing - uses both sight and touch.</td>
</tr>
<tr>
<td>Portable</td>
<td>Direct contact with rock</td>
<td></td>
</tr>
<tr>
<td>Captures selective texture</td>
<td>Difficult to capture curved, 3D surfaces</td>
<td></td>
</tr>
<tr>
<td>Captures peck marks</td>
<td>Need to secure plastic to rock</td>
<td></td>
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<tr>
<td>Plastic sheets more durable and easier to store than paper</td>
<td>Danger of contaminating rock with pens</td>
<td></td>
</tr>
<tr>
<td>Plastic more malleable than paper so easier to capture curved surfaces</td>
<td>Needs to be processed into drawing, usually reduced, introducing errors.</td>
<td></td>
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<tr>
<td></td>
<td>Plastic stretches and distorts in heat.</td>
<td></td>
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<tr>
<td></td>
<td>Need good lighting conditions for fine details.</td>
<td></td>
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<tr>
<td><strong>NON-CONTACT METHODS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scale drawing (direct)</td>
<td>Cheap</td>
<td>Needs more training than rubbing or tracing</td>
</tr>
<tr>
<td>Portable</td>
<td>Takes time</td>
<td></td>
</tr>
<tr>
<td>Captures selective texture</td>
<td>Does not usually capture full scale representation</td>
<td></td>
</tr>
<tr>
<td>No contact with rock surface</td>
<td>Difficult to control materials in the field</td>
<td></td>
</tr>
<tr>
<td>Photography</td>
<td>No contact with rock surface</td>
<td>Shadows can distort/enhance features</td>
</tr>
<tr>
<td>Captures surface texture and colour</td>
<td>Need good lighting conditions</td>
<td></td>
</tr>
<tr>
<td>Cheap digital cameras can produce good results</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result is already digital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No storage issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Captures location and rock as well as carvings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photogrammetry</td>
<td>Good resolution and accuracy</td>
<td>Needs some training</td>
</tr>
<tr>
<td>Moderately cheap (software expensive)</td>
<td>Processing takes time (software expensive)</td>
<td></td>
</tr>
<tr>
<td>Completely objective</td>
<td>Needs good lighting conditions</td>
<td></td>
</tr>
<tr>
<td>Creates virtual 3D model which can be manipulated and analysed using computer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very portable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laser scanning</td>
<td>Highest possible resolution, and accuracy (sub mm)</td>
<td>Very expensive</td>
</tr>
<tr>
<td>Completely objective</td>
<td>Requires equipment and expertise</td>
<td></td>
</tr>
<tr>
<td>Creates virtual 3D model which can be manipulated and analysed using computer</td>
<td>Requires processing software</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Produces large quantities of data which need to be stored</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not as portable as photogrammetry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Needs controlled lighting conditions</td>
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</tbody>
</table>
2.3.4 Collating the records: creating a useable resource

The study of rock art has produced a vast body of data at the level of both the site and the individual motifs present. As noted, the majority of the British record has been compiled over many years by the amateur sector, often by individuals using their own personally developed (and often incompatible) recording systems, and the amount and detail of information available varies. This data has traditionally been published in books and journals - a process that often does little to enhance the accessibility of the data disclosed. In the worst cases data languishes in personal 'archives' - effectively redundant. Recently, however, with the help of electronic technology, rock art research has stepped tentatively into the information age; a number of groups both in Britain and around the world, have set about organising their rock art data into electronic knowledge bases. These new resources will facilitate active management of the data, allow interrogation and statistical analysis, and promote sharing and reuse of the information, thus transforming previously static, inaccessible catalogues into extremely useful research tools. Projects have created databases covering a variety of areas, periods and types of information (for example Walt et al. 1997; González Sáinz et al. 1999; Marymor 1999; Swartz Jr. & Hale 2000; Bertilsson 2001; Magnusson et al. 2001) but for British rock art there are few publicly available electronic sources. The Local Authority Sites and Monuments Records and the National Monument Record include some entries for rock art sites however not all of these are electronically available (those in Cumbria are not). The Beckensall Archive (web ref #5) provides access to records for Northumberland, but possibly the most comprehensive public collection of photographs of British rock art is provided by an interactive web site, Rock Art in the British Landscape (web ref #6) where users are encouraged to contribute their own images. The Rock Art Pilot Project highlighted the need for a national database in Britain (2000: 18-22), and the subsequent recording project in Durham and Northumberland has begun to address this, collating and reconciling a number of sources and re-recording each panel using a comprehensive set of techniques and a standardised recording form.

The availability of historical recordings means that several images may be available for a single panel – each interpreted in different ways or using different techniques. Rubbings, sketches and digital images created by enhancing photographs all have an element of subjectivity such that different representations of the same art often arise. These may differ only slightly and it is therefore important that all the available data be included in order to allow future researchers to make their own interpretations, with clear distinctions drawn between 'raw data' and those images that have been digitally enhanced using software applications.
On the shoulders of giants

This chapter began with a basic overview of British rock art: its form, its characteristics, its geographical distribution and its range of contexts. This synthesis was based largely on catalogues and reports published by antiquarians and knowledgeable amateur researchers responsible for the bulk of the current database. Their recording techniques and general approach (with 'collecting' prioritised over interpretation) have been criticised, yet without their enormous contribution the analytical and theoretical studies described in the next chapter would not have been possible. The historical records may need verifying, refining and expanding but they have given academic researchers in the 21st century a head start with the challenges of interpretation. New recording techniques will inevitably provide superior representations of panels, and technology such as GPS now allows more exact pinpointing of sites, but the foundations have been well-laid. Amateur interest continues and heritage projects such as that in Northumberland and Durham have capitalized on this, but it is important that academic researchers also recognise the potential of combining the forces with local parties so that sophisticated technologies and theoretical models can be complemented by local knowledge and commitment.
Chapter 3
Interpreting Rock Art

Theoretical approaches to understanding the role of rock art

*It doesn't matter how beautiful your theory is, it doesn't matter how smart you are. If it doesn't agree with experiment, it's wrong.*

Attributed to Richard Feynman
(American theoretical physicist, 1918-1988)

For many years British rock art was studied from publications of black and white, two-dimensional symbols removed from context, but recent approaches have begun to extend the research area to include the canvas, the earth beneath, and the surrounding environment, attempting to situate the rock art within an inhabited and dynamic landscape. Towards the end of the twentieth century, academic researchers began to recognise the great potential of British rock art as a tool to investigate past society. Stimulated, perhaps, by Bradley’s influential publication *Rock Art and the Prehistory of Atlantic Europe: Signing the Land* (1997), the subject finally began to enter mainstream research, moving beyond the purely descriptive catalogues towards interpretation. Bradley had demonstrated that, despite its apparently capricious character, rock art could be subjected to the same analytical techniques applied to other aspects of archaeology. The following chapter considers current interpretative approaches to British rock art, describes recent methodology, and introduces some of the more contentious issues arising.

Section 3.1 addresses approaches which seek to understand rock art by measuring, comparing and relating specific characteristics such as its position in the landscape (e.g. elevation), the relative complexity of motifs, and its proximity to both natural and archaeological features. The discussion is then widened to review arguments for both geographical and chronological connections, with stylistic and contextual analyses of rock art suggesting possible cultural links. Section 3.2 considers attempts to explore less tangible elements of rock art through phenomenological, psychological, and anthropological approaches which seek to return the human element to rock art studies. Relationships with the landscape are considered and the concept of rock art as an influential ‘agent’ informing and maintaining aspects of identity is explored. As in the previous chapter, the emphasis is on developments since the RAPP report was compiled in the late 1990s.

### 3.1 Contexts and Connections

The integration of British rock art into the mainstream archaeological agenda has been a slow process for reasons explored in Chapter 2, but in the last twenty years a number of studies have begun to replace antiquarian-style recording of motifs in splendid isolation. New approaches have extended the boundaries of the ‘site’ to incorporate the surrounding topography, the soil beneath, and the wider...
archaeological landscape. Associations (if tentative) with other forms of material culture and with regional traditions have begun to place rock art within a more comprehensive social framework. This section reviews a number of approaches which have helped to provide a greater context for British rock art, situating it within a wider setting, geographically, culturally and chronologically, and reintegrating it into the archaeological landscape, beginning with a consideration of the evidence and arguments for dating.

3.1.1 Chronology: contentious issues

A fundamental objective of British and Irish rock art research is the establishment of a firm chronology which would allow the tradition to be properly situated within a wider, European context. Without a detailed chronological sequence, relationships between different rock art styles (e.g. passage grave art and cup-and-ring art) are difficult to define, and regional trends have no time-depth. The biographies of carved panels, which may have been re-deployed in several contexts, cannot be fully established, and connections between rock art and contemporary material culture must remain hypothetical.

The absence of representational art which can be linked to specific periods (e.g. weapons, ploughs, or jewellery), the paucity of contextual evidence, and the apparent lack of stylistic trends has ensured that the chronology of British rock art has been much contested. Early commentators believed the cup-and-ring tradition to be a Bronze Age phenomenon (e.g. Hadingham 1974; Beckensall & Frodsham 1998), but researchers now argue convincingly that it is rooted firmly in the Neolithic (Burgess 1991; Bradley 1997; Waddington 1998; 2005). Simple cup-marks are known from undisputed early fourth millennium BC contexts in Britain, for example in long cairns such as Dalladies dated to 3280 BC (Piggott 1972: 44) and on the capstones of megalithic tombs, e.g. Ratho (Simpson 1867). More complex cup-and-ring landscape art also had Neolithic origins as demonstrated by the Hunterheugh excavation described in 2.2.4 (Waddington et al. 2005). Sites at Greenland, Dumbarton (MacKie & Davis 1989), and Wooler in Northumberland (Bradley 1995) have evidence of multi-period use with carvings added to quarried surfaces, and cairns built over motifs on outcrops at sites such as Hunterheugh and Fowberry Moor also point to an early chronology. Both cup-marks and more complex motifs occur in Neolithic and Bronze Age monuments, although whether these represent a primary context is debateable (for a discussion see Burgess 1991).

The passage grave style is primarily a late fourth and third millennium BC phenomenon and appears to terminate when these monuments are abandoned1. At Newgrange, cup and ring carvings are located on the hidden sides of several stones including those forming the roof of the passage, the back corbel of the entrance lintel and the inner-facing sides of kerbstones. On K17 a carved ring is truncated suggesting it was quarried from an existing decorated surface; Waddington suggests from an outcrop (1998: 31). The monument was constructed circa 3200 BC (O’Kelly 1982: 321) so the incorporation

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1 Engraved art linked to this tradition also has secure Neolithic contexts, e.g. on house walls and tools at Skara Brae (Shepherd 2000) and in the ditch of the causewayed enclosure at Flagstones (Woodward 1988).
of pre-existing carved outcrop suggests that the tradition extended well before this. Similar evidence comes from nearby Knowth (Eogan 1998) where decorated stones appear to have been recycled from an earlier tomb.

The relationship between the passage grave and Atlantic traditions remains unresolved. They have traditionally been viewed as entirely separate (e.g. Burgess 1991), with discrete distributions, and, arguably, a unique context and design grammar. Yet, as noted, there exists a large degree of overlap with passage grave style motifs occurring in both monumental settings, for example at Temple Wood, Kilmartin (Scott 1989), and at Little Meg and Glassonby in Cumbria (Thornley 1902), and in the landscape, as at Achnabrek, Argyll, at Copt Howe in Cumbria, and at Morwick in Northumberland (Beckensall 1999). Bradley (1995: 110) states “I can see no merit in retaining the separate styles suggested by earlier writers. They were formulated on the basis of individual motifs, yet these can be found together on exactly the same carved surfaces”. Jackson (1995) argues for a continuing belief system, pointing to structural links between the compositions in both traditions. The Fylingdales kerbstones described in 2.2.2 also present a dilemma, with both styles present in close proximity within the context of a Bronze Age kerbed cairn. Although this may reflect re-use of one or both carved stones, their inclusion in the same situation, ostensibly performing the same role, implies that they may have more in common than has been supposed. The fact that incised carvings in the passage grave style have also been found in causewayed enclosure ditches, and on house walls, stone plaques and tools suggests that this style was not exclusive to the chambered tombs but had an extended relevance.

Waddington (1998) approaches the issue of chronology by building an essentially ideological, evolutionary framework onto which are mapped the different rock art traditions. He proposes an initial Early Neolithic phase (c. 4000-3200 BC) in which carvings are applied directly to outcropping rock; a second phase (c. 3200-2000 BC) in which this symbolism is re-worked into megalithic constructions; and a third phase (c. 2000-1800 BC) in which the rock art is expropriated. This approach perceives rock art as a dynamic agent within society, its role adapted and modified by successive generations to reflect changing world-views.

To summarise, the cup-and-ring rock art tradition in Britain appears to span the period between 4000 and 1500 BC, with passage grave art occurring between 3500 and 2000 BC. However it is unlikely that British rock art was a uniform phenomenon, and the various practices probably had different life-spans in different regions, with some traditions, and some motifs being more widespread or more persistent than others. Finally, the discoveries at Cheddar and at Creswell now permit an extended timeline to be contemplated, with British rock carving stretching back through the Mesolithic and into the Palaeolithic. A new challenge will be to understand how these earlier traditions relate, if at all, to the emergence of cup-marks and decorated monuments.
Table 3-1: Broad outline of rock art traditions and contexts.

<table>
<thead>
<tr>
<th></th>
<th>Cup-and-ring art</th>
<th>Passage grave art</th>
</tr>
</thead>
<tbody>
<tr>
<td>4000 BC</td>
<td>3000 BC</td>
<td>2000 BC</td>
</tr>
<tr>
<td>Application to chambered tombs and standing stones.</td>
<td></td>
<td>Re-use/application to stone circles, cairns</td>
</tr>
<tr>
<td>Re-use in cists?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.1.2 The wider picture: cultural and geographical connections

One approach to the contextualisation of British rock art has been to seek stylistic similarities and affinities with rock art traditions both within Britain and Ireland and with continental Europe. British petroglyphs are frequently grouped within the broader category of ‘Atlantic rock art’ (see for example Shee Twohig 1981; Bradley 1997), and have also been compared to carvings in Scandinavia and the Swiss/Italian Alps, but do such connections bear scrutiny given the worldwide distribution of very similar art forms and motifs?

Early ideas that specific forms or styles of material remains imply the presence of discrete cultural groups (proposed by Childe and others: the ‘culture-people’ hypothesis) have fallen out of favour; numerous studies have demonstrated major problems with using the distribution of material culture as an indicator of social groups. Zvelebil (1996:155-156) proposes a multidimensional model of culture, which cannot be automatically equated with a “coherent ethnic, economic, social or demographic unit”, and Cummings and Fowler (2004: 4) suggest that a more profitable strategy is to interpret culture as “a practical interaction with and through the material world” with studies unrestricted by presumed ethnic limits. Yet the study of spatial and chronological patterns remains a fundamental method of identifying connections within the prehistoric world and the culture-historical approach does suggest interpretations which match current data. Sheridan (2004: 9) argues that links on three distinct scales have contributed to patterns detected within the British Neolithic record: a commonality of origins; regular and/or sporadic contact between neighbouring communities; and relatively long distance and exclusive connections. These cover the movement of people (through migration, intermarriage, or travel); of objects (either by direct procurement, hand-to-hand exchange or via many people); or practices (by knowledge exchange, or along with people and objects), any one of these potentially accounting for the presence of a particular practice, style of architecture or form of pottery.

Yet Bradley (2007: 86) notes that although, in principle, it should be possible to define the source of contacts through a close comparison of material culture, such attempts have been largely unsuccessful. He suggests this may be because Britain and Ireland would have been accessible from so many different areas of Continental Europe.
Contested origins

The first of Sheridan’s ‘connections’ covers the Mesolithic-Neolithic transition, the exact nature of which remains the subject of debate (see Price 2000). Suffice it to say that around 4000 BC, evidence of a new way of life appears in the archaeological record in Britain, with hunting and foraging displaced by herding and farming, and with the adoption of new funerary practices and new architectural styles. The paucity of evidence for any previous, regular contact between late Mesolithic communities around the Irish Sea or across the Channel coupled with the prior lack of either an earlier monument tradition or the use of pottery, suggest that the changes were initiated by a substantial influx of people and ideas, although this is contested by Stephen Oppenheimer (2006) on genetic grounds. Further, emerging evidence of a Mesolithic monumental pit-building tradition across Britain (see for example Allen & Gardiner 2002; Murray et al. 2006) coupled with the results of genetic and isotopic studies (Bentley et al. 2002) suggest that in central Europe the transition was complex. The ‘Diaspore’ theory recognises several northwards influxes into Britain during the early Neolithic, and Sheridan argues for a continental influence based on stylistic analyses of pottery and burial monuments. This model is hotly contested by others (e.g. Thomas 1991) who hypothesize a more gradual transformation of ideology and practice within the native population.

So did British rock art tradition develop in isolation, or was it stimulated by diffusion of ideas or brought more directly by colonising communities? There is little evidence to suggest where such ideas or people may have originated. The ubiquitous cup-mark appears to have developed in diverse and dispersed cultures across the world lending weight to arguments that these simple designs (and the urge to create them) are somehow hard-wired into the human psyche (see Section 3.3). Macwhite (1946) introduced the term ‘Galician’ to describe the rock art of both British and north-west Spanish landscape, believing the more northern tradition to have originated in Portugal and Spain; Bradley’s 1997 publication addresses the rock art of ‘Atlantic Europe’ firmly linking the traditions of the Iberian Peninsula with the British Isles; and Van Hoek observes that the coastal distribution of rock art may reflect northwards maritime travel-in the currents of the Gulf Stream (Van Hoek 1997: 5). These models are based on coastal distributions and stylistic similarities between motifs. Beyond Ireland the passage grave style has a coastal distribution, and in western Scotland much of the cup-and-ring rock art is also close to the sea. Van Hoek (2001) argues that panels mark landing sites and migration paths, pointing to the distribution of complex rock art at significant locations along natural routes leading inland from the coast. The only inland rock art in Scotland, around Loch Tay, is also argued by Van Hoek to be part of this migration process (ibid.). Some of the Northumberland panels also lie on routes inland along river valleys, and the cluster on the North Yorkshire Moors overlooks the North Sea. The Welsh distribution is also coastal, and similar patterns occur in Ireland. Yet this does not explain inland clusters such as those of West Yorkshire, the Peak District, and South Durham/North Yorkshire Dales. Nor does it explain the relative absence of rock art on the Cumbrian coast.

A second strand of evidence for continental influence involves stylistic comparisons. Henri Breuil (1934) was the first to observe similarities between the motifs found on the continent and those found
in Britain. Macwhite (1946) and Sobrino Lorenzo-Ruza (1952) extended this hypothesis, and Shee Twohig (1981: 122) also notes parallels. There are, however, two major differences. The first is the presence of large numbers of zoomorphic figures, usually deer. These tend to be superimposed over the circular motifs, although this is not always the case and it has been suggested that they were contemporary, perhaps forming scenic compositions (Peña Santos 1975). Borgna, however, argues that the abstract motifs were earlier, with the zoomorphs occupying marginal positions (1973). Although Iberian rock art includes many motifs common to Britain, depictions of animals are extremely rare in Britain, occurring only at two sites, Goatscrag in Northumberland (Burgess 1972) and Ballochmyle in Ayrshire (Stevenson 1993). At Ballochmyle, one deer is superimposed over a circular carving, similar to compositions found in Iberia. The second significant divergence is the fact that although landscape carvings overlap in geographical distribution with megalithic art in Ireland and Britain, they have little in common (cup-marks excepted) with the passage grave art found in France and Iberia. Bradley (1997: 66) suggests that the original source of inspiration may even have been in the north, and maintains that ‘Atlantic’ rock art is most likely a unitary phenomenon.

Figure 3-1: Deer figures emerging from circular motifs. Left: at Ballochmyle (after Stevenson 1993); and right: in Galicia (after Pena, 1976)

Regional trends
A second factor influencing patterns of material culture in the British Isles is the more sustained contact between neighbouring communities around the Irish Sea, across the English Channel, and within mainland Europe, involving the exchange of objects, ideas, and possibly people. Such connections are well documented and suggest that both social and physical communication networks were firmly established by the end of the Neolithic period with both coastal and overland links in evidence. Notable connections are shown east-west between north-east Ireland and Scotland, north-south along the Irish Sea coast, and east-west between eastern and southern Ireland and western England, Wales and the Isle of Man. The sharing of ideas is reflected in the design and distribution of pottery (particularly Grooved Ware), megalithic tombs, and social networks evinced by the distribution of stone axes. Petrological analysis (Clough & Cummins 1988) has enabled researchers to pinpoint their source precisely and to investigate their individual biographies. In addition to demonstrating the extended distances over which the axes travelled, distribution patterns reveal
specific regional links via coastal and overland routes, for example the movement of axes from Cumbria across the Pennines to East Yorkshire (Cummins 1979) and from Antrim to SW Scotland (Cooney 2000). Finds of jadeite axes also indicate contacts between Britain and the Continent.

Other patterns of cultural practice have been observed by mapping the limits, rather than the commonalities of architectural forms, revealing clear regional traditions. Categories of monuments such as Clyde tombs and Cotswold-Severn cairns reflect discrete distributions of particular forms. Yet these regional distinctions may be less distinct than the typology indicates: causewayed enclosures have long been associated with a southern distribution yet fresh interpretations (Waddington 2001: 1) and new discoveries of more northerly earthworks suggest a different picture (see Horne et al. 2002; Pearson & Topping 2002; Brophy 2004). There are clearly regional trends in evidence across Britain and Ireland, but these may have been more subtle than previous models suggest, with the availability of resources and the nature of the immediate environment influencing design as much as local traditions or external influences.

The lack of a comprehensive database and clearly defined categories for British rock art has prevented statistical regional comparisons; the RAPP Report concludes that such analysis “is currently (more or less) impossible” (2000: 33). Nonetheless, it is possible to make some general observations regarding regional trends and variations. It has already been noted that passage grave art is found on the western fringes of Great Britain: the Boyne Valley, western Argyll, Anglesey, Orkney, the Inner Hebrides. The cup-and-ring tradition has a more extensive distribution, but in Britain occurs most profusely between the Caledonian Canal and West Yorkshire. When Morris (1989: 48) analysed the available data he found that, of over 800 sites bearing the cup-and-ring motif (i.e. excluding panels with only cup-marks), fewer than 5% were north of the Moray Firth, and a similarly low percentage south of Yorkshire. As noted earlier, a striking feature of the rock art is its clustered distribution, some areas being having high concentrations and others no rock art at all. Major concentrations occur along the coast of Galloway (which has more rock art than the whole of eastern Scotland), Argyll, Tayside, north Northumberland, Barningham Moor and Gayle’s Moor on the North Yorkshire/Durham border, Rombauld’s Moor in West Yorkshire, and Fylingdale Moor on the east coast of North Yorkshire. Other clusters occur in Cumbria, Derbyshire, Wales, Anglesey, the Isle of Man, the Highland region of Scotland, Co. Donegal, and the Iveragh Peninsula.

This distribution has not yet been associated with regional trends reflected in, for example, ceramics or architectural preferences; neither has it been compared with links suggested by the movement of materials and artefacts such as axes or flint. The availability of a reliable dataset of rock art panels for the whole of Britain and Ireland will open up many possibilities for new research. Although a detailed analysis is not yet possible, these regional groups do appear to display variations in the motifs used, the canvas chosen and the placement in the landscape, suggesting that British rock art is not a homogeneous phenomenon, and may reflect local traditions. Some unusual motifs appear only in specific areas; the ladder design (Figure 3-2), for example, is unique to Ilkley Moor (Edwards &
Morris (1981) found a number of regional variations in Scotland. Spirals were more common in the east than the west, and in some regions cup-marks were the sole motif found. In some regions outcrops are preferred to boulders, although this may be related to availability. Different factors appear to have influenced the placement of rock art within the landscape in different regions: in Galloway, panels have a coastal distribution and are found at low altitudes, close to sea level (Morris 1979); in West Yorkshire (and other inland clusters) the rock art tends to be found on elevated moors but always below the highest ground (Edwards & Bradley 1999). In some areas composite designs are found on outcrops whereas cup-marks are restricted to boulders; in other places composite designs are restricted to higher elevations and cup-marks are found lower down the valleys (Bradley 1997).

Currently, comparisons between regions are impressionistic only. Factors such as geology, differential survival, and the incomplete nature of the record add further layers of uncertainty. The emerging picture is complex with many subtle variations both within and between regions. Comprehensive statistical analyses are essential if British rock art is to become fully integrated into archaeological research.

3.1.3 Rock art and other material culture

A third strand of research which may help to situate British rock art within a chronological and geographical framework is comparison with other forms of material culture. Without the representational images such as weapons, tools and boats found elsewhere in Europe, direct links with specific periods are difficult to demonstrate, but indirect associations with decorated artefacts and more general stylistic trends may provide clues to the approximate position of rock art within the prehistoric grand narrative. Although stone is the most enduring canvas available, a small number of carvings on other materials have survived, and decorated pottery also provides an insight into the development of pattern and design. Frequently referenced in this respect are the three Folkton Drums from East Yorkshire, believed to date from Late Neolithic period, 2600-2000 BC. Found in a round barrow, associated with a child’s burial, the drums range from 8.7 cm to 10.7 cm in height, are made from local chalk and are elaborately carved. The decoration is organized in panels and includes
stylized human faces, and geometrical patterns (Figure 3-4). Similar linear, hatched or lattice patterns have been found on other un-worked lumps and plaques of chalk in various contexts, several dated to the Neolithic (for a summary see Vardell 1999: 351-355). These have been compared by various authors to the passage grave style of carvings and with the decorations found on Neolithic Grooved Ware pottery (although the geographical distributions of passage graves and Grooved Ware (Figure 3-3) are distinctly different.

![Figure 3-3: Distribution of passage grave art and Grooved Ware. After Bradley & Edmonds 1993, fig. 2.8.](image)

One site in particular has produced a number of items of various material decorated in a similar fashion. In the Neolithic settlement of Skara Brae engravings were found on stones of house walls, on knives, and on an unusual, three-spiked object. Incised bone objects including pins, beads and pendants were also recovered. (For a detailed analysis see Shepherd 2000: 139-158). Grooved Ware from the settlement has a design which includes spirals, a motif found in both monumental and landscape contexts (Figure 3-5). Grooved Ware from Barnhouse, another Neolithic site on Orkney, has a ‘rosette’ (several cups around a central cup), a motif also found in both passage grave and cup-and-ring traditions (Richards 2005). Two Peterborough Ware vessels from Ford in Northumberland are decorated with concentric semicircles, similar to the landscape rock art in the area (Kinnes et al. 1985).
Other portable art from Skara Brae included carved stone balls. These mysterious objects might be considered as mobiliary rock art, and have a limited distribution around the Grampian region of Scotland (Marshall 1977; Thomas 1992). Some are decorated with spirals (Figure 3-6), concentric circles, chevrons, hatchings, and some have simple 'micro-cup' designs.

Many of the decorated objects described here can be considered as 'special' items, found in very particular, generally ritual, contexts. This may imply that the designs common to chalk plaques, drums, ceramics and stone balls may be related by more than simply a chronological period or geographical distribution, but may be linked by their specific role within society.

An alternative approach is to consider much broader stylistic trends in the design of tools, and the architecture of monuments and houses, which reflect evolving ideologies. Waddington (1998: 49-51) uses this approach to develop a chronological framework in which the fluid, curvilinear forms of the early Neolithic are replaced by more orderly, organised and angular patterns of later periods. The earlier designs were used to emulate and enhance the landscape, referencing natural forms; the later geometric patterns were imposed onto rock surfaces representing a degree of control over the natural world. Waddington argues that these characteristics can also be observed in the development of lithics from the teardrop or leaf shapes of early Neolithic arrowheads which contrast with geometric barbed and tanged arrowheads of the later Neolithic-Early Bronze Age.

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2 Two 'plain' carved balls are known from north-eastern Cumbria, evidence of links with Scotland but, other than their circularity, have little reference to rock art motifs.
3.1.4 Spatial distributions: GIS and landscape studies

Having addressed the overarching issues of culture and chronology, we can now move closer to the rock art itself and consider the more local contexts of the panel and its surroundings. Bradley’s 1997 publication highlighted potential relationships between rock art and the landscape, but he was not the first to consider rock art in a wider context. Independent researcher Ronald Morris had already laid the foundations, supplementing his descriptive catalogues with statistical analyses based on complexity of design, types of rock, sites and surfaces, views and archaeological contexts (Morris 1981). Bradley extended this kind of analysis, transplanting the concept of ‘sacred landscapes’ from North America to north-western Europe and generating a new emphasis human interactions with the physical landscape. Powerful new tools such as Geographical Information Systems (GIS) and portable Global Positioning Systems (GPS) have now made this kind of analysis much easier, allowing exploration of topography within the virtual world of the computer model. Information on viewsheds, elevation and topographical position can be rapidly extracted by overlying rock art panel locations onto digital terrain models (see for example Wheatley & Gillings 2002). Yet there are dangers with simplifying complex and subtle landscapes in this way, as noted by Gaffney et al (1995) and a major issue is the current lack of knowledge of past vegetation the presence of which would severely impact studies of intervisibility or view-sheds. Pioneering work in Scotland by Winterbottom and Long (2006) has sought to manage this unknown variable by creating virtual three-dimensional models of areas around rock art in the Kilmartin Valley. In these models the vegetation and water levels can be adjusted by the user to investigate a range of scenarios.

Other studies have used distribution mapping to investigate rock art in the context of both the physical landscape and known human activity within it, attempting to integrate the carved panels into the wider archaeological record. Waddington (1996) presents a model of early Neolithic transhumance in the Milfield Basin (Northumberland) in which cup-and-ring panels cluster in ‘inscribed grazing lands’ – areas of marginal upland pasture defined by rivers. In another study in Swaledale, Laurie (2004) found a spatial relationship between Pennine springs, burnt mounds and rock art. These analyses have
helped to re-integrate rock art sites into the wider archaeological landscape, but to understand more about the nature and function of carved panels, and to obtain secure chronological information, it is necessary to carry out more detailed investigation at the ‘rock face’.

3.1.5 Motifs: materiality, micro-topography and spatial organisation

A strand of rock art research which has developed in the last decade addresses the motifs and the way in which they relate to the shape and fabric of the rock(s) or monuments on which they are carved. In his analysis of carved outcrops in Kilmartin, Jones (2005) found relationships between the size and nature of the motifs, and the shape and size of ‘frames’ formed by natural fissures. He suggests that natural features were regarded as ancestral images to be incorporated, mimicked, or erased by the application of new motifs, with both natural and artificial markings attracting the addition of new images. Studies further afield have also considered the relationship between ‘canvas’ and carvings, and suggest that the three-dimensional form of the rock serves as a ‘landscape’ onto which figurative art is applied. In northern Russia the application of three-dimensional imaging has improved visualisation of such rocks including skiing figures which appear to move down a slope in pursuit of an elk (Janik 2004); by moving around the rock the viewer creates an extended narrative. The same project used virtual models to apply a perspective view with surprising results. Similar use of natural forms has been suggested at Naquane in the Italian Alps, where a series of ‘waves’ of fine, siliceous sandstone, perfectly polished by glaciers, are covered with a variety of images. On Rock No. 1 (Figure 3-7), a group of figures lines the vertical face of a ‘wave’, but a single figure is depicted horizontally at its base, appearing to swim along the bottom of a channel, which fills with water following rain (Priuli 2002: 28). Similar links with water are suggested by Bradley et al (2002) in their analysis of a carved panel at Revhiem, Southwest Norway. Here they argue that the carved outcrop itself resembles an upturned boat, and that contours of the rock, quartz veins and the flow of water across the rock all affect the placement of the images, predominantly ships, which become animated by the stream of water. Tilley (2004: 147-215) also notes the materiality of the rock canvas in relation to sites in northern Sweden. The largest panel at Järrestad has a smooth, convoluted surface – ‘waves’ of white Cambrian sandstone, onto which are carved a large number of ships and other images. Although the abstract motifs of British panels preclude this type of interpretation, similar studies may provide a new perspective on the selection of particular boulders or outcrops.

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3 When the art is reconfigured in 3-D, both boats and herds of deer appear to have perspective, receding into the distance.
This chapter has so far focussed primarily on quantifiable, material aspects of the British rock art corpus: its various forms and contexts, its distribution and chronology, and its connections with the wider archaeological record. Missing from much of this discussion are less tangible elements: the motivations, intentions and perceptions of the societies who created and experienced the carvings, and who later modified, removed or re-deployed them. Little mention has yet been made of the people who created and encountered the rock art. Who produced these images and for what reason? Who was the intended audience and how were the images perceived? To address these questions we must abandon twenty-first century perspectives and apply more creative approaches. The following section examines attempts to unravel the psychology of rock art and incorporate the human element of the equation in order to better understand prehistoric incentives and inspirations.
3.2 The Human Element: Motivation, Inspiration, and Intention

Believe, if thou wilt, that mountains change their place, but believe not that man changes his nature.

The Prophet Mohammad

Prehistoric carvings have been described as a “window onto the spirit of man” (Anati 2004: 10) — an invaluable legacy which provides a unique insight into the minds of our ancestors, more personal than their great monuments and potentially more meaningful than the tools of their daily lives; these marks provide a direct connection with the people who created them. The traditional approaches described in the previous sections — number crunching of geographical distribution, of elevation and orientation, of view-sheds and intervisibility — have resulted in generalised conclusions about the preferred location of carved rocks, but have done little to address less tangible questions of inspiration, motivation and intention. Over the last few decades however, new research has focussed on the individual, developing concepts of ‘identity’, ‘agency’ and ‘phenomenology’, and these have proved useful tools in the study of rock art. Combined with insights drawn from sociology, psychology and anthropology these approaches have enabled researchers to move a little closer towards a more meaningful understanding of prehistoric rock art. This section reviews some of the research avenues opened by these ‘human scale’ lines of enquiry. New approaches are evaluated and relationships between people, places and rock art explored.

3.2.1 ‘Fuzzy’ archaeology and rock art

Theoretical approaches in archaeology over the last few decades have turned towards the experiences of individuals, and two concepts regularly applied in prehistory are those of ‘agency’ and ‘phenomenology’. The concept of agency — defined as a socially significant quality of action — (see Gell 1998) has strongly influenced studies of material culture (e.g. Gardner 2004), especially visual culture (e.g. Skeates 2005), challenging purely structural and functional interpretations, and has been used to examine interactions between individuals and objects. Phenomenology has been applied chiefly in landscape archaeology in attempts to penetrate the perceptions of prehistoric people and their experiences of the world around them. Such encounters and interactions are argued to be strongly related to (and dependent on) both the individual and group identity of the subject, where identity is itself a complex mesh dependent on an extensive array of variables such as age, gender, status, shared culture (ethnicity, collective memory), and personal experience. The archaeology of prehistoric identity is, given the scarcity of evidence, somewhat problematic, hence a dependence on ethnographic analogies. Whilst descriptions of traditions and activities from geographically and chronologically remote cultures can be illuminating and provide useful parallels and insights, they

4 ‘[Phenomenology]... traces the a priori connections between concepts whose role is not to explain the world, but to focus our emotions upon it. It describes the way the world appears to us; and shows how appearances matter.’ (Scruton 2005)
have no direct connection to the study area or period in question, and so must be viewed with caution, and used only as: "pointers to the possibilities of interpretation" (Daniel 1986: 362).

Many of the papers resulting from these approaches share a common vocabulary. The ways in which prehistoric people perceived, related to and were affected by other people, objects, and the world around them are described as complex, fluid, and inconstant. Concepts such as 'ritual depth' (Díaz-Andreu 2001) and 'dynamic nominalism' (Hacking 2002) have been applied to express multidimensional, interlaced layers of meaning which are constantly renegotiated and evolving. The concept of blurred boundaries has been applied to many dichotomies, particularly 'sacred' v 'secular' (Díaz-Andreu 2001), 'ritual' v 'domestic' (Bradley, 2007 #302) and 'natural' v 'artificial' (Barpatt & Edmonds 2002). Recognised as intellectual constructs, these categories have been reconsidered such that arenas and activities once strictly separated (and studied independently) are defined as 'intertwined' and 'interdependent'. Thus, the natural landscape is incorporated into artificial monuments, ritual sites are modelled on houses, and stone tools quarried from spiritually important mountains are imbued with social significance beyond their functional application.

Authors often conclude with the hope that through acknowledging variations and unpredictability and by dissolving imposed divisions, we might begin to move closer to, and to appreciate and sympathise with the people we study, and to access their world-view. Yet, the recognition of so much uncertainty and changeability might be argued to imply that the quest for an absolute understanding and explicit knowledge of the world of our prehistoric ancestors is ultimately a lost cause: we could only ever hope to achieve an extremely vague, at best generalised view which might apply only to a discrete group (or a single individual) at a given place and at a specific time – a view which in any case would be relatively ephemeral, lasting only until it 'evolved' or was 'renegotiated'. So can we ever penetrate prehistoric motivations within this intangible, irrational and indefinable set of variables? Are these observations, acknowledgements and recognitions of uncertainty and diversity a valid and useful basis for discourse?

The concepts of 'agency', 'identity' and 'phenomenology' occur throughout the following discussion, and I believe have the potential to substantially enrich studies of prehistory, and in particular rock art, by providing a texture and depth which, although unsupported by quantitative measurements, may open up new routes of inquiry. In the same way that ethnographic and anthropological perspectives can demonstrate the feasibility of a range of human behaviours and beliefs, so these softer approaches may prompt the crucial creative leap to fuel the scientific process. By approaching the questions surrounding prehistoric carving from a range of lateral perspectives, it may be possible to identify fresh areas of study which could ultimately provide the data to substantiate the original, qualitative observations.
3.2.2 Space and place: attachment, memory and spiritual dimensions

*Land provides for my physical needs and my spiritual needs. New stories are sung from contemplation of the land. Stories are handed down from spirit men of the past who have deposited riches at various places, the sacred places... They are used for the regeneration of history, the regeneration of our people, the continuation of our life: because that's where we begin and that's where we return.*

(Dodson in Tacon & Faulstich 1993:81)

One of the greatest challenges facing would-be interpreters of British rock art is the absence of representative art; attempts to associate the various motifs with actual ‘things’, to seek syntactical relationships and thereby attribute meaning, are at best guesswork and fail on many levels. Knowledge may have been restricted even at the time the carvings were created, and cultural bias compounds the problem. Other major issues include a dearth of dating evidence and a lack of cultural context for the majority of examples. In the absence of a firm chronological or cultural framework it is necessary to look beyond simple measurements and comparisons; although the latter may answer basic questions of ‘where?’ and ‘what?’ in order to move toward the more challenging issue of ‘why?’ alternative strategies must be employed.

**Special places**

Many examples of rock art appear to be intrinsically related to the activities of people within the landscape, particularly their movement through it and relationships with it. At the very least the act of decorating a stone represents a permanent expression of a connection with the landscape through the conscious selection and marking of a specific location - an indication that ‘space’ has become ‘place’.

The above quotation of a contemporary Aboriginal relationship with the landscape illustrates the intensely powerful yet intimate nature of this symbiotic bond. Recent studies acknowledge that landscape exists through the perception and experience of the individuals dwelling within and engaging with it (Bender 1993; Tilley 1994; Hirsch & O’Hanlon 1995; Knapp & Ashmore 1999). This holistic perspective forces consideration of interrelationships between people, places, and natural features, accepting that these will be related to gender, age and status, and will be constantly renegotiated depending on prevailing social and economic conditions. Human beings are inherently both socially and physically dynamic, operating within complex communications networks which extend through time and across space. The movement of prehistoric people around their landscape would have been fundamental to the creation and negotiation of social identity for both groups and individuals, involving the spread of ideas, the movement of objects and materials, and engagement with the landscape on many levels. With this sympathetic (and even empathic) approach, rock art becomes more humanised - representing the creation of a direct and intimate connection with the landscape. Analysis must take into consideration the perceptions of people and their encounters with the world around them, their movement through the landscape, the relevance of significant natural features, viewpoints and the creation of thresholds of both social and ideological spaces. For investigators of rock art this is particularly pertinent, and may be a significant step towards penetrating that elusive goal - the motivation and intentions of prehistoric artists.
The feeling of attachment and belonging to specific physical locations appears to be a cross-cultural, cross-temporal phenomenon and may have been one of the earliest relationships established between prehistoric people and the landscape. This 'topophilia' (Tuan 1974) exerts a profound effect, fundamental to the establishment of both group and individual identities through association with common places and shared experiences, 'fixing social and individual histories in space' (Knapp & Ashmore 1999:13). There are a number of characteristics or qualities which might result in the formation of a specific attachment to a place. Perhaps the most easily understood connections involve locations which are striking or unusual in some way – and thus very memorable and easy to describe and convey to others. Unusual rock formations, plunging waterfalls, caves, rivers and cliffs all evoke emotional and imaginative responses, and are often tightly woven into mythology, embedded in the collective memory and used to affirm group identity. Another cause for attachment to a place may be a significant event which took place at that location, perhaps a shared social event, a natural catastrophe, or a more personal experience; applying a phenomenological approach, Tilley (1994:27) describes passage through the landscape as a series of “biographic encounters...recalling traces of past activities and previous events”.

An intimate relationship with the natural environment is clearly apparent in today’s Aboriginal societies and ethnographic perspectives can provide further insight: the Alawa totemic landscape studied by Layton (1999) visualises places as nodes in a network of ancestral tracks created by the ancestors whose deeds are recorded in legend. Curiously shaped rocks are considered a sign of dream-time ancestors. Morphy (1995:186) extends the association further: “Too often landscape has been seen as an intervening sign system that serves the purpose of passing on information about the ancestral past. I would like to argue that landscape is integral to the message”. It is proposed that rock art was an important part of this process, marking out socially significant features – loci of past events involving notable figures, either historical or mythical, in a landscape resonant with meaning. Carved panels are often found close to or adorning ‘monumental’ pieces of rock and dramatic boulder formations which themselves stand out as landmarks. The rock itself may be as important as the landscape in which it is located: “...nothing was more direct and autonomous in the completeness of its strength, nothing more noble or more awe-inspiring, than a majestic rock, or a boldly-standing block of granite” (Eliade 1958:216). In California, Hedges (1993: 123) found many examples of ‘monumental’ stones reinforced by the presence of rock art: a Kumeyaay rock painting at Las Pilitas is heralded by majestic granite boulders which loom above the site, and the cave site of Wikwip or Echo Rock is marked by a distinctive rock formation visible for many kilometres. Carved stones may thus have been used to permanently record triumphs, catastrophes, myths and legends, mapping them permanently onto the landscape. Marked locales could then be captured in social discourse, placing narrative events in physical settings and used to perpetuate social history and moral principles.
Sacred spaces

The transition from ‘space’ to ‘place’ often follows from the association of specific locales with high levels of spirituality: “(Men) are not free to choose the sacred site...they only seek for it and find it by the help of mysterious signs” (Eliade 1959: 28). Liminal places - where dark meets light, where mountains touch the sky, or the sea reaches the shore – are considered to be the domain of supernatural beings or ancestors, and accorded appropriate respect. Thus we have sacred mountains, caves and islands, often with temples or shrines marking these natural portals where spirits and mortals may interact and pass between worlds. Mountains are particularly revered; Eliade writes: “Mountains are often looked on as the place where sky and earth meet...a place where one can pass from one cosmic zone to another” (1958: 99-100). Watery places also have a particular salience: confluences, crossing places and springs are frequently associated with votive deposits or have legendary associations (Bradley 1990).

Rock art is frequently associated with liminal locations, strongly suggesting a link with sites which had spiritual significance, perhaps used to mark the focus of links between the living and the dead, past and present, or between real and spiritual worlds. A number of connections have been made between rock art and mountains. In the American Southwest associations are noted between rock art and the surrounding sacred mountains of the Navajo and Hopi, (Hedges 1993) and similar relationships have been suggested for Norwegian sites (Mandt 1995). Closer to the present study area, a relationship is suggested between the Boehe Stone in Northern Ireland and the sacred mountain of Croagh Patrick (Bracken & Wayman 1992; Bradley 1997), and another distinctive ('sacred') mountain, Simonside in Northumberland, overlooks carved panels at Lordenshaw (Beckensall 2001:7-10). Petroglyphs are also associated with watery places from waterfalls, rivers and lakes to the open sea. Helskog (1999) relates the predominantly shore-line carvings of Scandinavia and Northern Russia to the tripartite cosmological beliefs of this extended region in which the shore is the only landscape where the three cosmic worlds (upper, middle and lower) meet the natural zones of water, earth and sky. The rock carvings are argued to signify places of communication between worlds and to represent a 'cosmic landscape'. Many rock art sites in Northern Sweden and Scandinavia are situated close to running water and Goldhahn (2002) argues that the 'sound-scape' produced by rivers and streams was an integral part of encounters with the rock carvings, and suggests the intensity of the resulting audio-visual experience may have been key to shamanistic activities.

Might similar belief systems account for the complex array of motifs which adorn the red sandstone cliffs above the River Coquet at Morwick in Northumberland, or the extensively decorated outcrop situated close to a waterfall at Roughting Linn, also in Northumberland? Conclusions about such associations are frustrated by the fact that many of these sites have other aspects which may explain their selection: the Morwick spirals are close to a river crossing point on a putative route inland, and the Roughting Linn outcrop would command an extensive view but for modern woodland. In the same way, although close to a sacred mountain the carvings at Lordenshaw command an extensive view across the Coquet valley to the Cheviots (Beckensall 2001: 88). The presence of water features...
or mountains may simply have added significance, providing a spiritual dimension to sites which may have had a primarily practical role. These examples clearly illustrate the difficulty of separating the sacred from the secular in the prehistoric landscape but approaches informed by ethnography recognise that religious and secular relationships with the landscape are inextricably interwoven, such that prior concepts of discrete ‘ritual’ or ‘economic’ landscapes become inappropriate. Ingold argues that “the distinction between religion and economy...has no meaning for native people....The very provisioning of society is thought to depend upon the proper conduct of ritual activity” (1986: 140-141). Tilley also recognises the co-existence and merging of economic rationality and symbolic logic suggesting that far from existing in isolation “each helps to constitute the other” (1994: 2). This tension between secular and sacred landscapes is explored by Díaz-Andreu (2001: 158-172) in relation to Spanish rock art, using a concept of ‘ritual depth’ which recognises varying degrees of sacredness and secularity and acknowledges the dimension contributed by individual identity and experience.

Religion is a notoriously difficult subject for archaeologists yet material manifestations of religious activity often form a substantial part of the archaeological record, for example in portable and parietal art. In the early 20th century Durkheim attempted to bring together ideas of prehistoric art and religion, arguing that “the principal forms of art seem to have been born out of religious ideas” (1915: 381). This association has since been substantially supported by ethnographic studies as well as close analysis of Palaeolithic art. Mithen (1998) suggests that art provided a means via which the abstract and often counter-intuitive concepts of religion could be conveyed, whilst also anchoring the ideology and ensuring long-term stability. Yet the interpretation of prehistoric art is problematic: the societies which created petroglyphs used a system of signification very different from our own; our language is unable to capture the hints, metaphors, nuances, resonances and textures embedded in the carvings. Ethnographic sources provide one means to access the ‘forager’ world-view; however our own ‘non-forager’ sensibilities may not always be capable of recognising and appreciating the multiple layers and depths of meaning which are entirely outside our experience. As illustrated by the Aboriginal view, relationships with the landscape may strongly influence group and social identity, as well as having spiritual significance.

This multiplicity and layering of meanings notwithstanding, the marking of specific places does point to a desire to define and organise space, to proclaim a ‘connection’ (the equivalent of planting a flag), and eventually to domesticate the landscape. This may have been related to recognition of the power of the land and its fundamental importance in providing food, shelter and other resources. The process of ‘naming’ and implicitly ‘taming’ the landscape may have provided a feeling of control over the often dangerous and unpredictable natural world. But this need for reassurance in an inconsistent environment does not necessarily imply a sedentary way of life as illustrated by the ethnographic examples above. The following section examines ways in which marking the landscape may be a vital element of a mobile existence, aiding movement through difficult or unfamiliar territory, providing protection for travellers, or denoting sacred or other thresholds.
3.2.3 Movement: route-ways and rock art

To ignore the precision offered by a study of the routes and roads would seem to represent a failure on the part of the archaeologist who seeks to understand the nature of past societies. (Coles 1984)

The discussion has so far focused on human engagement with specific places, but an appreciation of movement through the landscape may also provide new insights into the role of open-air rock art. The selective positioning of carvings on relatively high ground, often with extensive viewpoints and along possible ‘route-ways’, points to a society in which movement across the land was a key part of life. In addition, British rock art tends to be found in areas where mobility continued to be important long after other areas became more settled and sedentary (although geology and taphonomy may account for some of the distribution). Decorated panels are often found overlooking natural harbours, as in Galloway (Morris 1979; Bradley *et al.* 1993b) at the entrances to possible key routes inland, close to mountain passes and along the edges of valleys, such as Tayside in Southern Scotland (Hale 2003) and between known areas of activity such as ritual complexes. At Millstone Burn in Northumberland carved stones command significant views in two directions along the valley axis (Bradley 1997: 85-88; Beckensall 2001: 96-99). In a detailed study of carved rocks on the Iveragh Peninsula to the south-west of Ireland, Purcell found sites either close to natural route-ways through valley bottoms or situated to overlook these routes (Purcell 2002). In the Kilmartin Valley in Argyll, intervisibility studies have shown rock art panels to lie along the edges of valleys between coastal sites and Loch Awe to the north (van Hoek 2001; Winterbottom & Long 2006). Another Scottish rock art cluster is found at the eastern end of this natural route across Scotland, in the valley of Strath Tay, where
intensive survey has revealed a large number of carved panels both along the northern shore and on lower ground at both ends of the loch (Hale 2003). Association with specific routes is problematic since few actual prehistoric tracks have been identified, but these contexts do appear to suggest a broad relationship between rock art and movement through the landscape and it is worth considering the concept of prehistoric journeys in greater detail.

Scholars of prehistory have long been fascinated by distribution maps, extracting meaning from patterns of dots and their relationships with each other and with the surrounding landscape. Less frequently added to the map (or even considered) are the lines which join the dots, the routes by which the prehistoric communities moved between nodes of activity – be they places of occupation, ritual, production sites, or more temporary camps. Yet much of prehistoric society depended on the contact, communication and transmission of knowledge, goods, and even genes that to neglect this element of prehistoric life is to ignore a valuable ‘route’ into understanding the functioning of these communities, as demonstrated by Helms’ analysis (1988) of the way cultures interpret space and distance in cosmological terms, associating political power with information about ‘strange’ places, ‘foreign’ people and ‘exotic’ objects. Other, phenomenological approaches offer new ways of thinking about journeys by attempting to recreate the experiences of people moving through specific landscapes (e.g. Price 2004) and have led to reconsiderations of the role that journeys played in the meaning of both places and performances.

Prehistoric paths & evidence of mobility
The first tracks to appear in the landscape were those of animals moving along migration routes or making regular visits to feeding or watering places (Taylor 1979: 1-4). These early routes were no doubt invaluable to the hunters and gatherers who trailed the herds, leading the way through dense vegetation, guiding across the firm ground of the marshes and pinpointing the easiest crossing places at rivers and streams. Tracking animals and finding resources may have been the first reason for people to move around the landscape. Such movement would have been seasonal, perhaps repeating the same routes each year and using temporary camps at known locations. This repeated usage, together with the gradual matching of activities with resources and topography are likely to have resulted in the emergence of favoured places and routes between them.

The legacy of the hunter-gather lifestyle, where movement was central to survival, did not disappear with the first settlements of the Neolithic. Evidence indicates that crop-growing was supplemented seasonally with advantageous hunting and gathering from known sources requiring regular expeditions, and pastoralism demanded seasonal movement of herds in order to benefit from fresh pasture throughout the year. Other resources such as flint and stone were not always locally available and may have necessitated regular journeys to the source. Possibly the most frequently cited evidence of contact between people is the presence of objects and materials of known origin being found in non-native situations. This does not necessarily imply that the ‘owner’ travelled with the item – in many cases the evidence points to hand to hand exchange over small distances (see for example Chappell
1987), but this also implies movement either of specialist ‘traders’ between settlements or of both parties to a central location, perhaps a stone circle or henge. The emergence of these large monuments suggests that substantial numbers of people gathered together at key places. Journeys to these sites may have been regular events – perhaps annual meetings eagerly anticipated each year – a chance to meet people, strike bargains and exchange ideas.

**Navigation**

Whatever the reason for movement, it is likely that natural features played an important role as a crucial tool for navigation and for ‘describing’ the landscape. These features are permanent, recognisable and often visible from a distance, providing a ready framework for mapping and conveying information about the land. Mountains and elevated places provide a viewpoint, whilst rivers have inherent direction, flowing from source to sea, and both allow the creation of a ‘here’ (traveller’s viewpoint) and ‘there’ (horizon). It is argued that rock art may have performed a similar role to that of natural landmarks, identifying significant sites perhaps at locations requiring navigational choices (e.g. Bradley 1997: 79-89). This ‘sign-post’ function has been proposed for a number of rock-art sites elsewhere in the world, supported by studies of intervisibility between marked rocks. For example, at Granilpi in the Northern Territory of Australia researchers found a string of 35 cup-marked rocks extending over 200 m, each in direct sight of at least one other (Tacon et al. 1997)

In Britain studies of intervisibility and the extent of views from carved stones suggest a significant degree of selectivity in some areas (Bradley et al. 1993a; Bradley 1997: 81-89, van Hoek 2001) yet many carvings do not appear to be visible from the hypothetical routes and knowledge of local prehistoric vegetation would be necessary to confirm that the stones could themselves be seen by people moving along trails. Bradley suggests that in some areas "the visual links were between the hills rather than the carved rocks themselves" (Bradley 1997: 123). Rock art along routes may therefore have served some other purpose, perhaps providing a spiritual presence to protect travellers from the perils of a particular location – either real or imagined. In this case there would be no requirement for the stones to be visible from the pathway.

We have seen how the landscape plays an important role in the development of both group and individual identity, providing a backdrop onto which human attachments and collective memories and mythologies are pinned. It may also be manipulated in a more pro-active fashion, in the enactment of power strategies or ritual activities. Here, carved stones may be seen as influential devices employed to produce a specific effect on those who encounter them. The next section explores the potentially compelling agency of rock art and its powerful effects on its audience.

**3.2.4 Multiple meanings: rock art as a social agent**

The limited repertoire and restricted usage of symbols recorded from thousands of British panels suggest a limited, shared vocabulary, which in turn implies that the symbols or their various
Chapter 3: Interpreting Rock Art

combinations had very definite meanings for the people who were familiar with or privy to that vocabulary. Most researchers acknowledge the impenetrable nature of the ‘meaning’ residing within British rock art, but attempts have been made to draw more general inferences by classifying panels according to their ‘complexity’ and relating this to their relative position in the landscape (Stewart 1959; Bradley 1994; Bradley 1997). The public nature of open-air rock art suggests that it was intended for a wide audience, although different panels may have been viewed by different groups of people. As noted earlier, in some areas there is a direct relationship between the complexity of the design and the altitude of the site, with simple cup-and-ring patterns found in the valley bottoms and intricate panels more often found in elevated positions, and on more prominent outcrops. Bradley suggests that the complex panels found at the outer edges of the settled landscape were visited only intermittently during hunting expeditions or seasonal grazing. The groups using these panels would therefore have needed precise information. By contrast, the simple carvings in the lower, settled areas would have served a more stable population who shared the same body of knowledge (Bradley 1995: 122). Drawing on Morphy’s (1994) ethnographic studies of the Yoingu of Northeast Arnhem Land, Bradley also argues that ‘meaning’ may have been directly dependent on the experiences and identity of the viewer, with panels containing both ‘inner’ and ‘outer’ meanings.

By contrast, Van Hock (2001: 238-241) argues that the designs and their role in society evolved over time. He proposes that the ‘simple’ cup-marks found in accessible, valley locations were the work of early mobile groups who used the carvings to enhance their routes, distinguish between the ‘accessible’ and ‘inaccessible’ and propitiate the spirit world. He argues that as new settlers introduced agriculture and life became more formally structured, the carvings developed to include the ‘ring’ motif. Van Hoek suggests that this was a response to a greater need to appease more spirits in order to control all the new aspects of a sedentary lifestyle. At the same time, he argues, the gap between the leaders and the rest of the community grew such that those in power needed privileged contact with their deities in order to maintain their position. As the hierarchies grew, so, he proposes, did the complexities of the rock art, particularly at key places on the ancient routes; the audience became a privileged group within the new social structure, enjoying access to special, isolated territories in order to enhance their status.

Both above hypotheses are risky as they assume simple relationships between ‘style’ and social structure. Ethnographic studies suggest that complexity of design is not always directly related to complexity of meaning: the simpler the art, the greater the range of meanings that can be drawn from it (Layton 1992: 11). Yet the fact that the practice of carving rocks flourished for such a lengthy period suggests the symbols had enduring significance. Their power and meanings undoubtedly changed for the people who lived amongst them as they developed from a nomadic, egalitarian community to the sedentary, segmented and hierarchical society who eventually lost the need to use them.

Morris (1989) unhelpfully excluded all ‘simple’ panels from his analysis of British rock art.
Their information content and complexity aside, distribution patterns of rock art suggest that it might have been used to designate the 'thresholds' of landscapes which may have held significance. The carved panels may have provided 'notice' that a significant boundary was about to be crossed, perhaps requiring specific behaviour in the transition from the mundane 'day-to-day' world into an 'other' realm. Prehistoric 'ritual complexes' in Britain are often located in low-lying basins surrounded by hills, approached by narrow valleys; (Bradley (1995: 118) likens this arrangement to passage grave architecture The Kilmartin Valley in Argyll is a typical example. Here, the most complex motifs tend to flank the area and overlook the valleys giving access to the 'sacred landscape'. Investigating more secular divisions of landscape, Waddington found that carved panels around the upland margins of the Milfield Basin in Northumberland may have played a role in the demarcation of grazing lands defined by rivers (Waddington 1996), introducing the concept of territorial boundaries.

Rather than interpreting the carvings as 'information', more recent approaches have sought to study the panels as meaningful in themselves, as social agents in the creation of both individual and group identities. Evans and Dowson (2004) divided panels into 'standard' and 'elaborate' compositions in a study of the re-deployment of landscape art in mortuary monuments. They conclude that panels were deliberately selected for inclusion depending on the nature of the motifs, in order to either distance the dead from the living, or to link the dead to specific locales, depending on regional traditions. Although this particular study is unconvincing the selective inclusion of carvings in burial monuments may reveal much about the social structures and ideologies of the communities who built them.

In Ireland a total of 32 passage graves were decorated out of approximately 300 sites known in 1981, with carvings recorded at a further six probable passage graves (Shee Twohig 1981: 93-94), and new discoveries have since been made, for example at Knockroe, Co. Kilkenny (O'Sullivan 1993; O'Sullivan 1996). Analysis of the motifs used has revealed distinct spatial organisation of different motifs. At Knowth, angular and rectilinear designs such as chevrons and lozenges are predominantly found on internal walls and around entrances whereas curvilinear motifs are found on the external, more 'public' kerbstones (Eogan 1986: 146-95); a similar (though less clear) pattern is seen at Newgrange (O'Kelly 1982). Here, beyond the physical and psychological barrier of the entrance stone with its famous spiral designs, a passage leads away from the world into the central chamber with its motif of three connecting spirals. A beam of light penetrating the chamber at dawn on the winter solstice reaches the floor just below the spiral. The alignments of monuments and burial chambers and manipulation of light and sound demonstrate a well-developed understanding of mathematics, and a preoccupation with astronomy. As dependence on agriculture increased, the ability to influence or predict solar events and seasonal patterns was increasingly valuable. This 'wisdom' may have been shared - passed down the generations or acquired during initiation ceremonies. Alternatively it may have been considered sacred knowledge held by an elite priesthood, or a single powerful individual or shaman. Russell (2002: 25-70) suggests that each mound functioned as a cultural or social 'archive'.

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6 The data on which the 'Cumbrian' tradition is based is certainly flawed.
containing identifiers specific to its builders, with chambers designed to ensure that those accessing the community ‘database’ were reminded that they were entering a special place, separate from the world outside. This separation was emphasised by the narrow passage and by large stones often found at the threshold which would have restricted access and limited which members of society could reach the internal chambers, perhaps during initiation ceremonies geared to the younger, smaller and more agile members of the community.

Other theories suggest that the passage graves were the domain of a small group of high-status individuals: a priesthood who used the chambers for mysterious rituals during which they entered into trance and communed with animals, gods and ancestors. Lewis-Williams and Dowson (1993) argue that Irish passage grave art reflects entopic imagery related to shamanic trance experiences, with the curvilinear forms representing the ‘tunnel’ experience. Experimental research by Dronfield (1993; 1995) suggests that subtle differences in the style of motifs used at various sites may reflect different methods or substances used to achieve trance. Work by Watson and Keating (1999: 325-326) suggests that ceremonies within the chambers also involved the generation of low frequency sound waves, which resonated and enhanced the experience of the participants. Might the concentric ring motifs be depictions of the sound waves, made visible by dust particles in the smoky chambers and tunnels?

This chapter has introduced a range of analytical and interpretive approaches which have been used to investigate rock art both in Britain and elsewhere in recent years. These range from the analyses of spatial distribution aimed at establishing basic facts and relationships, through to experiential studies which seek to understand the intentions of the carvers and the purpose of the motifs. A number of these methods were applied to the Cumbrian corpus during this study. Although the limited extent of the dataset precluded methods involving statistical analysis, concepts relating to smaller groups and to individual panels were tested using Cumbrian sites. Quantitative measurements and observations obtained in the field were enhanced by combining them with more subtle explorations of human experiences and motivations. It was hoped that by considering the Cumbrian panels at a variety of scales and through the perspective of a number of theoretical models, new observations and information might emerge. Before any such analysis could be attempted however, it was essential to have a reliable and comprehensive dataset; Section II describes in detail how this was achieved.
PART II

Changing Pictures:

_Cumbrian rock art, old and new_

_Capt Howe, Great Langdale, Cumbria._
You can use all the quantitative data you can get, but you still have to distrust it and use your own intelligence and judgment.

Alvin Toffler (Boone & Kurtz 1999: 80)

Rock art researchers are faced with only a minute fragment of the original record. Five millennia of geological, biological and human activity have undoubtedly erased many of the rock carvings which once scattered the landscape and as shown in Chapter 2, finding and recording those that survive is an ongoing and often sporadic process with more discoveries occurring by chance than through systematic survey. It was therefore important to appreciate the factors which may have influenced the picture of rock art in Cumbria as it stood prior to the present project. Chapter 4 begins by introducing the dataset as understood in 2002, and charts its discovery over the last two centuries, exploring factors influencing its identification and recording. Section 4.2 steps back from the data to review more general issues of data reliability including the completeness and accuracy of the information, focussing on factors which may explain why relatively few examples of rock art had been identified in Cumbria. In Section 4.3 the specific challenges of recognising rock art are considered, with particular focus on cup-marks. Suggestions are made for an objective method of evaluating the probability that cups are carved, rather than of geological origin. Finally, Section 4.4 applies the information gathered to the Cumbrian dataset, presenting the results of a critical appraisal of each published panel, with some surprising results. But first we must journey back in time to a period of antiquarian explorations and 'magical devices'.

4.1 Introducing the data: a brief history of rock art in Cumbria

In 1866, when the Reverend James Simpson expounded on the topic of 'curious marks' in an address to the members of the newly founded CWAAS (see Chapter 1), fewer than half a dozen examples of rock carvings were known in Cumbria. In 2002, Beckensall listed sixty-seven individual panels. Some of these are critically assessed later in this chapter (full details for each example are provided in Appendix A) but I would first like to introduce them as they were discovered, to demonstrate how the identification of rock art has evolved in Cumbria and consider the factors which have influenced their recognition and reporting.

4.1.1 Antiquarian beginnings

The earliest identification of 'ancient art' in Cumbria was made at Aspatria on the west coast in June 1789, and reported by Major Hayman Rooke (1792). A 'barrow' at Beacon Hill had been 'excavated'
by the landowner, Mr Rigg, revealing a cist containing a large male skeleton adorned with a broadsword, dagger, battle axe, shield and other metal items\(^1\). Two large stones forming the west side of the chamber were decorated with a variety of figures including single and double rings, some with cups and others with central crosses. Writing in 1797, the compiler of Hutchinson’s *History of Cumberland* believed the carvings at Aspatria to be “…the work of ignorant sorcerers and wicked wretches. It appears to have been the practice of those conjurers, to lodge their tables of magical device and sculptures in ancient tumuli…from an idea that infernal spirits visited such places…and from thence could be driven by those machinations, to work such works of darkness as the magician desired” (1974: 288). Sadly both the stones and the grave goods were lost, so that only Rooke’s descriptions and illustrations (Figure 4-1) can provide clues to the nature of the carvings. The burial appeared to be of the Viking period and, writing around 70 years after the discovery, both Fergusson (1872: 57) and Sir James Y. Simpson\(^2\) (1867: 118) believed the figures to have Scandinavian influences implying that they were created for the burial. The Reverend Simpson took a critical view, asking “Were the markings made on these stones at the time of interment, or had they, when taken for one side of the kistvaen, formed part of a circle, within which or upon the side of which the kistvaen had been constructed and the barrow raised?” (1874: 5).

![Figure 4-1: Engraving from Rooke (1792: opp. page 112).](image)

\(^1\)Modern excavations (Abramson 2000) produced more Viking objects confirming a late 9\(^{th}\)-10\(^{th}\) century date.

\(^2\) The pursuit of ancient carvings seems to have attracted persons of similar name... Sir James Young Simpson (1811-1870), V-P of the Society of Antiquaries of Scotland, and Professor of Medicine and Midwifery, should not be confused with his friend the Rev. James Simpson, (1819-1886), Vicar of Kirkby-Stephen and President of the CWAAS. Similarly, Dr. James Fergusson (1808-1886), Scottish architect and author of Rude Stone Monuments, should not be confused with Richard S. Fergusson (1837-1900), Chancellor of Carlisle and President of the CWAAS or Major Spencer C. Ferguson the finder of the Eden Hall stone.
The next recorded observation of rock art in Cumbria appears thirty years later in Hodgson's work on Westmorland (1820: 139). In an account of the standing stones which made up Shap Avenue in the east of the county, he describes a stone now known as the 'Asper's Field Stone': "...its base is fairly levelled, and has a hole four inches over and two inches deep in its centre. There is also on one of the slopes of this stone, near its base, a hole, apparently artificial, and probably used in conveying it: on its uppermost corner is a rude circle, eight inches in diameter, with a shallow hole in its centre, some symbol, probably of the use of this column".

Carvings on the Long Meg standing stone associated with a stone circle near Penrith in the Eden Valley were first noted in 1835 by Sir Gardiner Wilkinson, English traveller, writer and pioneer Egyptologist, who describes four concentric circles around a cupped centre. Although this is the first documented evidence that these carvings were known, it is likely that they were familiar to local people. Certainly Long Meg & Her Daughters were well known to Camden (1695), who was told of "pyramides of stone" by Reginald Bainbrigg, a local schoolmaster (Haverfield 1911: 361). They were also known to Celia Fiennes who wrote about 'Great Mag' in 1698 (Fiennes & Morris 1949) and to Stukeley (1776) who saw the stones in 1725, and although neither noted any markings. The first recording of Long Meg was made by Sir James Y. Simpson in 1865, who visited the site with local antiquarian Dr Michael Waistell-Taylor. Simpson wrote: "Lately, I had an opportunity of examining this stone, and found, not one, but several series of concentric circles carved upon it, three or four of them low down on the stone, and much faded" (1865: 20). A photograph of the stone was commissioned and this was used to produce a plate which appears in Simpson's publication (Figure 4-2). Simpson checked the other stones of the circle and noted that a large block opposite Long Meg had "the doubtful appearance of a faded circle upon its western face" (ibid.: 21). He also describes "ring cuttings" found by his friend the Reverend James Simpson, on two boulders at the Little Meg cairn a few hundred yards to the east, and these also appear in his book (Figure 4-2). Simpson also described carvings on two of the Shap Avenue stones, including the Asper's Field Stone (previously described by Hodgson), of which he says: "On its flattish top I measured one cup six and a half inches broad and one inch and a half deep, with a single ring nine inches in diameter cut around it...

(Simpson 1867: 22, plate xvii, fig. 4) (Figure 4-3). He also notes a "circular disc" on the nearby Goggleby Stone, which he believed to be "the remains...not of a cup, but of a worn-out ring-cutting" (ibid.). This had not been observed by Hodgson and is unfortunately not depicted by Simpson. He further states that he was unable to find any evidence of "artificial tooling" on the stones of neither the nearby stone circle nor on the double circle at Gunnerkeld a few miles away — the first evidence of a proactive attempt to locate new rock art (ibid.: 23).

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3 Although himself born in Buckinghamshire, his father was a Westmorland clergyman, the Reverend John Wilkinson, an amateur antiquarian.
4.1.2 Growing awareness

The late nineteenth and early twentieth centuries saw a steady expansion of the dataset, perhaps encouraged by the establishment, in 1866, of the CWAAS which provided a focus and forum for discussion and publication. The Reverend Simpson's opening address placed prehistoric carvings firmly on the agenda and several members took up his challenge to locate new examples. In 1872 cups were noted on standing stones at Kirksanton on the south-west coast. Society member J. Eccleston observed: "There is a circular cavity on one of these stones (the larger) on the inner side, about 3 in. in diameter, and 1 ½ in. in depth...It appears to have been made by a blunt instrument, as a flint head or obtusely pointed drill" (Eccleston 1874). Dr Waistell-Taylor, who had visited the Shap stones with Sir James Y. Simpson, continued his interest in prehistoric carvings, in 1881 reporting
“the most remarkable cup-marked stone ever discovered in Cumberland and Westmorland” (Ferguson 1895: 398). This was a carved sandstone slab covering a cist cut into limestone bedrock at Redhills near Penrith, in which was found a “quantity of bones and charcoal” (Taylor 1883: 113). The elaborately decorated stone is now lost but an engraving depicts an arrangement of cups, grooves and concentric circles (Figure 4-4). Waistell-Taylor’s paper included a remarkably detailed account of the motifs. He also listed other sites known at the time, including a single cup-mark on a stone in the ‘ancient village’ of Hugill near Ings, which he describes as: “…distinctly tooled by the hand of man, and not the product of natural disintegration or weathering” (Taylor 1883: 112).

Four years later two cup-and-ring marked slabs were found in a field in Maryport on the west coast (Bailey 1888), and in 1895 Chancellor Ferguson, then the President of the CWAAS, renewed interest in the prehistoric carvings with an article in the Transactions describing an unusual example uncovered at Old Parks, Kirkoswald in the Eden Valley (Ferguson 1895). This was the first of only two Cumbrian rock art sites to be identified as a result of development work. A tumulus of loose stones bought by the council for road building had been dismantled and, after removing 30 cart-loads of cobbles, workmen found a line of five erect slabs forming a partition across the (narrower) north-south axis of the oval area. Three of the slabs were decorated with unusual markings. Photographs of the stones in situ (possibly the first published photographs of Cumbrian rock art) provide an invaluable record4 (Figure 4-5). Ferguson’s paper also provided a brief overview of the nine sites (twenty-one panels) known at the time, which included standing stones, kerb stones, cist covers, fragments, and several stones in the Hugill settlement – a wide variety of contexts and styles which continued to baffle those seeking an explanation. Ferguson concluded his paper with a quotation from Dr J. Anderson: “they [the carvings] are one of the enigmas of archaeology” (Anderson 1886: 299).

4 Two of the decorated stones were recovered from the farm by Frodsham in 1987 and are now held by Tullie House Museum in Carlisle; the third is sadly lost (Frodsham 1989: 15)
Seven years later in 1900, the editor of the CWAAS Transactions presented a paper on a recently excavated kerbed cairn at Glassonby, also in the Eden Valley (Collingwood 1901). He recounted that “Between [stones] 30 and 1, or between 5 and 6, there was, about 25 years ago, a stone described by Mr Thomas Glaister, of Glassonby, as over 3 ft long, about 6 inches thick, and two feet high, of red sandstone, with a spiral or concentric circles, like the figure on Long Meg, incised on its side” (ibid: 298). The following year the Reverend Canon Thornley described another stone at Glassonby with markings on its inner face, at position 28 in Collingwood’s plan (Thornley 1902). The carvings included concentric circles similar those at Little Meg and Long Meg. Thornley published a photograph of the stone “with the ring marks very carefully retouched on the spot from the original stones. Without this retouching the faint markings would hardly have been visible in the engravings” (ibid.: 383) (Figure 4-6). He also included a sketch by the editor, W.G. Collingwood, of a carved stone removed from the Little Meg cist (Figure 4-7), and a photograph of Little Meg, previously recorded by Simpson. He closed his paper with a comment which showed great foresight: “The five stones of the Old Parks Tumulus are slabs of sandstone, now fast weathering. Hence good illustrations are greatly to be desired, and in the future will become increasingly valuable” (ibid.).

Discoveries in the Eden Valley continued when, in 1909, Major Spencer C. Ferguson, hunting for otters by the River Eamont at Honey Pots Farm, near Penrith, came upon a large boulder protruding from the ground. The stone was extensively decorated on one side with a series of cup-and-ring motifs enclosed within an oval groove. His find was reported in the Society Transactions (Ferguson 1910: 507-508) and the stone removed to the safety of Tullie House Museum. Perhaps heeding Rev. Thornley’s words, the Major included both a photograph and a sketch by F.S. Sanderson of the School of Art at Tullie House (Figure 4-8).

![Figure 4-5: Old Parks stones in situ captured by photography in 1902 (After Beckensall 2002: fig.112).](image-url)
Chapter 4: Recognising Rock Art

Figure 4-6: Kerb stone at Glassonby: 'touched-up' photograph by F.W. Tassell (Thornley 1902: fig. 3).

Figure 4-7: Little Meg Cist cover, sketched by W.G. Collingwood (Thornley 1902: fig. 2).

Figure 4-8: The Eden Hall stone, drawn in 1910 (Ferguson 1910: 508).
Chapter 4: Recognising Rock Art

4.1.3 The missing years

In 1918 the focus moved to west Cumbria when a cup-and-ring marked sandstone boulder was uncovered in a field near the village of Dean (Mason 1923), but this was the last rock art to be identified in Cumbria until 1984 – an interlude of sixty-six years! During the 1960s and 1970s when Morris and Beckensall were recording hundreds of sites elsewhere in Britain, not a single discovery was made in the region. The only find worthy of note was a small sandstone block recovered during the excavation of the Bronze Age ‘Broomrigg B’ stone circle (Hodgson 1952: 3-4). The stone was inscribed with a series of lines, possibly forming two ‘X’s, but had no firm context (see Section 4.4. for a discussion). The reasons for this long dry-spell in terms of rock art discovery are unclear. The two World Wars undoubtedly affected the level of archaeological (and other) activity during the early part of the century but do not explain the lack of new finds in the later decades. Membership of local archaeological societies had grown, although fieldwork (both amateur and professional) tended to focus on Hadrian’s Wall. Perhaps most surprising is that this period saw the greatest increase in the development, management and exploitation of the landscape with forestry, the building of roads and reservoirs, and the expansion of settlements. This was coupled with a growing population and rising visitor numbers enabled by improved transport links. Groups such as the National Trust, the National Park and the Friends of the Lake District were able to control the changes to a degree, but the general trends of the twentieth century should, in theory, have resulted in more discoveries of rock art. Perhaps, instead, the net result was increased destruction and concealment.

4.1.4 Rock art returns

Rock art was once again found in Cumbria when, in 1984, British Gas unearthed a decorated slab at Stag Stones Farm near Penrith, the second panel in the county uncovered as a result of development work. This was soon followed by a report of a cup-and-ring marked stone at Tortie Cottage in the north-east of the county, identified by local resident Mrs Jennifer Waldron. Both discoveries were published by Frodsham (1989: 17), the first trained archaeologist to investigate Cumbrian rock art. Frodsham’s paper included a gazetteer listing eighteen Cumbrian rock art sites covering twenty-five stones. He concluded that “the relative scarcity of megalithic carvings in Cumbria is in some ways compensated for by their diversity” (ibid.). The Tortie Cottage stone is one of only two Cumbrian rock art sites to have been the subject of excavation. The base of the Goggleby stone at Shap was the first to be investigated (Clare 1978) and a similar approach was used at Tortie Cottage (Richardson 1992). Both stones were shown to be fallen uprights, but little else was determined, although field-walking at Tortie Cottage revealed a second decorated boulder nearby.

After the dearth of rock art discoveries from the 1920s through to the 1980s it is interesting to consider what factors may have prompted this upturn in the number of finds. The prolific recording and publishing by Morris and Beckensall of rock art elsewhere in Britain may have revived interest and increased public awareness and so increased chances of recognition. Certainly Frodsham’s gazetteer served to remind members of the CWAAS that rock art formed a major part of the archaeological record for the region, and may have encouraged a new phenomenon in the 1990s – the
identification of carvings which could be seen only in very particular lighting conditions. These included spirals and cup-and-ring marks on stones at Castlerigg stone circle, an incomplete spiral and other marks on three of Long Meg’s ‘daughters’, and a cup-and-ring mark on a cairn kerbstone at Moor Divock. At the same time, very clear examples were identified on the eastern margins of Cumbria at Stainmoor and, in 1998, the first landscape art to be identified in the Central Lake District, on outcrops in Patterdale, was reported by a local resident who discovered cup-marks whilst digging his rockery (Cook 1999). This discovery was closely followed by reports of complex geometric designs at Copt Howe in Great Langdale (Brown & Brown 1999). At around this time, Beckensall turned his attention to Cumbria, in 2002 publishing an account of 30 sites, covering 67 panels. Yet compared with neighbouring regions this was a small group. The range of panels was also very different to that of other areas, the majority having monumental associations with very few examples known from ‘landscape’ contexts. Further, the majority of panels were in low-lying, valley locations, contrasting with the generally upland, elevated positions of rock art elsewhere. A key question to be addressed by the present study therefore, was whether this dataset provided a true reflection of the nature and extent of Cumbrian rock art.
<table>
<thead>
<tr>
<th>Date</th>
<th>Discovery/key publication</th>
</tr>
</thead>
<tbody>
<tr>
<td>1789</td>
<td>Discovery of Viking burial at Aspatria</td>
</tr>
<tr>
<td>1794</td>
<td>Hutchinson’s History of Cumberland published</td>
</tr>
<tr>
<td>1820</td>
<td>Hodgson’s book published with note on cup-and-ring marks on the Asper’s Field stone at Shap</td>
</tr>
<tr>
<td>1835</td>
<td>Sir Gardiner Wilkinson describes the carvings on Long Meg.</td>
</tr>
<tr>
<td>1856</td>
<td>Sir James Y. Simpson publishes lithographs of Long Meg, Little Meg and the Asper’s Field Stone, and notes further carving on the Goggleby Stone.</td>
</tr>
<tr>
<td>1866</td>
<td>Founding of the CWAAS with inaugural address encouraging members to seek out new rock art panels</td>
</tr>
<tr>
<td>1872</td>
<td>Kirksanton cups identified by CWAAS member J. Eccleston,</td>
</tr>
<tr>
<td>1881</td>
<td>Redhills slab found by CWAAS member Dr Waistell-Taylor. Taylor also notes cup-marked stones in the Hugill settlement.</td>
</tr>
<tr>
<td>1888</td>
<td>Two cup-and-ring marked stones found at Maryport by Bailey.</td>
</tr>
<tr>
<td>1895</td>
<td>Fergusson (CWAAS President) publishes article on discoveries at Old Parks, including the first photographs of the stones in situ. The paper includes an overview of 9 sites (21 panels).</td>
</tr>
<tr>
<td>1900</td>
<td>Collingwood (Editor of Transactions) presents paper on Glassonby kerbed cairn.</td>
</tr>
<tr>
<td>1902</td>
<td>Thornley publishes paper in Transactions on Glassonby, Little Meg and Long Meg with ‘touched up’ photograph of Glassonby kerbstone.</td>
</tr>
<tr>
<td>1909</td>
<td>Major Spencer C. Ferguson finds Eden Hall stone whilst hunting otters. Stone moved to Tullie House Museum.</td>
</tr>
<tr>
<td>1918</td>
<td>Dean stone found in ploughed field by Mason.</td>
</tr>
<tr>
<td>1952</td>
<td>Inscribed cobble found at Broomrigg B by Hodgson.</td>
</tr>
<tr>
<td>1978</td>
<td>Excavation of Goggleby Stone by Clare.</td>
</tr>
<tr>
<td>1984</td>
<td>British Gas uncover stone during work at Stagstones Farm.</td>
</tr>
<tr>
<td>1987</td>
<td>Discovery of Tortie Cottage Stone by Mrs Jennifer Waldron.</td>
</tr>
<tr>
<td>1989</td>
<td>Frodsham publishes gazetteer with 18 sites and 25 panels.</td>
</tr>
<tr>
<td>1998</td>
<td>Patterdale outcrops identified by local resident and CWAAS Member Tim Cook.</td>
</tr>
<tr>
<td>1999</td>
<td>Copt Howe identified by Paul and Barbara Brown.</td>
</tr>
<tr>
<td>2002</td>
<td>Beckensall publishes volume listing 30 sites and 67 panels.</td>
</tr>
</tbody>
</table>
4.2 Questioning the data

The 2002 dataset indicated that, at least in terms of the number of recorded rock art sites, Cumbria was a poor relation compared to neighbouring counties, accounting for less than 5% of the 1600 panels estimated for England by the English Heritage *RAPP Report* in 2000. Further, in other parts of Britain and Ireland rock art tended to be found predominantly on boulders or outcrops in open-air contexts with few examples related to monuments, and were located primarily on marginal, elevated uplands. By contrast, in Cumbria very few panels had been identified beyond the small cluster of monument-associated art in the Eden Valley (see Table 4-2 and Table 4-3). But was this an accurate representation of rock art in Cumbria – either in terms of quantity, context or distribution? The identification of two major new sites in the three years prior to Beckensall’s publication suggested that additional panels might await discovery. Further, the new finds had been on hard volcanic outcrops and boulders in the Central Lake District indicating that the form and function of Cumbrian rock art may have extended far beyond that of the Eden Valley monuments. Equally, these new finds may have been isolated examples, and there may be legitimate reasons for the relatively low number of rock art panels in Cumbria, and its limited distribution and context. The following section considers the dynamics affecting the location, survival and discovery of rock art, and how they may have shaped the dataset, beginning with the fundamental question of quantity: why are there so few rock art panels in Cumbria compared to neighbouring regions? This question can be broken down into three areas for examination:

a) Was it there in the first place?

b) Did fewer panels survive?

c) Has it all been found?

### Table 4-2: Regional and contextual variation of Cumbrian panels known in 2002 based on Countryside Agency Character Areas.

<table>
<thead>
<tr>
<th>Region panel located</th>
<th>Monument</th>
<th>Landscape</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eden Valley</td>
<td>18</td>
<td>-</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>High Fells</td>
<td>8</td>
<td>6</td>
<td>-</td>
<td>14</td>
</tr>
<tr>
<td>West Cumbrian Coast Plain</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Orton Fells</td>
<td>4</td>
<td>-</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Low Fells</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Border Moors and Forests</td>
<td>-</td>
<td>4</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>North Pennines</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Solway Basin</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Morecambe Bay Limestones</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Howgill Fells</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tyne Gap and Hadrian’s Wall</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36</strong></td>
<td><strong>16</strong></td>
<td><strong>15</strong></td>
<td><strong>67</strong></td>
</tr>
</tbody>
</table>
Table 4-3: Comparison between rock art contexts in Northumberland and Cumbria based on 2002 data.

<table>
<thead>
<tr>
<th>contexts</th>
<th>Total no. panels</th>
<th>Monumental</th>
<th>Landscape</th>
<th>Other/re-used context</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northumberland</td>
<td>1069</td>
<td>181 (17%)</td>
<td>672 (63%)</td>
<td>216 (20%)</td>
</tr>
<tr>
<td>Cumbria</td>
<td>67</td>
<td>36 (54%)</td>
<td>16 (24%)</td>
<td>15 (22%)</td>
</tr>
</tbody>
</table>

4.2.1 Was it there in the first place?

It is possible that the small number of rock art panels recorded in Cumbria accurately reflects the fact that fewer carvings were produced in the region compared to other areas, perhaps due to different cultural preferences or simply a smaller population. Might differences in geology and topography between Cumbria and other rock art areas also account for the smaller number of carvings? It is argued that the reason rock art is generally confined to the north of Britain is that the geology south of Derbyshire would have been unsuitable. Until recently almost all the rock art recorded in England was on sandstone, from the soft red sandstone river cliffs at Morwick in Northumberland, through to the Millstone Grits of North Yorkshire and the greywacke6 outcrops of Galloway. Yet in Argyll, on Anglesey and on the Isle of Man, metamorphic schists were also a preferred medium, and although many of the panels in Cumbria were carved on the old red Permian sandstone of the Eden Valley, several exceptions are also known, with examples on extremely hard rocks such as Shap granite, and gabbro7 and the two new discoveries at Patterdale and Copt Howe are on stone from the Borrowdale Volcanic Series. Cumbrian geology is complex, ranging from the igneous and metamorphic rocks of the central plateau through to the sedimentary mudstones and shales of the south-east and around

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6 Greywacke is a term that refers to an immature sandstone, generally indurated, dark grey, and consisting of poorly sorted angular to subangular sand-sized grains.

7 Gabbro is a dark, medium to coarse-grained intrusive rock.
Carlisle, coal measures on the north-west coast, peripheral carboniferous limestone and red sandstone, and intrusions of granite (see Chapter 6 for a detailed discussion). There is little of the millstone grit preferred by neighbouring counties, but there is an abundance of alternative rock surfaces on which to carve. Many of these may be somewhat harder than sandstone yet the presence of rock art on granite and gabbro suggests this did not deter prehistoric carvers.

Might the relative paucity of sites in the region indicate a cultural difference? There is no evidence of a unique culture specific to the region, in fact quite the opposite appears to be the case, with a wide range of styles of pottery, stone tools, jewellery, monumental architecture, and indeed the rock art sites themselves suggesting that influences from around Britain had indeed permeated the area. The existence of widespread cultural exchange is also reflected in the distribution of Cumbrian Type VI stone axes which have been found across the British Isles.

Does the lack of rock art in Cumbria reflect a low population level in prehistoric Cumbria? This is a more persuasive explanation and is supported by the lack of settlement evidence for the early prehistoric period in the Central Lake District. The difficult terrain, harsh environment and thin soils of the higher fells could not have been attractive to settlers experimenting with agriculture. Although it is known that stone sources in the central massif were exploited throughout the Neolithic and Early Bronze Age (Bradley & Edmonds 1993) there is little evidence that the axe manufacturing communities lived permanently close to the quarry sites. Evidence from flint scatters suggests settlement was restricted to the coastal areas and the upland limestones of eastern Cumbria. However the picture is far from complete, and recent work suggests that some sites assigned to later periods may have in fact have Neolithic origins. If the presence of rock art is indeed directly related to the level of settlement then this may well explain the relative lack of examples in the central Lake District. Yet this is only part of the picture: why are there so few rock art panels on the south and west coast, or in the Solway basin where there is most evidence for settlement and cereal growing? It seems that neither cultural isolation, unsuitable geology, nor low population levels can wholly account for the rock art distribution in Cumbria, and an explanation must be sought elsewhere.

4.2.2 Did fewer panels survive?
There are many reasons why rock art may not have survived to the present day, but are there circumstances that make Cumbrian rock art particularly vulnerable compared to neighbouring regions? Three key factors determine the survival of carvings: the type of stone, the degree of exposure to natural erosive forces, and the amount of human intervention.

Motifs have survived well on volcanic stone at Copt Howe, and Patterdale - rock which is much more resilient than the millstone grits carved in the Yorkshire Dales, Northumberland and Durham. By contrast, any carvings on the softer carboniferous limestone which skirts the south and east of the county are likely to have eroded rapidly. Yet not all forms of limestone succumb to the elements, as demonstrated by clearly defined motifs on outcropping crags at Stainmore in the east of the county.
Chapter 4: Recognising Rock Art

The Cumbrian climate is renowned for heavy rainfall, but is comparable to that of the west coast of Scotland where many examples of rock art remain intact. The freeze-thaw process that can be extremely destructive to rock art, especially where it occurs on schist, is no greater threat in Cumbria than elsewhere in Britain. Indeed, carvings on the harder volcanic rocks of the Borrowdale Volcanic Series should be less prone than the millstone grits which can be severely affected by the forces of wind and water.

Could human factors then, have posed a particular risk to rock art sites in Cumbria? Although prehistoric monuments have suffered, monumental art has a better chance of survival than carved outcrops and boulders in the landscape. Where these obstruct ploughing or other development they are broken up, quarried and cleared away, used as building material for field walls, buildings and roads. So has the Cumbrian landscape been more intensively developed than elsewhere in Northern Britain? This is clearly not the case: large areas of the central Lake District are unsuitable for ploughing and settlement is relatively scarce. As in other regions, the National Park has controlled more recent urban development, and the major settlements of Carlisle, Barrow-in-Furness and Kendal are no larger than similar towns and cities in other parts of Britain. Although some, limited agriculture occurs in the lower Eden Valley and on the coastal plains, this is no more extensive than elsewhere. The majority of land is rough pasture and large expanses of upland moors (similar to the rock art hot-spots of the Yorkshire Moors or Northumberland) remain undeveloped. Substantial areas of the Lake District are managed by the Forestry Commission and plantations may have resulted in some loss of rock art, yet similar land management is practised in other counties. A reduced level of survival due to climate, geology or destruction therefore seems unlikely. Could it be that the Cumbrian dataset is simply less complete than the record for other areas?

4.2.3 Has it all been found?

Might it be that Cumbrian carvings are under-reported in comparison to other regions? Could current population and land usage be less intense and so have reduced the likelihood of chance discoveries? Or have there been less surveys compared with other areas with rock art? As noted, the rough terrain and inhospitable climate of the central fells has restricted settlement and land use, and many areas are visited only by farmers and fell-walkers. This may have limited the likelihood of chance discoveries. Given the clustering of known sites in the Eden Valley and particularly around Penrith, it could be argued that current population distribution lies behind the discovery of new panels. Yet similar concentrations of carvings are not seen around other urban centres such as Carlisle, Kendal, Keswick or Barrow-in-Furness.

The question of deliberately designed survey is somewhat different. Areas elsewhere in Northern Britain have been the subject of intense scrutiny: Ronald Morris researched sites in Galloway and Argyll (Morris 1970; Morris 1977; Morris 1979); Stan Beckensall did the same for Durham and Northumberland (Beckensall 1974; Beckensall & Laurie 1998; Beckensall 2001). Further south the
Ilkley Archaeology Group covered the West Yorkshire Moors (Boughey & Vickerman 2003) and the North York Moors have also been studied in detail, most recently following the devastating fire of 2003 as detailed in Chapter 2. On Tayside, a systematic survey by the RCAHMS of 68 km² along the north bank of Loch Tay added 107 panels to the 14 previously known (Hale 2003). No similar attention has been accorded to Cumbria; there have been no systematic surveys either by local groups or by professional bodies. As shown earlier in this chapter, most of the rock art panels in the county have been identified by chance, by independent individuals. The strong tradition of local amateur archaeological activity evinced by groups such as the CWAAS, has not been matched by professional interest in the region's prehistoric carvings.

The relative lack of rock art identified in Cumbria may therefore be a result of a combination of factors. The challenging topography may have deterred extensive prehistoric settlement and also limited the number of chance finds, and the lack of systematic survey may also be a key factor; however the rugged landscape has also prevented more recent development and exploitation of the landscape which may otherwise have destroyed more panels. Fieldwork described in Chapter 5 explores these issues further, but there is one more, fundamental question which must first be addressed: how reliable is the data so far recorded? Are all the motifs currently identified, truly prehistoric carvings? Is this an accurate picture of the rock art which survives in Cumbria? In order to answer these questions it was necessary to undertake a critical appraisal of all the published panels. On embarking upon this task it quickly became clear that the identification of prehistoric rock carvings is a complex process; the following section introduces some of the issues encountered.

4.3 Recognising rock art: identification of carvings by visual inspection

One challenge facing all rock art researchers is to distinguish between marks which may be:

- deliberately carved (with either 'prehistoric' or 'modern' origins);
- the result of other human or biological agency; or
- the result of natural geological processes.

In Chapter 2 we saw how the current record of British rock art has been compiled chiefly by knowledgeable, amateur researchers working independently, often on a very local basis. A small number of key individuals were responsible for verifying, recording and cataloguing panels, using techniques and experience built over many years. Simpson in the nineteenth century, and Morris and Beckensall in the twentieth, each developed their own sense of 'rock art' through extended exposure to an enormous variety of inscribed motifs, yet even these doyens of British rock art never claimed one hundred percent certainty when identifying carvings. Simpson was clearly aware of the problems, noting early in his 1867 publication that "In many cases it is difficult, and indeed impossible, to determine conclusively whether cup-excavations, when found alone, are the product of
human art or the product of nature" (Simpson 1867: 3). Beckensall is more confident, stating that "Those of us who have seen hundreds of cups are able to distinguish the natural from the artificial in almost all cases" (Beckensall 2002: 139). Distinctions of this nature were central both to the evaluation of the published dataset for Cumbria presented in Section 4.4, and to the identification and verification of new sites discussed in Chapter 5. In some instances features previously recorded as rock art were determined to have entirely natural origins. This should not, however, make these sites less relevant, since natural patterns were often incorporated and enhanced such that distinctions between 'natural' and 'artificial' become blurred. Yet, in order to carry out meaningful analyses it remains important to attempt to distinguish between those features which are entirely natural and those which have a degree of human input.

There are currently no agreed standards or diagnostic guidelines for identifying British rock carvings; the authenticity of carvings has been based on the evaluations of experienced protagonists'. Accumulated hands-on experience of rock art in the field certainly helps, particularly in recognising what is not rock art, yet the positive identification of simple motifs such as cup-marks remains a challenge and is inevitably subjective, relying on each researcher's particular experience, and knowledge of local practices and geology. No basis currently exists for comparison, either between sites or between study areas, and there is a clear need for a systematic and objective process of assessment which could be applied by any researcher with the same results. The following section considers some of the factors which make identification problematic and presents a new 'scoring' system which has been applied to all the 'cup-mark' panels discussed in this thesis. It is hoped that this will provide a common standard with which sites can be evaluated and compared in future rock art studies.

4.3.1 Deliberate carvings: prehistoric or not?
The enduring nature of stone has ensured a rich legacy of carvings in Britain, beginning with the Palaeolithic figures at Creswell Caves, and although the Neolithic and Bronze Age rock art that is the subject of this study accounts for the majority of the record it exists alongside later Romano-British figures and inscriptions, Pictish symbols, Norse runes and, ultimately, 'modern' graffiti. The determination of the age of carved images presents a major challenge for rock art researchers. Methods for dating stone surfaces are not readily available or reliable, so that indirect strategies are needed to untangle the chronology of carved surfaces which may comprise elements that have been added several centuries apart. There are three clues which may help to exclude non-prehistoric contributions: context, style, and superimposition. The context in which rock art is located, e.g. within a cist burial or a passage grave, may indicate its chronology although, as noted in Chapter 2, the potential re-deployment of earlier rock art in later monuments, or the possibility that carvings were added some time after the monument was built, makes this a contentious subject. Very few examples of rock art (and none of the Cumbrian examples) have been found in directly dateable

*Although this has not always been the case, with some examples published in local journals by relatively inexperienced individuals.
contexts as in the Dalladies long cairn (Piggott 1972), but relative dating can also provide information as was the case at Hunterheugh in Northumberland (see Chapter 2).

Perhaps the most frequently used method of judging the age of carvings is by comparing the content and style of the images with other examples of known date or, where possible, with the objects depicted. The inclusion of letters or inscriptions clearly post-dates the prehistoric period, and carvings of bronze axe-heads are certainly post-Neolithic. Depictions of human figures or faces, such as the image of local deity, Cocidius, found recently in Northumberland, are considered to date to the Romano-British period. Similarly, the animals and figures used in Pictish carvings do not occur in the ‘cup-and-ring’ or ‘passage grave’ repertoires, although elements of the more abstract symbols of Class I stones such as the ‘disc’ and ‘double disc’ have been compared with cup-and-ring motifs. The Aberlemno I stone near Montrose has abstract, circular Pictish symbols on one side (considered to date from the 7th century), and prehistoric cup-marks on the reverse, suggesting re-use of an earlier carved stone (Cummins 1999: 2-5). Scandinavian decoration also has many elements comparable with prehistoric art. In Cumbria, the Giant’s Grave in Penrith comprises a Norse cross and four stones covered with ‘cup-marks’ (Figure 4-10).

The method of execution may also provide clues, for example sharply defined carvings produced using a metal tool clearly post-date the Neolithic. A combination of content, style and context is usually sufficient grounds to exclude many otherwise ambiguous examples from the Neolithic/Bronze Age group, but one aspect which is unambiguous in the relative dating of rock art is the presence of superimposition, where more recent carvings overlap older images. Where detected, this can provide an invaluable method of determining the sequence in which individual elements were added to a panel, although it says little about the length of the intervening period.

![Figure 4-10: The ‘Giants Grave, St Andrews Church, Penrith. Hog-back and cross shaft decorated with ‘cup-marks’.

9 One particular cupule on the upper part of the cross has recently been suggested to be of prehistoric origin (Clare & Clarke 2004).
4.3.2 Prehistoric carvings: multiple forms

With more recent carvings excluded there still remains a diverse array of rock art forms produced during the prehistoric period. Even at the time of creation and prior to the effects of up to 6000 years of weathering, motifs must have had a range of appearances, depending on the surface chosen, the tools used, and the intent and skill of the artist. ‘Soft’ sedimentary materials such as sandstone and ‘hard’ igneous rocks like granite produce very different effects, with fine-grained stone producing a sharper outline than coarse, composite stone (Figure 4-11). Stone tools used to ‘peck’ the surface create different effects to metal ‘blades’ which may have been used to incise marks or score the surface (Figure 4-12), and the stone tools may themselves be of different shapes and sizes, so that peck marks may vary from clearly visible (several mm) to very fine. Some peck marks may have been deliberately smoothed whereas others were untouched. A further consideration is that motifs may not have been completed – a suggestion made for a number of sites where designs appear to have been ‘roughed out’ or where motifs appear unfinished.

Finally, there is enormous variation in the way in which similar motifs are presented with, for example, the grooves of some rings being very narrow and others much wider and less clearly defined. The spacing between rings may also vary, and some may be more symmetrical than others as is apparent within a single motif at Copt Howe in Cumbria (Figure 4-13). From the vantage point of the twenty-first century it is impossible to assess prehistoric rock art in aesthetic terms or to judge the ‘skill’ of individual carvers, and it is dangerous to make assertions about ‘finely’ and ‘crudely’ executed motifs. The differences in the presentation of motifs may reflect the skill, experience or simply the stylistic preference of the ‘artist’ – but may also be an artefact of the tools available or the geology of the rock surface. It must also be remembered that motifs may have been added over time, such that the ‘composition’ may have altered substantially with motifs added or ‘enhanced’ by several different carvers, and caution is needed in interpreting the overall design.

Figure 4-11: Rings on hard whinstone (left) appear different to rings on soft sandstone (right). Left: Little Meg kerbstone, Eden Valley, Cumbria. Right: portable cobble, Maryport, Cumbria. Photo: S. Hood.
4.3.3 Other marks produced by human or animal activity

Marks on rock surfaces are not always carved deliberately and may be the indirect result of other human or animal activities, either in the past or more recently. Simpson notes a number of examples of natural ‘cups’ including those on megaliths at Orme’s Head, Llandudno which he asserts were “the work of the Pholas” (1867: 4), a marine bivalve mollusc having a long shell with which it bores into wood, rock, and clay. Other marks with human or animal origins include:

a) plough marks, often found on boulders close to the ground and also confused with striations (see below);

b) quarrying marks - indentations where stone workers have inserted wedges to pry open strata,
4.3.4 Features created by natural physical processes

The features most often mistaken for rock art are those produced through natural geological processes, either during the formation of the stone, or through later glacial action or weathering. Simpson was aware of the dangers, noting that “all the cup-like excavations that we meet with on megalithic circles, monoliths, &c. &c., are not by any means the work of man. Many of them are, on the contrary, the work of nature; or in other words, the results of the weathering and disintegration of the stone from long exposure... Occasionally they are the result of the mineralogical constitution of the rock, as of soft portions weathering out, or of the enucleation of fossilized organic remains, or of imbedded stone nodules” (1867: 3-4).

Geological formation produces an enormous variety of patterns depending on the process involved, and the local conditions. Sedimentary structures such as cross-bedding and slumping can give the impression of human-made design, and metamorphic, igneous and mineralised structures such as veins, folding, baking or fracturing of the rock can also produce deceptive features (Figure 4-14 and Figure 4-15). The movement of glaciers over the surface of rocks and outcrops can result in the smoothing of the surface and the creation of scratches known as striations. Finally, the action of water (especially if acidic), wind, and changing temperature and humidity act may result in exfoliation or flaking of surface layers, and the dissolution of mineral concretions or release of pebbles from conglomerate creating solution hollows. Natural curves and grooves on upper surfaces may be enhanced by repeated water action, creating deep channels and cupules.

4.3.5 Inspiration, incorporation and enhancement

Yet greater complexity is introduced if it is considered that natural features may have been the inspiration for rock carvings, so that the presence of natural markings does not always indicate a natural origin for all marks in the locality. Geological patterns may be emulated by the carved motifs, and natural fissures and depressions may be incorporated. Instances where natural features are enhanced, for example with pecking used to widen, straighten or elongate a fissure, are particularly difficult to evaluate.
4.3.6 The effect of time

The variation in features discussed so far assumes they are examined 'as new', at the time of creation. If, indeed, they have prehistoric origins then they have been subject to up to 4000 years of exposure to weathering, and to biological and chemical damage. Despite the 'eternal' nature of stone, these powerful forces can make a major difference to the appearance of rock art in the twenty-first century. The damp North Atlantic climate is the greatest enemy of most British carvings. Precipitation and condensation result in erosion, leaving a porous skeleton of resistant material. Water occurring naturally within the rock is drawn to the surface where evaporation results in deposition of minerals, producing a hard corrosion-resistant 'crust'. The act of carving pierces this natural patina, exposing...
fresh rock to further weathering, and percussion from pecking techniques may cause micro-fractures. Accumulations of moisture in depressions focuses the effects of weathering thus carvings may initiate and accelerate their own destruction. Increased friability leaves the rock surfaces vulnerable to physical stresses such as abrasion or exfoliation, exacerbated by the 'freeze-thaw' cycle. These effects are clearly visible at sites such as Morwick Cliffs (Northumbria) where the sandstone is flaking, severely damaging motifs. Weathering may remove peck marks and obscure, distort or destroy motifs. The extent to which the rock art is affected depends upon:

a) geological composition and 'hardness' of the rock;
b) period of exposure - buried surfaces will clearly survive in better condition;
c) local environment of the rock – i.e. the elevation and orientation of the rock and position of vegetation which may produce water run-off or a protective canopy. On horizontal surfaces, water collecting in depressions may deepen or distort 'cups' or 'grooves'; and
d) microclimate (esp. humidity) at the rock surface - which may be protected by vegetation.

Erosion may be aggravated by the presence of organic life within, on or around the rock surface (which can support up to one million bacteria per gram of rock (Lambert 1989). Algae and fungi catalyse weathering processes by retaining water, and can also cause staining; lichens penetrate surface pores to extract minerals and secrete damaging oxalic acid. In the damp British climate, vegetation may create a dark, moist microclimate that encourages growth of microflora. Plant and tree roots also penetrate fissures causing splitting, and burrowing and nest-building insects, birds and animals can also be destructive (Rosenfeld 1988; Lambert 1989; MacLeod et al. 1995). Many British carvings are situated on land used to graze livestock, exposing them to rubbing, trampling and acidic excreta. All these factors may affect the appearance of any given rock surface: creating features which look artificial but also working to obscure, distort, or destroy both natural elements and carved motifs. The final canvas then, must be analysed with a strong degree of caution.

**Figure 4:16 Factors influencing the present-day appearance of rock art**
4.3.7 Measuring cups: natural or not?

Given the enormous variety of possible patterns, and the effects of weather, biology and human activity, is it possible to identify human-made carvings with absolute certainty? For panels with complex designs comprising concentric rings and spirals there can be little doubt of a human origin, but the majority of British rock art consists of much simpler motifs – cups and grooves. These require greater consideration before they can be firmly identified as 'rock art'. Cup-marks are the most common of all motifs in Britain, and indeed across the world. They are found in a variety of contexts – on outcrops, boulders, on standing stones, capstones, kerbstones, cist covers, and on portable cobbles. Cups vary in size and shape and may appear on vertical, horizontal or sloping surfaces. They occur both in random clusters and in patterns ('domino' or 'rosette' or lines), within motifs (e.g. 'cup-and-ring'), and may be linked or enclosed by grooves. They also occur in isolation, and panels with only a single cup-mark are possibly the most difficult to evaluate.

Cupules are also a very common geological feature, created by the differential weathering of spherical concretions formed within sedimentary rock such as shale and sandstone or in some weathered volcanic rocks. During the formation process, cementing material, commonly a carbonate mineral like calcite, precipitates locally around a nucleus, often organic, such as a leaf, tooth, piece of shell or fossil. Concretions vary in size, shape, hardness, and colour, from microscopic objects to huge bodies several metres in diameter and weighing several hundred kilograms. They frequently appear in nodular patches, concentrated along bedding planes. When the bedding plane is exposed, differential weathering may cause the minerals to dissolve, leaving behind a hemispherical depression (Figure 4-17). In sections parallel to cleavage, these appear near-circular, however in transverse sections they are markedly flattened as a result of compression.

Figure 4-17: Partially weathered natural cupules in Cumbria. Left: Elterwater (slate); and right Black Crag (Borrowdale Volcanic Series).

Throughout this text the term 'cupule' will be used to refer to geological cups or those whose nature has not been determined.
There are clearly a number of factors to consider when evaluating cup-marks. In 1867 Simpson noted that "various collateral circumstances often tend to evince their artificial origin". He listed four primary characteristics indicative of a human origin for cup-marks: “1. The limited size, regular, rounded forms, smooth surfaces, and shallow depths of the excavations; 2. Their existence upon the surfaces of rocks too hard to be weathered; 3. Their arrangements in rows or in other artificial positions and groupings not referrible [sic] to any mineralogical peculiarities in the stone; and 4. Their co-existence with other cups surrounded by single or multiple rings” (1867: 4). Although this list is helpful, there are a number of other characteristics which can assist in determining of the origin of cup-marks. These are distilled into the following diagnostic questions (Table 4-4) and scoring system (Table 4-5) which were developed based on observations in the field and discussions with other rock art researchers, including volunteers involved with the English Heritage recording project. The parameters for cup dimensions were based on measurements obtained for confirmed cup-marks on panels in Cumbria and Anglesey (full details are provided in Chapter 5). This system was applied to all ‘cup-marked’ panels appraised in this study. If the two initial questions did not provide a conclusive result then the scoring system was used to determine the probability that the cup(s) were either artificial (positive result) or natural (negative result). Panels scoring >+1 were categorised as rock art. The results of all evaluations are included in Appendix A.
### Table 4-4: Cup-marks: natural or not?

<table>
<thead>
<tr>
<th>1. Are peck marks clearly discernable?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YES</strong></td>
<td>The cup has been carved and can be positively identified as <strong>ROCK ART</strong></td>
</tr>
<tr>
<td><strong>NO</strong></td>
<td>This does not preclude the cup being rock art as cups may have been smoothed when first created or weathering may have smoothed the surface.</td>
</tr>
</tbody>
</table>

*Note: differential erosion of some rocks may result in surface texture resembling peck marks.*

<table>
<thead>
<tr>
<th>2. Are any of the cup surfaces occluded?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>YES</strong></td>
</tr>
<tr>
<td><strong>NO</strong></td>
</tr>
</tbody>
</table>

(see figure)
Table 4-5: Scoring system to assess the probability of cup-marks being of natural or artificial origin.

<table>
<thead>
<tr>
<th>Cups are more likely to be carved if:</th>
<th>Probability assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>They are incorporated into a complex design (e.g. concentric rings) or form a pattern (e.g. ‘domino’, ‘rosette’)</td>
<td>+1</td>
</tr>
<tr>
<td><strong>But</strong> natural depressions may inspire enhancement or be incorporated into complex designs. Linear formations may be the result of cups forming along bedding planes, and rosettes may be random.</td>
<td></td>
</tr>
<tr>
<td>They are within 50m of other confirmed prehistoric rock art</td>
<td>+1</td>
</tr>
<tr>
<td><strong>But</strong> natural markings may have inspired the selection of the known stones for carving</td>
<td></td>
</tr>
<tr>
<td>They are circular when viewed from above</td>
<td>+1</td>
</tr>
<tr>
<td><strong>But</strong> some oval cups are also known; two cups joined with a groove may have weathered to an oval shape.</td>
<td></td>
</tr>
<tr>
<td>They have a gently curving or conical, symmetrical cross-section</td>
<td>+1</td>
</tr>
<tr>
<td><strong>But</strong> cups on steeply sloping surfaces may have weathered through water collection to less symmetrical shapes</td>
<td></td>
</tr>
<tr>
<td>They are on a horizontal or gently sloping (&lt; 30 degrees) surface</td>
<td>+1</td>
</tr>
<tr>
<td><strong>But</strong> cups do sometimes occur on vertical surfaces</td>
<td></td>
</tr>
<tr>
<td>Cups are more likely to be geological if:</td>
<td></td>
</tr>
<tr>
<td>They have no archaeological context (e.g. monument, burial, finds)</td>
<td>-1</td>
</tr>
<tr>
<td><strong>But</strong> many examples of ‘open-air’ rock art are found in isolated locations with no context</td>
<td></td>
</tr>
<tr>
<td>They are within 50m of known geological cupules</td>
<td>-1</td>
</tr>
<tr>
<td><strong>But</strong> natural markings may have inspired the selection of the stones for carving</td>
<td></td>
</tr>
<tr>
<td>The diameter is less than 2 cm or greater than 10 cm</td>
<td>-1</td>
</tr>
<tr>
<td><strong>But</strong> ‘micro cups’ are known, as are ‘basins’.</td>
<td></td>
</tr>
<tr>
<td>The diameter : depth ratio is greater than 10 (very shallow) or less than 2 (very deep)</td>
<td>-1</td>
</tr>
<tr>
<td><strong>But</strong> weathering may have either reduced the depth (by erosion of the entire rock surface) or increased the depth through water collection in the cups</td>
<td></td>
</tr>
<tr>
<td>They have uneven or sharp surfaces or edges</td>
<td>-1</td>
</tr>
<tr>
<td><strong>But</strong> differential weathering my have resulted in the erosion of softer bedding planes resulting in an uneven appearance.</td>
<td></td>
</tr>
</tbody>
</table>

Probability assessment

```
+5   0   -5

< Increasing probability that cup(s) carved           Increasing probability that cup(s) geological >
```
4.4 Reappraisal of the published data

Given the challenges of rock art identification outlined in previous sections it was important to verify the prehistoric origin of those carvings so far recorded in Cumbria prior to any data analysis. The methodology used and results obtained are now presented, and suggest a somewhat different distribution to that published by Beckensall in 2002.

4.4.1 Data Sources

There are three key datasets of published information on rock art sites in Cumbria: two gazetteers (Frodsham 1989; Beckensall 2002) and the Sites & Monuments (SMR) databases for Cumbria and for the Lake District National Park\(^\text{11}\). Beckensall's catalogue includes all sites previously listed by Frodsham; the SMR dataset included two additional panels but did not list twenty of the Beckensall sites. An additional source, the Portable Antiquities Scheme database, included three panels, two of which were not listed elsewhere. An additional panel (unpublished) discovered during a visit to Penrith Museum is included in this section. During the course of this study details of a further five rock art panels were published in the Transactions of the CWAAS (Clare & Clarke 2004; Hood 2005), the journal which was the primary source for much of the data evaluated here. Collation of all the sources resulted in a dataset of 76 panels at 38 sites (see Table 4-6).

Table 4-6: Data sources (No. in parentheses indicates no. sites/panels not included in other listed sources)

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Sites</th>
<th>Panels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frodsham (1989)</td>
<td>19 (0)</td>
<td>29 (0)</td>
</tr>
<tr>
<td>Beckensall (2002)</td>
<td>30 (20)</td>
<td>67 (1)</td>
</tr>
<tr>
<td>SMR (June 2004)(^\text{12})</td>
<td>24 (2)</td>
<td>46 (3)</td>
</tr>
<tr>
<td>Published in Transactions since 1989</td>
<td>4 (4)</td>
<td>5 (5)</td>
</tr>
<tr>
<td>Portable Antiquities Database</td>
<td>3 (2)</td>
<td>3 (2)</td>
</tr>
<tr>
<td>Penrith Museum</td>
<td>1(1)</td>
<td>1(1)</td>
</tr>
<tr>
<td>Unique sites/panels</td>
<td>38</td>
<td>76</td>
</tr>
</tbody>
</table>

\(^{11}\) Searched June 2004.

\(^{12}\) Only records with specific reference to rock art panels are included here.
4.4.2 Methodology

Each panel was assigned a reference no. in the format CUnnnn, and was evaluated through site visits where possible, or by examination of photographs, drawings and original reports (see Table 4-7). Panels with motifs limited to simple cups were also assessed using the scoring system described in Section 4.3.7. A number of criteria were considered including:

- Context and provenance of the panel
- Overall design of motifs
- Technique used (pecked or incised)
- Presence of tool marks
- Morphology of motifs
- Geology of both panel and locale

Table 4-7: Locations of published panels and evaluation methods

<table>
<thead>
<tr>
<th>Locations</th>
<th>No. panels</th>
</tr>
</thead>
<tbody>
<tr>
<td>In situ (in landscape or monument)</td>
<td>52</td>
</tr>
<tr>
<td>Museums</td>
<td>12</td>
</tr>
<tr>
<td>Lost/private collection/location unknown</td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation method</th>
<th>No. panels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspected in situ</td>
<td>43</td>
</tr>
<tr>
<td>Inspected in museums</td>
<td>10</td>
</tr>
<tr>
<td>Assessed from photographs, recordings or text13</td>
<td>23</td>
</tr>
</tbody>
</table>

4.4.3 Results

Detailed descriptions of all the panels and cup-mark scores are included in Appendix A. A summary of the results of the appraisal is shown in Table 4-8. Panels confirmed to be prehistoric are not discussed here; rather I will focus on some of those found to have doubtful prehistoric or indeed human origin, or which could not be detected by visual inspection.

Table 4-8: Summary of results of appraisal of published data.

<table>
<thead>
<tr>
<th>Result</th>
<th>No. panels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total appraised</td>
<td>76</td>
</tr>
<tr>
<td>Motifs not detected</td>
<td>9</td>
</tr>
<tr>
<td>Motifs likely to be geological</td>
<td>12</td>
</tr>
<tr>
<td>Motifs likely to be post-prehistoric</td>
<td>2</td>
</tr>
<tr>
<td>Nature of motifs unresolved</td>
<td>17</td>
</tr>
<tr>
<td>Motifs confirmed likely to be rock art</td>
<td>36</td>
</tr>
</tbody>
</table>

13 Some panels are now lost; others are in private collections or access was not obtained for other reasons.
A number of carvings have recently been reported which, according to those who witnessed them, require very specific lighting conditions in order to be seen with the naked eye. All are on the uprights of stone circles – three at Castlerigg and three at Long Meg and Her Daughters. Although these have been recorded by Beckensall using the wax rubbing technique, attempts to duplicate this or to record the motifs by other, more objective methods have failed, raising questions about the nature of these elusive ‘carvings’.

The Castlerigg Spirals (CU0017 and CU0018; NY5520029900; SMR 3000)
In 1995 a spiral motif (Castlerigg 1, CU0017) was reported to be present on the flat internal face of stone #11 of the Castlerigg stone circle at the eastern end of the rectangular enclosure (Figure 4-19). The motif was identified by Nick Best and Neil Stevenson, then students at Newcastle University, who photographed it in the late afternoon winter sunlight. It was also photographed independently by Hannah Casement of Eskdalemuir, a few days before the Autumn Equinox in the same year (Frodsham 1996: 112; Beckensall 2002: 74). Beckensall produced a rubbing of the spiral which he used to create a drawing (Figure 4-21). He explains: “The spiral was revealed after many attempts at rubbing the surface gently with wax crayon on thin, strong newsprint, although the motif remained unseen” (ibid.). The published figures shows the motif abutting parallel geological linear markings to the left of the panel. It has a clockwise direction (opposite to those on Long Meg and Little Meg) with six convolutions. Comparison of the colour photograph with the rubbing and drawing reveals a number of inconsistencies:

a) The spiral in the Stevenson photograph does not appear to match the Beckensall drawing. The ‘groove’ of the spiral in the drawing is much wider and the spacing pattern is very different.

b) The resolution of surface detail and texture is very poor in the photograph, yet the spiral is visible for at least four turns, even where it crosses lichen and areas of surface colour change.

c) The shadow of the ranging pole indicates that the sun was illuminating the face of the stone straight-on laterally, the worst possible angle to create shadows and enhance any ‘depth’ changes across the surface. The shadow of the photographer is not visible, so the sun must have been fairly high, yet the horizontal sections of the carving are no more distinct than the vertical sections.

d) The scale on the Beckensall drawing, indicating a diameter of over 2 m, is clearly inaccurate. The entire panel is approximately 1.5 m tall and 1.2 m wide and the ranging pole in the photograph indicates a diameter of no greater than 0.6 m.

A second spiral motif (Castlerigg 2, CU0018) was recorded by Paul and Barbara Brown on the inner face of one of the stones of the enclosure. The SMR record states that the stone is “completely lichen covered” and the spiral “could be natural”. Beckensall notes that “although the outer circle is clear, and the groove appears to be curling into a spiral form, the centre is on uneven rock and may be unfinished, spoiled or natural” (2002: 74).
Chapter 4: Recognising Rock Art

Figure 4-19: Looking east into the enclosure showing stone #11.

Figure 4-20: The spiral on stone #11 captured by digital photography on the left by Hannah Casement and on the right by Neil Stephenson (Beckensall 2002: pl.18 and fig. 82). The faint spiral can be seen to the left of the ranging pole.

Figure 4-21: Recording at Castlerigg: left: 'Rubbing' in progress; centre: original rubbing; and right: drawing produced by Beckensall (Beckensall 2002: figs. 83 and 85).
Site visit

Neither spiral was apparent by visual inspection, fingertip survey\(^{14}\) or wax rubbing (Figure 4-22). Laser scanning carried out by Durham University\(^{15}\) in 2004 failed to detect either motif (Diaz-Andreu et al. 2006). Further techniques of ground-based remote sensing including infra-red and ultra-violet photography, and laser profiling (Figure 4-23) were also applied to stone #11 by specialist Dr Chris Brooke of Nottingham University. Despite extensive efforts no spiral was detected, although use of oblique lighting did highlight modern graffiti which appears to overlap the area of the spiral (Figure 4-24). Photography experts Maggie and Keith Davison (web ref #9) have also tried a number of methods to capture the spirals. Figure 4-25 shows their photograph which uses oblique lighting to highlight any motif present on the second spiral stone. They also attempted to directly compare their own photograph with the published version using lichen as reference points. They explain that “After doing flicker comparison by strobing the top image on and off, we have to say that we could not see anything on our photos that coincided with the spiral” (2006, pers. comm.).

It is a natural tendency of the human brain to seek patterns in the small variations of colour and depth across the surface of the stone. This need within the human psyche to create order from chaos introduces a highly subjective element into the recording process and gives good reason for the adoption, where possible, of more objective recording methods.

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\(^{14}\) A group of blind and partially sighted visitors to the site was asked to feel the surface of the stone but could detect nothing, despite their expertise in Braille.

\(^{15}\) The author was employed as RA on this project, *Breaking through Rock Art Recording*, which was supported by an AHRB Innovations Award (Diaz-Andreu et al.: 2006).
Chapter 4: Recognising Rock Art

Figure 4-23: Images from the ground based remote sensing survey. (Figures courtesy of Dr Chris Brooke).

Figure 4-24: Oblique lighting on stone #11 highlights graffiti but no spiral.

Figure 4-25: Second enclosure stone (CU0018) with reported spiral motif. Photograph produced using oblique lighting (web ref #9).
Long Meg’s Daughters (CU0014, CU0015, CU0016; NY5693037160; SMR 6154)
The concentric circles and spirals on the Long Meg standing stone are well documented, but no motifs had been found on any of the uprights of the stone circle until one winter afternoon in 1999, when Steven Hood and Dave Hankin identified markings on three of the prostrate stones to the north of the circle. Beckensall confirmed the markings; his recordings are shown in Figure 4-26. A colour plate of one of the spirals is also published in the Beckensall catalogue (Figure 4-27).

Site visit
The site was visited on a winter afternoon with low sunlight. The three stones in question were located close to the ditch of the large enclosure which abuts the circle (Figure 4-28). No carvings could be discerned either by visual inspection or by wax rubbing. This may be due to the presence of lichen on all three stones but it was felt that the markings may in fact be geological fissures and contours which, under certain lighting conditions, give the appearance of carved motifs.

Figure 4-26: Features recorded on the ‘daughters’ at Long Meg, after Beckensall (2002: figs. 75 and 76).
Figure 4-27: Long Meg No. 7 (CU0016) from Beckensall 2002 plate 15. Carved spirals or geology?

Figure 4-28: Location of marked stones recorded by Beckensall at Long Meg & Her Daughters. After Soffe & Clare (1988).
Motifs observed but believed to be natural features

In several cases features identified as motifs were clearly visible, but their identification as carvings was doubtful. Instead they were considered to be either the result of geological processes, or formed by natural surface contours enhanced by shadows.

Shap Avenue: the Goggleby Stone, the Asper's Field Stone and the Small Thunder Stone

These three stones are believed to be part of the Shap Avenue stone alignment, the southern terminus of which is believed to be the Kemp Howe stone circle. The record regarding rock art is currently confused: the Asper's Field Stone and the Goggleby Stone both appear in Beckensall (2002) and were previously described by Simpson (1867) but only the Goggleby Stone is listed on the SMR (no. 3001). A third megalith, the Small Thunder Stone is described as 'decorated' on the SMR (no. 16839), but is not included by Beckensall. A new cup-marked panel has recently been identified very close to the Asper's Field Stone; this is discussed in Chapter 5. Burl believes the 'decoration' on both the Asper's Field and Goggleby stones to be “questionable” (Burl 1993: 74). Beckensall's interpretations are shown in Figure 4-29.

The Goggleby Stone (CU0040; NY5592015090; SMR 3001)

The stone is 3 m tall and 5.5 m in circumference. References describe a shallow 'saucer' of 14 cm diameter, with a smaller 'disc' below it on the north-east face. The larger feature is described as rather than a cup-mark; Simpson believed it to be "the remains...not of a cup, but of a worn-out ring-cutting" (1867: 22). The stone was excavated and re-erected in 1975 by Clare (1978); finds included chert and a flint scraper.

The Asper's Field Stone (CU0041; NY5600015300)

Simpson describes this stone as an “oblong massive block, about nine feet high and five feet broad, now half fallen..." having “...on its flattish top...one cup six and a half inches broad, and one and a half inches deep; and a second cup nearly three inches in breadth, three quarters of an inch deep, with a single ring nine inches in diameter, cut around it" (1867: 22).

The Small Thunder Stone (CU0042; NY5517015920; SMR 16839)

This is included in the SMR record as the most northerly of the Shap Avenue stones, and is located in the same field as an enormous erratic boulder, 'The Thunder Stone'. It is not included by Beckensall or Frodsham and no reference to it could be found elsewhere in the literature.
Chapter 4: Recognising Rock Art

Site Visit

The stones lie in pasture to the west of the village of Shap (Figure 4-30). All are granite blocks, probably sourced locally. The Goggleby Stone is easily identified by its distinctive shape – described by Burl as an ‘aubergine’ but also resembling an upturned stone axe-head (Figure 4-31). On close inspection neither the ‘saucer/ring’ nor the smaller ‘cup’ showed any indication of having been artificially created and appear to be geological features. In both cases the edges are uneven and slope of the sides of the saucer are vertical in places. Both features rated -2 on the scoring system. This is not to say that they were not significant to the builders of Shap Avenue. Similar markings, likely to be the result of surface weathering, are present on many of the stones which make up the Long Meg circle; and example is shown in Figure 4-32. Inspection also suggested that the features recorded on the Asper’s Field Stone are created by the natural geological contours (Figure 4-33). The dark ‘polished’ outline of the ring (worn due to visitors touching it?) enhances its appearance but there is no evidence that this is anything other than geological; the large hollow to the right also appears to be natural. The SMR entry for The Small Thunder Stone appears to have been an error; no evidence of any decoration could be determined. This may be a result of confusion with the Asper’s Field Stone which is not included in the database.

Figure 4-29: Beckensall recordings of the Goggleby Stone (left) and the Asper’s Field Stone (right) (2002: fig. 136)

Figure 4-30: Panorama showing Goggleby stone (left) and Asper’s Field stone (left) with fells in distance to the north-west.
Figure 4-31: The axe-shaped Goggleby stone and detail of the 'saucer'.

Figure 4-32: Natural marking comparable to the Goggleby Stone on one of Long Meg's Daughters.
Hardendale Cairn Circle (Iron Hill South) (CU0066: NY596147)

Beckensall lists a cup-marked boulder in this cairn circle, one of a group of four similar funerary monuments situated on a ridge of limestone lying just east of Shap village. This area has been much explored by Cherry and Cherry (1987), and a number of waste flint flakes were found in the immediate vicinity of the cairn. The site was categorised by Thom (1967) as an ellipse, measuring 8.5 by 7.5 megalithic yards (7.1 m by 6.2 m). Nine large stones surround a low mound, with three smaller ones in the centre. These may have formed the cist which was excavated some time prior to Simpson’s inspection in the mid-nineteenth century at which time he reported that the cist had contained the bones of “a man of great stature”, and deer antlers “much larger than those of our days” (Simpson 1860).
Site visit

The marked boulder, designated no. 6 by Waterhouse (1985: 133), is the only sandstone rock amongst the stones, the rest being Shap granite. It has a number of hollows which appear to be the result of natural weathering, although the lichen covering made evaluation difficult. The depressions rated zero using the scoring system, but as with the Shap stones this boulder may have been selected because of these natural features.

Figure 4-35: Hardendale cairn circle, showing position of marked stone.

Figure 4-36: Kerbstone with natural hollows at Hardendale.

Moor Divock 1 and 2 (CU0038 and CU0039, NY494220)

Beckensall notes a cup-and-ring carving (CU0038) on an upright of a kerbed cairn on Moor Divock, and a cup-marked slab (CU0039) lying within the same cairn (2002: 101). The cairn is one of several aligned from east to west across the moor; the area also boasts a stone circle (‘The Cockpit’), possible stone rows, several burnt mounds, two ‘star-fish’ cairns, and a number of possible hut circles – all evidence of repeated use during the prehistoric period (Clare & Wilkinson 2006). The monument in

16 This use of a single ‘odd’ stone is also seen at Gamelands stone circle (NY640082) across the fell near Orton where a single block of weathered white limestone is conspicuous amongst 39 pink granite uprights.

17 This area in the north east of the Lake District was the focus of the survey described in detail in Chapter 5.
question, known as ‘Cairn 4’ (Waistell Taylor 1886), comprises ten large stones set in a bank of smaller stones and measures approximately 11.5 m across. It was excavated in 1866 by Canons Greenwell and Simpson (Greenwell 1874: 19) who found an intact food vessel, some burnt adult bones, and further fragments of a second vessel but did not note any carvings despite their familiarity with rock art in the area.

![Figure 4-37: Cup and ring marked kerb stone recorded by Beckensall (2002: fig. 124).](image)

**Site visit**

The cup-and-ring mark recorded by Beckensall was not apparent, even in optimum conditions of low, oblique sunlight; no evidence for pecking was detected. The stone had a very rough surface and the impression of a motif is created by the shadows cast by the natural contours (Figure 4-39). The cup-marked slab in the same cairn is less easy to verify but is perhaps more likely carved given the precedent for such portable cobbles in cairn material, but the panel did not closely match the Beckensall illustration, comprising two cups rather than one (Figure 4-40). It rated +2 using the scoring system.

![Figure 4-38: Impression of cup-and-ring motif at Cairn 4, created by shadows.](image)
Castlerigg 3 (CU0019; NY292236; SMR 3000)

This partial cup-and-ring feature on stone #5 of the Castlerigg stone circle was identified and recorded by Beckensall (2002: 74-76). It is described as an elongated ring with diameter 0.3 m x 0.5 m on the upper left corner of the interior face of the upright; the top left quadrant is absent.
Site visit

The feature was not immediately apparent but became visible after rain when the wet surface was more reflective. The stone shows no obvious sign of quarrying to explain the missing quadrant, instead having weathered, rounded edges. The surface of the groove is extremely uneven and the motif may be the result of natural indentations. The small central ‘cup’ is in fact created by a natural dip in the surface and is not circular.

Figure 4-42: Detail of stone #5 at Castlerigg showing impression of a cup-and-ring motif.

Castlerigg 4 (CU0020; NY292236; SMR 3000)

This ‘hatching’ pattern on the internal face of stone #10 was identified by Nick Best and Neil Stevenson. Beckensall believes that the pattern runs contrary to the direction of the bedding plane and is therefore artificial: “There are natural deposition lines in the stones, and the lozenge has been incised deeper into these” (2002: 74).

Figure 4-43: Castlerigg 4 (stone #10). Left: Beckensall interpretation (2002: fig. 84); right: photograph with oblique lighting (web ref #9).
Site visit
The close proximity of the next stone (part of the rectangular enclosure) suggests that, if not natural, the lines must have been carved prior to the construction of the enclosure. However there are many natural grooves running across this stone and it is unlikely that these markings are artificial.

Po House (CU0045; SD1466881975; SMR 19311)
This panel in the south-west of the county was identified by Sharon Croft, and included by Beckensall in his catalogue (2002: 114); it also appears on the Sites and Monuments Record. It is described as marking the position of a spring. No drawing has been published and Beckensall includes only a close-up photograph, noting that “The cups, in a line, are much wider than usual” (ibid.).

Photographic Evidence
Photographs of the panel (e.g. Figure 4-44) obtained by local rock art enthusiast Stephen Hood were reviewed. These showed the whole surface of the boulder and indicate that the cupules, which are asymmetrical, are likely to be a natural geological feature. A series of grooves run parallel suggesting that erosion has resulted in the differential weathering of inclusions in the rock producing linear arrangements along the bedding planes. The panel rated zero on the scoring system.

Gawthwaite (CU0068; SD327203486437; SMR19312)
This site, also identified by Sharon Croft, was not covered by Beckensall, but is included in the Sites and Monuments Record. Two boulders are described as “heavily cup-marked”.

Site visit
The stones lie at the edge of a small lane to the north of Gawthwaite in the south-west of Cumbria. The ‘cup-marks’ were found to be uneven with occluded surfaces (Figure 4-45) and determined to be natural solution holes and not prehistoric carvings.
Dean Capstone (CU0074: NY0745025100)

This panel near the village of Dean in west Cumbria was reported (and published) by Stephen Hood who describes it as a large sandstone slab measuring 100 x 80 x 14 cm and having a "very uneven surface" (Hood 2005: 1). A rubbing was made by Hood (Figure 4-47) who asserts that it reveals "the faint remains of some concentric design toward the lower right of the stone" (ibid.). Worked chert chippings were found in the vicinity.

Site visit

The stone was found to be partially submerged in water flowing from a spring (an ancient well lies nearby). Examination of the surface produced no evidence of carving or of the slab being used as a 'capstone'. The undulating surface appeared entirely natural, being significantly weathered by water. The panel rated zero on the scoring system.
Studfold Gate 1 and 2 (CU0075 and CU0076; NY040223)

Hood also noted markings on two of the stones of the Studfold Gate stone circle on the western coastal plain (Hood 2005). One prostrate stone (#4) was described as having ‘chevron’ markings and a second nearby upright boulder (#6) was reported to have a deep horizontal groove mid-way up its outer face. The small stone circle (25.9 x 32.8 m) comprises fifteen sandstone boulders, five remaining upright, and one being incorporated into the base of the wall which bisects the circle from north to south. The central cairn (7 m dia.) to the west of the wall is considered unusual in a circle of this size – perhaps a later addition (Waterhouse 1985: 71-73). Examination of the mound in the 1920s failed to produce any archaeological material (Mason 1923).

Figure 4-47: The Dean ‘capstone’.

Figure 4-48: Rubbing of Studfold Gate stone #1 after Hood (2005: fig. 6).
Site visit

The chevron markings on stone #4 (Figure 4-49) appeared to be a natural feature, possibly produced by geological compression of the rock during formation. No peck marks could be discerned. The groove on stone #6 (Figure 4-50) is also likely to have a geological origin, and may be the result of the differential weathering of a band of relatively soft stone. As with the other examples in megalithic contexts, these natural marks may have been significant to the builders of the site.

Figure 4-49: Chevron patterns on stone at Studfold Gate.

Figure 4-50: Horizontal groove at Studfold Gate stone circle.
Photo: S. Hood.
Motifs believed to be human-made but not prehistoric

Three panels recorded as prehistoric rock art may in fact be of historic date, based on observations of either the style of the motifs or the technique employed.

Broomrigg (CU0036; SMR 759; NY54804660)

The Broomrigg 'plaque' is included by both Frodsham (1989: 9) and Beckensall (2002: 99) and is listed in the SMR database. It is a small (14 x 11 cm) sandstone cobble found in cairn material excavated at Broomrigg in the 1950s (Hodgson & Harper 1950; Hodgson 1952) but no firm context is recorded. The excavation covered four cairn circles of various types, a Bronze Age habitation site, and a Beaker burial. The plaque was found in material from Broomrigg B, the smallest of the cairn circles at 3.4 m across. It is decorated with an 'XIX' figure and has been suggested by Frodsham to be of possible Roman origin (1989: 9). The stone is now held in storage at Tullie House Museum in Carlisle.

Site visit

The incised lines appeared to form a geometric pattern rather than Roman numerals (Figure 4-51). A Roman origin was also considered unlikely by Museum Curator Tim Padley (a Roman specialist). This carved stone does not fit within the tradition of prehistoric rock art and its provenance remains unresolved.

Figure 4-51: Broomrigg 'plaque' with interpretation from Hodgson (1952, fig.12).
Castlerigg 5 (CU0021, NY292236; SMR 3000)

This lozenge motif is located on the upper surface of stone #27 at Castlerigg, on the west side of the circle opposite the enclosure. It was recorded by Beckensall (Figure 4-52) and has been photographed using oblique light (Figure 4-53).

![Figure 4-52: Beckensall interpretation of lozenge on stone #23 (2002: fig. 84)](image)

![Figure 4-53: Lozenge on stone #27 at Castlerigg. Photo: web ref #9.](image)

Site visit

This 'lozenge' is very different to that on stone #10 (see above), having distinct lines on a relatively smooth and unmarked surface. It is well-defined and likely to have been incised using a metal tool, and therefore created at some time after the prehistoric period.

Aspatria (CU0064 and CU0065; NY74134185; SMR 601)

The first 'ancient art' to be identified in Cumbria remains something of a mystery, with both decorated stones from the Aspatria Viking burial lost long ago. Only the eighteenth century sketches and descriptions provided by Major Hayman-Rooke can provide clues to their original provenance (Rooke 1792). As noted in 4.1.1, the carved figures have similarities with Scandinavian rock, suggesting they were contemporary with the burial, but as with all other cist burials, questions must be asked about the origin of the stones: might they have been re-used from an older burial site, from a kerbed cairn, or perhaps even from a landscape location? This was the belief of Ferguson (1901: 242), and of Simpson & Thawley (1972: 91) who all suggest a prehistoric origin for the carvings.
Chapter 4: Recognising Rock Art Motifs, Monuments and Mountains

The description by Rooke is brief: "On these stones are various emblematic figures in rude sculpture, though some of the circles are exactly formed, and the rims and crosses within the circles are cut in relief. On the stone I at (a) are marks which resemble an M and a D, but whether they were intended for those letters is doubtful" (Rooke 1792: 113). The drawing made by Rook and published in 1792 is shown in Figure 4-54. A ‘cleaned-up’ version of stone ‘I’ appears in Simpson (1867: fig. 43), in Ferguson (1872: fig. 41), and most recently in Beckensall (2002: fig. 173). The Beckensall version is shown in Figure 4-55.

The carvings include a variety of circular and linear motifs having stylistic affinities with a range of traditions. The concentric rings and ‘cup-and-ring’ designs are abundant within the corpus of prehistoric art in Britain but also appear in Scandinavian art where they represent shields (Figure 4-56). Circles with crosses, so-called ‘sun-wheels’, are a common motif in Scandinavian rock art (Figure 4-57) but are extremely rare in Britain and Ireland. The linear grids, parallel lines and ‘flower’ motifs are found in the passage grave tradition, for example on the ‘Equinox’ Stone at Cairn T, Loughcrew (Figure 4-58), but occur less frequently elsewhere. The linear designs are also rare in the Scandinavian corpus, but do occasionally occur in British open-air contexts. A further complication is the presence of radial grooves: these are strongly associated with the cup-and-ring tradition but uncommon in either Scandinavian or passage grave art.

A detailed assessment of the carvings was carried out by Petts (2002) who focused on the observation by Rooke that “the rims and crosses within the circles are cut in relief”. Whilst not discounting an early date for the cup-and-ring motifs, Petts suggests that the circles with crosses closely resemble motifs inscribed onto early Christian monuments in Western Britain, from the 7th to the 9th centuries. His assertions are based on the ‘false-relief’ used in such carvings (as opposed to the ‘simple, inscribed’ lines of prehistoric motifs), and the rarity of such symbols in prehistoric art (he notes just five examples). He also comments that although the ‘circle and cross’ motif appears in Scandinavian rock art, this tradition is “entirely independent of the Atlantic rock art tradition [which has] an entirely different symbolic repertoire” (ibid.: 104). He supports his argument with other examples where early medieval carvings have been added to prehistoric motifs, citing examples from Argyll and Northumberland, but perhaps more convincing is evidence from other burials where stones bearing early Christian carvings were re-deployed in Viking graves, with similar juxtapositions of Christian and Viking symbology common at sites across Cumbria, the Isle of Man and Argyll.

With the stones lost, firm conclusions are impossible, but perhaps these panels reflected a series of traditions, with the composition of motifs accumulated over a long period and through several episodes of use prior to their inclusion in the Viking cist. The absence of superimposition prevents the construction of a chronological sequence, but these boulders clearly demonstrate the complex and changing role of carved motifs.
Figure 4-54: Aspatria cist stones as depicted in Rooke (1792: fig. opposite page 112).

Figure 4-55: Aspatria Stone ‘I’ as depicted in Beckensall (2002: fig. 173).

Figure 4-56: Figures with shields. Left: Tanum 18; right: Tanum 90. Photos: web ref: #11.

Figure 4-57: Scandinavian ‘Sun wheels’. Left: Tanum 157; right: Vivebroggaard, Norway. Photos: web ref: #11.
Figure 4-58: Flower motifs on the Equinox Stone, Cairn T, Loughcrew. Photo: Philip Deakin.
A changing picture

The results of this appraisal suggest that previous assumptions about the distribution and context of Cumbrian rock art may have been based on unsound data with only 36 (47%) of the 76 panels being confirmed as likely to be prehistoric rock art. A further 17 (22%) were found to be of questionable origin and could not be confirmed with any certainty, and 23 (30%) were judged likely to be either geological, post-prehistoric or undetectable. If the questionable panels are excluded from the dataset, the balance between monumental and landscape contexts shifts a little towards that shown for other counties such as Northumberland (Table 4-9). In order to test these observations (and to expand the somewhat reduced dataset) measures were taken to locate new examples. The approaches used and the resulting discoveries are presented in the next chapter.

Table 4-9: Comparison between rock art contexts for Cumbria for original dataset, for confirmed panels, and for Northumberland dataset.

<table>
<thead>
<tr>
<th></th>
<th>Total no. panels</th>
<th>Monumental</th>
<th>Landscape</th>
<th>Other/re-used context</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original dataset</td>
<td>76</td>
<td>39 (51%)</td>
<td>16 (21%)</td>
<td>21 (28%)</td>
</tr>
<tr>
<td>Confirmed panels</td>
<td>36</td>
<td>16 (44%)</td>
<td>12 (33%)</td>
<td>14 (22%)</td>
</tr>
<tr>
<td>Northumberland(^\text{18})</td>
<td>1069</td>
<td>181 (17%)</td>
<td>672 (63%)</td>
<td>216 (20%)</td>
</tr>
</tbody>
</table>

\(^\text{18}\) Based on searches of the Beckensall Archive database.
Chapter 5
Developing the Picture
New reports, targeted surveys and recording

It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.

Sherlock Holmes in Sir Arthur Conan Doyle’s ‘Scandal in Bohemia’

The discoveries in 1999 of carvings at Patterdale and Copt Howe suggested that further examples of rock art may await discovery in Cumbria, and that earlier conclusions about the nature and distribution of rock art in the county were premature. The two new sites proved that the hard, volcanic rocks of the Lake District presented no problem to prehistoric carvers and indicated that communities were active in the central valleys despite the paucity of other archaeological evidence. In addition, the appraisal of published sites presented in Chapter 4 suggested that a number of carvings claimed at monumental sites, (including stone circles at Castlerigg, Long Meg & Her Daughters and Hardendale, and the Shap Avenue stones), were in fact geological features. The net effect of the new discoveries and the data appraisal was to shift the ratio of ‘landscape’: ‘monumental’ panels from 1:2.5 (prior to 1999) to 1:1.3. It was therefore important to clarify the emerging picture and, if possible, expand the dataset prior to any analysis of the area as a whole. The following chapter describes measures taken to identify new sites in Cumbria and presents the results of these efforts. A key strategy was to increase awareness amongst the general public and establish a focus for the reporting of new finds. A second approach was to explore sources of information less direct than those discussed in Chapter 4. In both cases, resulting leads were followed up by site visits and panels were verified and recorded. Section 5.1 presents the results and discusses some of the issues arising. More proactive methods of targeted survey are described in Section 5.2, with the characteristics of known sites, both in Cumbria and elsewhere in Britain, used to predict the likely locations of new panels. Finally, Section 5.3 describes the techniques used to record the new panels and discusses their relative merits.

5.1 New Reports

As noted in Chapter 4, many Cumbrian rock art panels were discovered by chance, and by local people: amateur enthusiasts, and land owners, often (although not always) with an interest in archaeology. A key strategy throughout the project therefore was to encourage such discoveries by increasing awareness and establishing a point of contact both for private individuals and for the various local archaeology professionals who might also receive information. Direct contact was also made with known rock art enthusiasts or finders of rock-art sites, identified through popular websites such as The Modern Antiquarian (web ref #1). In most cases this was followed by useful meetings,
Chapter 5
Developing the Picture
New reports, targeted surveys and recording

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field visits and numerous reports of potential rock art panels. Rock art specialists working elsewhere in Britain were also requested to pass on any new information concerning possible rock art panels in Cumbria. In addition, contact was maintained with the concurrent English Heritage pilot project in Northumberland and Durham, including involvement in a number of field visits and attendance of several volunteer training sessions.

Table 5-1: Professional contacts established

<table>
<thead>
<tr>
<th>Contact</th>
<th>Role</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jo Mackintosh</td>
<td>SMR Officer</td>
<td>Cumbria County Council</td>
</tr>
<tr>
<td>John Hodgson &amp;</td>
<td>Archaeologist</td>
<td>Lake District National Park Authority</td>
</tr>
<tr>
<td>Eleanor Kingston</td>
<td>HER Officer</td>
<td>Lake District National Park Authority</td>
</tr>
<tr>
<td>Jamie Lund</td>
<td>Archaeologist</td>
<td>National Trust</td>
</tr>
<tr>
<td>Judith Clarke</td>
<td>Curator</td>
<td>Penrith Museum</td>
</tr>
<tr>
<td>Tim Padley</td>
<td>Keeper of Archaeology</td>
<td>Tullie House Museum, Carlisle.</td>
</tr>
<tr>
<td>Dot Bruns</td>
<td>Portable Antiquities Officer</td>
<td>Portable Antiquities Scheme</td>
</tr>
<tr>
<td>Richard Hall</td>
<td>Archivist</td>
<td>County Archives, Cumbria County Council</td>
</tr>
<tr>
<td>Aaron Watson</td>
<td>Researcher</td>
<td>Independent</td>
</tr>
<tr>
<td>Helen Loney</td>
<td>Researcher (Matterdale)</td>
<td>Glasgow University</td>
</tr>
<tr>
<td>Stan Beckensall</td>
<td>Rock art researcher</td>
<td>Independent amateur</td>
</tr>
<tr>
<td>Tertia Barnett</td>
<td>Project Officer</td>
<td>Durham &amp; Northumberland Rock Art Project</td>
</tr>
<tr>
<td>Tim Laurie</td>
<td>Rock art researcher</td>
<td>Independent</td>
</tr>
<tr>
<td>Paul Brown</td>
<td>Rock art researcher. Identified Copt Howe, and Beckstones.</td>
<td>Independent</td>
</tr>
<tr>
<td>Aron Mazel</td>
<td>Rock art researcher</td>
<td>Newcastle University</td>
</tr>
<tr>
<td>Sharon Arrowsmith</td>
<td>Researcher (SW Cumbria)</td>
<td>CWAAS SW Group</td>
</tr>
<tr>
<td>Tom Clare</td>
<td>Lecturer in Environmental Archaeology (Previously County Archaeologist)</td>
<td>Liverpool John Moores University</td>
</tr>
<tr>
<td>Kevin Mounsey</td>
<td>Archaeology contractor</td>
<td>North Pennines Archaeology Limited</td>
</tr>
</tbody>
</table>

Table 5-2: Amateur contacts established

<table>
<thead>
<tr>
<th>Contact</th>
<th>Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gavin Parry (aka Fitzcoraldo)</td>
<td>Regular contributor to TMA website (web ref #1) and British Rock Art Blog (web ref #2). Identified panel at Shap.</td>
</tr>
<tr>
<td>Stephen Hood</td>
<td>Identified markings on Long Meg’s daughters, at Studfold Gate and at Dean.</td>
</tr>
<tr>
<td>Gabriel Blamires</td>
<td>Retired historian, researching prehistoric route-ways in Langdale</td>
</tr>
<tr>
<td>Richard Stroud</td>
<td>Volunteer on Northumberland and Durham Rock Art Project.</td>
</tr>
<tr>
<td>Brian Kerr (aka rockartwolf)</td>
<td>Regular contributor to TMA website (web ref #1) and British Rock Art Blog (web ref #2). Identified new panel at Gillalees.</td>
</tr>
<tr>
<td>Nicola Bisset</td>
<td>Appleby Archaeology Society. Identified portable cup-marked stone at Ravenstonedale</td>
</tr>
<tr>
<td>Tim Cook</td>
<td>Identified panels at Patterdale</td>
</tr>
<tr>
<td>Adam Stanford</td>
<td>Amateur enthusiast organising field visits for archaeology students: ‘Archaeology Safaris’ (web ref #12)</td>
</tr>
</tbody>
</table>
In order to raise the profile of rock art in Cumbria, and enlist the help of interested local amateurs, two presentations were given at the Lake District National Park Archaeology Annual Conference (Nov 2004 and Nov 2005), each followed by short articles in the CWAAS Newsletter (Spring 2005 and Spring 2006). The conferences resulted in a number of useful contacts and reports of potential new sites, and were followed up by talks to several local societies (Table 5-3). Other local contacts were achieved through participation in a ‘Researcher in Residence’ scheme at the Ullswater Community College, Penrith, working with students studying ‘A’ Level Archaeology, and through membership of the Eden Archaeology Action Committee, convened to oversee the ‘Living Among the Monuments’ community project which included an exhibition, a programme of illustrated talks, and a field-walking project in the Eden Valley.

### Table 5-3: Talks given on Cumbrian rock art

<table>
<thead>
<tr>
<th>Date</th>
<th>Event/ Group</th>
<th>Location</th>
<th>Title of Talk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov 2004</td>
<td>Lake District National Park Authority Archaeology Conference</td>
<td>Troutbeck</td>
<td>‘Breaking through Rock Art Recording: 3D Laser recording of rock art in Cumbria’</td>
</tr>
<tr>
<td>Nov 2005</td>
<td>Lake District National Park Authority Archaeology Conference</td>
<td>Troutbeck</td>
<td>‘Rock Art in Cumbria: Context and Connections’</td>
</tr>
<tr>
<td>Nov 2005</td>
<td>Border Archaeological Society</td>
<td>Berwick Upon Tweed</td>
<td>‘Rock Art in Cumbria: Context and Connections’</td>
</tr>
<tr>
<td>Apr 2006</td>
<td>Upper Wharfedale Field Society</td>
<td>Kettlewell</td>
<td>‘Rock Art in Cumbria: Context and Connections’</td>
</tr>
<tr>
<td>Nov 2006</td>
<td>Appleby Archaeological Society</td>
<td>Appleby</td>
<td>‘Measuring Cups: Geology and Ideology in a Lakeland Landscape’</td>
</tr>
<tr>
<td>Nov 2006</td>
<td>Living Among The Monuments: Illustrated Talk</td>
<td>Penrith</td>
<td>‘These Curious Marks: Two centuries of rock art discovery in Cumbria’</td>
</tr>
<tr>
<td>Jan 2007</td>
<td>Wigton Archaeological Society</td>
<td>Wigton</td>
<td>‘Rock Art and Rough Outs’</td>
</tr>
</tbody>
</table>

A second strand of investigation involved following up leads from sources other than the published catalogues and heritage databases. References to ‘marked stones’ were encountered in a number of less formal sources, including guide books, popular (non-academic) web-sites, and archives, as well as in journal papers relating to sites or topics unrelated to rock art.

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1. Sponsored by the Arts and Humanities Research Council
2. Funded by the Heritage Lottery
Each potential new panel was assigned a unique reference number (following on from the sequence used for the published panels in Chapter 4), and a database was maintained. Where possible a photograph and detailed description was obtained for initial assessment. Panels were then visited and verified in the field and recording forms completed. Cup-marked stones were assessed using the guidelines detailed in Chapter 4, and detailed results are included in Appendix A. Panels considered likely to be rock art were fully recorded (see later in this chapter) and are detailed below; summary records included in the Appendix were created for those panels deemed unlikely to be rock art.

5.1.2 Methodological Issues

Amateur groups and individuals with an interest in rock art are valuable resources for conducting the sort of fieldwork necessary to identify new panels, as amply demonstrated by the English Heritage project in which used volunteers to survey and record rock art in north-east England with impressive results. An important factor in the English Heritage project which ensured an accurate and complete record was the training provided — not only in recording techniques but also in the initial identification of the rock art. As shown in Chapter 4 verification of carvings is complex, requiring an understanding of local geology and appreciation of the variation possible in both natural and carved features. In Cumbria, many of the early reports from members of the public related to markings which were geological in nature, and much time was spent in the field locating and checking panels, some in remote areas. For this reason, and the limited resources available for field-visits, several additional planned initiatives (for example a press release, appeals to local climbing and rambling groups, and posts on relevant websites) were not pursued. Further, talks to local groups were adapted to include a ‘training’ session exploring the issues of geological markings and showing several examples, and the ‘scoring system’ made available. Audiences were also advised that when reporting a new discovery they should supply both a photograph with a scale (to help eliminate obviously geological features at an early stage), and a grid reference (to reduce time spent locating panels). For the current project, reports of new panels were prioritised and those comprising motifs more complex than a single cup-mark, or in a monumental context were investigated first. A number of stones with single ‘cup-marks’ are still to be checked in the field.

5.1.2 Results

The strategies described above produced significant results, with a total of thirty-two potential panels reported between Jan 2004 and March 2007. A further six were identified in other sources such as published literature and web sites (which were monitored for new additions). Of the twenty-eight panels evaluated, seven (25%) were determined likely to be rock art and fifteen judged very likely geological. One panel referenced in archive papers could not be located due to recent forestry work, two were considered to be post-prehistoric, and the nature of two remains unresolved. The new rock art panels and possible (unresolved) examples are described below. Details of all the panels are included in Appendix A.

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3 An adapted version of the English Heritage Rock Art Recording Form was used to ensure compatibility with records for Northumberland and Durham should a national database ever be produced.
Table 5-4: Summary of results for potential new panels.

<table>
<thead>
<tr>
<th>Total potential panels</th>
<th>38</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reported to author</td>
<td>32</td>
</tr>
<tr>
<td>Found in literature/other sources</td>
<td>6</td>
</tr>
</tbody>
</table>

**Evaluation Method**

- Visited in the field: 23
- Evaluated from photographs: 5
- Not yet evaluated (at March 2007): 10

**Result of evaluations**

- Very likely to be rock art: 7
- Very likely to be geological: 15
- Post prehistoric carving: 2
- Not found: 1
- Unresolved: 3

Table 5-5: New and unresolved panels identified following public appeals and from other sources.

<table>
<thead>
<tr>
<th>Evaluation = probable</th>
<th>Ref</th>
<th>Site</th>
<th>Grid ref</th>
<th>Description</th>
<th>Reported by/source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CU0084</td>
<td>Shap Avenue</td>
<td>NY55821529</td>
<td>Fallen upright with single cup</td>
<td>Gavin Parry</td>
</tr>
<tr>
<td></td>
<td>CU0087</td>
<td>Low Park</td>
<td>NY14802030</td>
<td>Outcrop with cups and grooves</td>
<td>Steven Hood, Tim Sowerton</td>
</tr>
<tr>
<td></td>
<td>CU0088</td>
<td>Gilallees 5</td>
<td>NY57107080</td>
<td>Cupules on boulder</td>
<td>Richard Stroud</td>
</tr>
<tr>
<td></td>
<td>CU0090</td>
<td>Syke Farm</td>
<td>NY17231696</td>
<td>Multiple cups on slate outcrop</td>
<td>Niall Hardie-Hammond</td>
</tr>
<tr>
<td></td>
<td>CU0095</td>
<td>Side Pike</td>
<td>NY28650558</td>
<td>Multiple cups on boulder</td>
<td>Gabriel Blamires</td>
</tr>
<tr>
<td></td>
<td>CU0096</td>
<td>Broadgate Park</td>
<td>NY33850776</td>
<td>Multiple cups on outcrop</td>
<td>Liz Clay</td>
</tr>
<tr>
<td></td>
<td>CU0107</td>
<td>Burthalyp Howe</td>
<td>NY33700790</td>
<td>Single cup-mark on outcrop</td>
<td>Adam Stanford</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation = possible</th>
<th>Ref</th>
<th>Site</th>
<th>Grid ref</th>
<th>Description</th>
<th>Reported by/source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CU0078</td>
<td>Lowick Common</td>
<td>SD28008420</td>
<td>Two cups on block in enclosure</td>
<td>Robert Harris (2002: 94)</td>
</tr>
<tr>
<td></td>
<td>CU0091</td>
<td>Greystoke Estate</td>
<td>NY41403120</td>
<td>‘Chevron-covered boulder’</td>
<td>Kevin Mounsey</td>
</tr>
<tr>
<td></td>
<td>CU0093</td>
<td>Elterwater 2</td>
<td>NY32300425</td>
<td>Two cups on outcrop</td>
<td>Paul Brown</td>
</tr>
</tbody>
</table>

Panels determined to be rock art

The following sites are considered very likely to be prehistoric rock art and so were fully recorded using the recording form plus other graphical methods, described later in this chapter. The new panels at High Park, Syke Farm, Side Pike, and Broadgate Park are discussed in greater detail in Chapter 7.
Shap Avenue, Shap (CU0084; NY5582015290)

Identified by: Gavin Parry. Reported directly to the author.

Date checked: 25 Feb 2005

Initial observations: The stone is located to the west of and adjacent to the Asper's Field stone but is not included in those listed by Clare (1978) as forming the Shap Avenue. It currently lies flat and partially covered by turf, the exposed, slightly rounded surface measuring 1.0 m by 0.65 m. A large cup-mark at the western edge has a diameter of 19 cm, and depth of 6 cm. The cup-mark is not heavily weathered and peck marks are clearly visible, such that the scoring system was not required. A second, 'D'-shaped cup measuring 7 cm by 5 cm is located at the eastern end of the stone, also having visible peck marks.

Figure 5-1: Cup-marks on prostrate stone at Shap.
Low Park, Crummock Water (CU0087; NY14802030)

Identified by: Stephen Hood and Dr Tim Sowerby (independently). Reported to Stan Beckensall.

Date checked: 27 February 2005

Initial observations: The outcrop is located close to a footpath leading from the hamlet of Low Park to the shore of Crummock Water. This substantial outcrop of Skiddaw Slate is peppered along the upper part of its glacially-smoothed surface with approximately 100 cup-marks, ranging from 2 to 18 cm in diameter, and up to 6 cm in depth. Although peck marks are not visible, a number of elongated ovals (linked cups?) and linear (domino) arrangements of cups support a human origin for the cups, which appear smooth and symmetrical with no occluded surfaces.

Figure 5-2: Cup-marked outcrop near Crummock Water
Chapter 5: Developing the Picture Motifs, Monument, and Mountains

Syke Farm Campsite, Buttermere (CU0090; NY1723516965)

*Identified by:* Niall Hardie Hammond. Reported to Dr M. Diaz-Andreu.

*Date checked:* 7 May 2005

*Initial observations:* The panel is located on the ‘Buttermere Delta’ a piece of land which now separates the lakes of Buttermere and Crummock Water. It comprises a small area (1.4 m x 0.7 m) of exposed bedrock at the foot of a larger slate outcrop in the Syke Farm campsite. Fourteen cup-marks are visible, appearing to extend beneath the turf. The cupules appear symmetrical and smooth, with no occluded surfaces; no peck marks are immediately visible. One ring-like motif may be an incomplete cup with the centre not removed. No similar markings were found on the surrounding outcrop. Cup mark score: +2.

![Cup-marks on outcrop at Buttermere](image)

Figure 5-3: Cup-marks on outcrop at Buttermere
Side Pike, Great Langdale (CU0095: NY28650558)

**Identified by:** Gabriel Blamires. Reported directly to the author.

**Date checked:** 27 Apr 2006

**Initial observations:**
This boulder is located in a small larch wood in Great Langdale, close to a path leading from the Dungeon Ghyll National Trust camp site towards Side Pike. The boulder has a flat, slightly sloping upper surface covered with at least 30 cup-marks measuring 3-6 cm in diameter and up to 3 cm in depth. Only the upper surface is marked. The cups appear symmetrical and smooth, with no occluded surfaces; no peck marks are visible. None of the surrounding boulders bore similar markings. Cup-mark score: +2

![Figure 5-4: Cup-marked boulder at near Side Pike. Lower photo: Gabriel Blamires.](image-url)
Broadgate Park, Grasmere (CU0096; NY3385207767)

Identified by: Liz Clay. Reported at an illustrated talk by Professor Richard Bradley in Penrith, (part of the Living Among the Monuments Project), and also to rock art researcher Aaron Mazel.

Date checked: 01 June 2006

Initial observations: The outcrop of Borrowdale Volcanic stone is located in Broadgate Park, overlooking a car park in the town of Grasmere, and is surrounded by vegetation and partially covered by turf and moss. It is marked along its upper, smoothed surface with a large number of cups which vary in diameter from 3 to 12 cm, the deepest being 2 cm. No peck marks are visible, although the coarse, pitted nature of the surface prevented a clear determination. The cups are symmetrical, and some dumb-bell motifs are present, affirming a human origin. No occluded surfaces were noted.

Figure 5-5: Cup-marked outcrop at Broadgate Park, Grasmere.
Burthalyp Howe, Grasmere (CU0085; NY33700790)

**Identified by:** Adam Stanford (Archaeology Safaris). Reported directly to the author.

**Date checked:** 01 June 2006

**Findings:** A potential cup-mark is located on outcrop in the grounds of Grasmere Youth Hostel at Burthalyp Howe by Adam Stanford. Although the single cup may have geological origins, its close proximity to the confirmed panel in Broadgate Park (CU0096) means that it cannot be discounted. Cup-mark score: +3.

![Figure 5-6: Single cupule at Burthalyp Howe, Grasmere. Photo: A. Stanford.](image-url)
Gillalees 5, Gillalees Farm (CU0088; NY571708)

Identified by: Brian Kerr. Reported to the author and posted on the *Modern Antiquarian* web site (web ref #1).

Date checked: Checking in the field was not possible so the evaluation was made from photographs.

Findings: This is the fifth carved stone to be identified in the vicinity. Motifs are limited to simple cup-marks which scored +3. Brian Kerr also identified a previously unrecorded cup-and-ring motif on Gillalees 4. These stones were not recorded during this study.

Figure 5-7: Gillalees 5 showing relationship with cairn. Photos: Brian Kerr.
Panels which remain unresolved

The following sites could not be confirmed as prehistoric rock art but for various reasons cannot be discounted. They were recorded using the recording form and by photography only. Summary records are included in the Appendix.

Lowick Common (CU0078; SD28008420)

Identified by: Reference found in Ancient Walks in Lakeland by Robert Harris (2002: 94)
Date checked: 28 Feb 2005
Findings: The cup-marked slab described in the book was located within an undated circular enclosure on Lowick Common to the south east of Gawthwaite. It is accessed via an uncleared boulder field where several boulders display natural cupules. The flat upper surface of the slab had two circular depressions of around 5 cm diameter. The deeper of the two appeared to be a natural solution hollow but the second, shallower and more symmetrical cup scored +1 using the evaluation scale. It is possible that this was carved, inspired by the existing natural cupule.

![Figure 5-8: Slab at Lowick Common with natural solution hollow and possible cup-mark.](image-url)
Greystoke Estate, Greystoke (CU0091; NY41403120)

Identified by: Kevin Mounsey (North Pennines Archaeology).

Date checked: 07 Mar 2006

Findings: The site was visited (with the permission of Neville Howard) in very wet conditions with poor light and a complete assessment was difficult, however a photograph (Figure 5-9) taken by the finder in excellent light shows the markings clearly. The chevron pattern does not appear to be pecked. Several other nearby stones were observed to have similar parallel lines. The markings do not appear to be the result of geological processes, either from folding, weathering or glacial action. Neither do they seem to be the result of ploughing or other agricultural machinery. None of these account for the dual direction of the lines or the neat 'v' at the apex of the chevron. Perhaps the most likely explanation is that the stone was used for 'polishing', the fine lines suggesting a metal tool but this is difficult to confirm. The surrounding fields are filled with banks (the stone forms part of a linear bank), lynchets and other undated features but only one earthwork appears on the SMR – a medieval rectangular, ditched enclosure. There has clearly been a significant amount of activity in this pasture and it is possible that the chevron pattern, if human-made, is not prehistoric.

Figure 5-9: Unusual chevron pattern on boulder in earthworks on the Greystoke Estate. Photo: K. Mounsey.
Elterwater 2 (CU0093; NY32300425)

Identified by: Paul Brown.
Date checked: 24 July 2006
Findings: The outcrop is located at the eastern end of a bridleway connecting the village of Elterwater in Great Langdale with the valley of Little Langdale. A number of natural cupules are scattered across this and other nearby outcrops. Brown believes that at least two of the cupules have been enhanced (P. Brown, 2006 pers. comm., 16 Jul 2006). Certainly two, possibly three, cupules appear to be larger, shallower, and more symmetrical than those around them however it is extremely difficult to verify the presence or extent of any such enhancement, so this panel must be treated with caution. The panel also has a number of grooves which may also have been enhanced. A surveying mark on the eastern edge is clearly of historic origin. The two largest cups scored +1 on the evaluation scale.

Figure 5-10: Cupules on outcrop near Elterwater showing two cups which may be carved.
Chapter 5: Developing the Picture

Motifs, Monuments and Mountains

Figure 5-11: Partially weathered cupule near Elterwater

Chance discoveries such as those described above form the bulk of the rock art record in Britain, but these can tell us only so much about the true distribution of surviving carvings. The following section presents a more proactive approach, with targeted surveys designed to test models based on known sites, both in Cumbria and in neighbouring counties.

5.2 Targeted Field Surveys

In addition to establishing the validity of known panels and expanding the dataset, it was important to understand how accurately the resulting data reflected the true picture of rock art in Cumbria. Targeted surveys were therefore designed to test the significance of observations relating to the position of sites within the landscape. Two field surveys were undertaken in order to address the following specific questions relating to the context and possible connections of rock art in Cumbria:

I) Connections: does the north-eastern 'landscape' tradition of cup-and-ring carving in the neighbouring counties of Durham, West and North Yorkshire, and Northumberland, extend into the central Lake District?

II) Context: can factors common to the known Lake District landscape sites be used to predict the location of additional sites?

Note: the surveys were planned and undertaken in parallel with the fieldwork carried out to appraise known panels and verify new panels, and were designed based on the data available at the outset of the project.
5.2.1 Establishing a methodology

Very few surveys have been undertaken in Britain which had the specific aim of identifying new rock art, the majority of panels having been identified by chance, by local amateurs or land-owners. Where surveys have been undertaken, as in West Yorkshire, the North Yorkshire Moors and, most recently, in Northumberland and Durham, the primary aim has been to locate and record known examples, with any new discoveries a fortunate by-product. Systematic rock art surveys are also uncommon elsewhere in the world, with projects rarely targeting discrete areas to identify new carvings. A search of the literature reveals that the term ‘survey’ is generally taken to mean the recording of all the rock art in an area with known sites. No information could be found regarding ‘rock art-free’ areas which had been checked. Whitley’s *Handbook of Rock Art Research* (2001) which offers advice on recording, dating, and management of rock art, has nothing to say on strategies for the identification of new sites. It seems the rock art record is based primarily on chance discoveries, sometimes followed by searches of the immediate vicinity. This was the case with one formally documented British project. The presence of twenty-one carved stones on the slopes above the northern shore of Loch Tay prompted the RCAHMS to commission a survey of an area of 68 km², resulting in the identification of a further 100 marked panels. The published report (Hale 2003) does not include details of the survey methodology but discussion with the Project Director revealed that an approach of ‘intelligent walking’ was employed with participants traversing the area at intervals, inspecting all boulders within view (A. Hale, pers. comm. 2006).

Literature searches also failed to locate any examples of rock art surveys based on predictive landscape models. The Cumbrian surveys were therefore designed using general approaches borrowed from other areas of archaeological fieldwork. In each case, the objective was to develop a model of a particular tradition of rock art through a consideration of landscape characteristics common to panels in that tradition. The model was then tested by surveying new areas having similar characteristics and so predicted to have a high likelihood of surviving rock art. Survey areas were specifically selected to match the criteria of the model and random controls were not required. The terrain (few hills or gulleys) and vegetation (limited trees and moss, low ground cover) within the areas chosen ensured that boulders and outcrops were clearly visible and the small transects (no more than 4 km²) meant that every individual stone (excluding cairn-material) and outcrop could be systematically examined, and so no statistical sampling techniques were applied.

5.2.2 Survey I. Connections: ‘Eastern Influences’

The tradition of decorating boulders and outcrops in the open landscape with cup-and-ring designs extends across a large part of Northumberland, Durham, North and West Yorkshire and southern Scotland, and hundreds of panels have now been identified (Morris 1979; Ilkley Archaeology Group & Hedges 1986; Beckensall & Laurie 1998; Beckensall 2001; Brown & Chappell 2005). Examples in this style are known in the far north of Cumbria at Gillalces Farm, in the north-east at Tortie Cottage (Figure 5-12), and on the eastern border at Leonard’s Cragg. Yet, at the outset of the present project, very few ‘cup-and-ring’ designs had been identified in landscape locations in the central Lake
District. Of the panels confirmed to be rock art (see Chapter 4) only those at Patterdale and at Copt Howe were known in the High Fells area, neither having strong parallels elsewhere either in terms of landscape context or motif composition. Both sites were located close to the valley floor, in contrast to the majority of rock art in neighbouring counties, found predominantly on upland moors—a type of landscape which is plentiful in the Lake District. A survey was therefore designed to test whether the north-eastern traditions of carving cup-and-ring motifs on stones in upland locations continued beyond the peripheral sites at Gillalees, Tortie Cottage and Leonards Cragg, into similar locations further west.

![Figure 5-12: Cup-and-ring marked stone at Tortie Cottage, typical of the north-eastern tradition of carvings in elevated positions.](image)

**Developing the model**

Extensive recording work undertaken in northern England has provided sufficient data for common characteristics to be observed in the distribution of rock art in the landscape. If these traditions extended into the central Lake District then areas with similar qualities might reasonably be expected to have rock art. The following factors appear significant to the distribution of rock art in the landscape of northern Britain:

1) **Relative elevation.** Although allowance must be made for the presence of agricultural and other land use which may have destroyed lowland examples, the majority of carved stones in northern England are located on marginal land of upland moors. In the West Riding of Yorkshire, 79% of 620 sites measured (Boughey & Vickerman 2003: 35-36) occurred between 200 m and 350 m OD, a band
lying between 45-77% of the maximum height of the moor at 450 m OD. Analysis of data from the Beckensall Archive shows a similar pattern for Northumberland. Elevation data are included for 693 of the 1069 panels on the database. Here, the panels are spread over a much greater and more geographically diverse area, and analysis is best based on local clusters. In the parish of Chatton, for example, of the 149 panels with recorded elevations, 70% are located between 125 and 175 m OD, in an area where the highest point is around 250 m OD.

2) Views: The elevated position of the majority of panels, and the nature of upland moors in the twentieth century – i.e. a low cover of heather, bracken and sedges – means that the carved stones usually afford extensive views. A heavily wooded landscape would have severely restricted views, and knowledge of local prehistoric vegetation would be necessary to confirm that this was a significant factor in their location, but studies of the extent of views from carved stones do suggest a significant degree of selectivity (Bradley 1993; Bradley 1997: 81-89; Van Hoek 2001), with carved panels preferentially located at positions with extensive view-sheds.

3) Thresholds and margins. Bradley observed that cup-and-ring marked stones are typically found on elevated, marginal land fringing fertile valleys, on the edge of settled land (Bradley 1997). This model has been further explored by Waddington who argued that these upland locations may have been utilised in very different ways to the lower ground, being more suitable for hunting or herding stock than for cereal cultivation. In the Milfield Basin, for example, where the central plain was the focus for Neolithic settlement and cultivation, cup-and-ring marked stones are located on the surrounding sandstone escarpments (Waddington 1996; Waddington 1998).

4) Prehistoric context. Many examples of British rock art are found close to other prehistoric remains, for example cairns (both clearance and burial), stone circles, field systems and settlements. The intense fire on the moor at Fylingdales in North Yorkshire revealed large numbers of carved stones but also a number of prehistoric features (Brown & Chappell 2005). Similarly work in Northumberland at Chatton Sandyford revealed a possible relationship between carved stones and burial cairns (P. Deakin 2005, pers. comm.). At Lordenshaws, also in Northumberland, carved outcrops are situated close to a number of cairns including some ‘tri-radial’ in design. Tim Laurie has also observed a relationship between the location of carved rocks and burnt mounds in Swaledale, both being closely related to the position of springs (Laurie 2004).

5) Route-ways: most carved panels are found in regions where mobility continued to be important long after other areas in which people became more settled and sedentary. The selective positioning of rock art on relatively high ground, often with extensive viewpoints and along putative ‘route-ways’ between known areas of activity such as ritual complexes all point to some degree of relationship between rock art and movement through the landscape. Decorated panels are also often found overlooking natural harbours as in Galloway (Morris 1979; Bradley 1993), at the entrances to possible key routes inland, close to mountain passes and along the edges of valleys such as Tayside in.
### Table 5-7: Elevation of panels in West Yorkshire and Chatton Parish, Northumberland, expressed as a percentage of the maximum local elevation.

<table>
<thead>
<tr>
<th>Elevation bands as % of max elevation</th>
<th>W. Yorkshire (n=620; max elev.=450 m OD)</th>
<th>% of total panels</th>
<th>Chatton Parish (n=149; max. elev. =250 m OD)</th>
<th>% of total panels</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-9</td>
<td>1</td>
<td>0.16</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10-19</td>
<td>3</td>
<td>0.48</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>20-29</td>
<td>35</td>
<td>5.65</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>30-39</td>
<td>33</td>
<td>5.32</td>
<td>1</td>
<td>0.67</td>
</tr>
<tr>
<td>40-49</td>
<td>39</td>
<td>6.29</td>
<td>10</td>
<td>6.71</td>
</tr>
<tr>
<td>50-59</td>
<td>209</td>
<td>33.71</td>
<td>44</td>
<td>29.53</td>
</tr>
<tr>
<td>60-69</td>
<td>147</td>
<td>23.71</td>
<td>59</td>
<td>39.60</td>
</tr>
<tr>
<td>70-79</td>
<td>137</td>
<td>22.10</td>
<td>23</td>
<td>15.44</td>
</tr>
<tr>
<td>80-89</td>
<td>15</td>
<td>2.42</td>
<td>9</td>
<td>6.04</td>
</tr>
<tr>
<td>90-100</td>
<td>1</td>
<td>0.16</td>
<td>3</td>
<td>2.01</td>
</tr>
</tbody>
</table>

![Figure 5-14: Elevation of panels in West Yorkshire and Chatton Parish, Northumberland, expressed as a percentage of the maximum local elevation](image)

### Applying the model in Cumbria

The landscape panels known on the northern and eastern fringes of Cumbria, (beyond the Eden Valley) fit the above criteria very well but the discoveries made in the central Lake District prior to this study, at Patterdale and at Copt Howe in Great Langdale, contrasted markedly with this model. Although these new sites were located close to natural route-ways, they were situated in valley bottoms, had view-sheds limited by steep valley sides are were remote from other prehistoric archaeological features. This disparity in the choice of location could not be for purely topographical reasons: the county of Cumbria has many upland moors similar to those found in Northumberland, Durham and Yorkshire. Could the fact that so little rock art had been recorded in such landscapes in Cumbria be because they had not been surveyed? (Panels in more populated valley bottoms are more...
easily discovered by chance). The aim of Survey I was therefore to test whether the north-east tradition evident at the three peripheral sites extended any further into Cumbria, or whether these panels were best considered as part of the Northumberland, Durham and West Yorkshire traditions, with the Eden Valley perhaps marking the geographical limit of this particular form of rock art.

Table 5-8: Landscape position of 'landscape' art known in Cumbria at the time of the survey.

<table>
<thead>
<tr>
<th>Site (no. panels)</th>
<th>Elevation (m OD)</th>
<th>Views</th>
<th>Route-ways</th>
<th>Prehistoric activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leonards Cragg (1)</td>
<td>275</td>
<td>Extensive, west.</td>
<td>Major cross-Pennine gap (Stainmore)</td>
<td>RB settlement and field system.</td>
</tr>
<tr>
<td>Gillalees (4)</td>
<td>220</td>
<td>Extensive, south</td>
<td>Not known</td>
<td>Five possible burial mounds</td>
</tr>
<tr>
<td>Tortie Cottage (2)</td>
<td>260</td>
<td>Fair</td>
<td>Not known</td>
<td>One stone was an upright (so not strictly a 'landscape' context.</td>
</tr>
<tr>
<td>Patterdale (4)</td>
<td>160</td>
<td>Limited</td>
<td>Kirkstone Pass</td>
<td>Later prehistoric settlements</td>
</tr>
<tr>
<td>Copt Howe (2)</td>
<td>98</td>
<td>View west of Langdale Pikes, otherwise limited.</td>
<td>Valley route to axe quarries</td>
<td>Axe quarries</td>
</tr>
</tbody>
</table>

Selection of survey area

An area known as Moor Divock, part of Askham Fell near the village of Pooley Bridge, was found to match the criteria of the model. This tract of flat, elevated open land in the north-east corner of the Lake District lies between the northern end of Ullswater and the Eden Valley. The moor rises to 370 m to the north at Heughscar Hill, 400 m to the south at Helton Fell, and 530 m to the west at Arthur’s Pike but central section lies between 300 and 320 m OD. Most of the area is gently sloping or flat with a few steep gulleys cut by streams. The survey was undertaken in early summer to ensure that the wetter areas were navigable and the vegetation (bracken, heather) did not restrict walking or obscure stones. The moor has public access (the land is owned by the Lowther Estate) so no permission was required.

Figure 5-15: View south-east from Moor Divock across Ullswater towards Patterdale.
The ‘saddle’ of the moor forms a natural passage-way, channelling movement east-west, and connects distinctively different landscapes. To the west the distant Lake District fells form a craggy skyline beyond Lake Ullswater (Figure 5-15), and to the east, limestone uplands are marked by the ‘Whaleback’ of Knipe Scar which dominates the middle distance; the rolling Howgill Fells at the foot of the Pennines are visible beyond. The moor is also divided geologically between igneous rocks of the Borrowdale Volcanic Series to the west and limestone (some outcropping) with large sink-holes to the east (Figure 5-16). The boulders found scattered across the surface and used in the monuments are a mix of both, and include a number of erratics. The area is crossed by several ancient paths including two major routes: a cart track runs south-east to north-west between the villages of Helton and Pooley Bridge, crossed at right-angles by a Roman road known as ‘High Street’ or ‘Bret streate’, which runs along the ridge between Kentmere and the fort of Brocavvm at Brougham (Figure 5-17). The presence of two open stone circles (the Cockpit and Swarth Fell) along this route suggests that it may have earlier origins.

Figure 5-16: Sink holes in the limestone part of the moor.

Figure 5-17: Crossroads: Roman ‘High Street’ meets the track to Pooley Bridge.
The moor has an abundance of prehistoric features and was most recently surveyed by Clare & Wilkinson (2006)\(^4\), but antiquarian reports (Simpson 1860: 446-447; Greenwell 1874: 24-25; Greenwell 1877; Waistell Taylor 1886) provide a valuable insight into the appearance of the area in the nineteenth century when the remains were more complete (see for example Figure 5-20). These included a variety of burial monuments: round cairns, ring cairns, and tri-radial or 'star fish' shaped cairns, as well as stone avenues, and an embanked stone circle. Later, Spence (1934) reported earthworks on an elevated area of ground known as Three Pow Raise to the south-western side of the moor, including a total of seven 'hut circles' and twenty-six 'tumuli' on either side of a sunken trackway. More recently, Laurie has identified at least three burnt mounds in the area (T. Laurie 2005 pers. comm.), and Clare & Wilkinson list 38 additional features (2006:14-15), although some of these may be related to Spence's finds which are not referenced in the report. Small finds on the moor include a perforated stone battle axe, a jade button, and several flint artefacts (Table 5-9).

**Table 5-9: Small finds on Moor Divock.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flint scraper, triangular, 2 ½ inches long, found in 1868</td>
<td>(Spence 1940: 113)</td>
</tr>
<tr>
<td>Jet button, circular dia. 1 1/8 inch, hidden perforations.</td>
<td>(Spence 1940: 113)</td>
</tr>
<tr>
<td>'Pounder' or hammerstone of hard igneous rock, oval-shaped; 5 ½ inches long. From a cairn on Moor Divock, 1868.</td>
<td>(Spence 1940: 112)</td>
</tr>
<tr>
<td>Perforated stone battle-axe of black igneous or volcanic rock found on Moor Divock.</td>
<td>(Fell 1974: 2-3)</td>
</tr>
<tr>
<td>Two flint flakes, possibly Bronze Age</td>
<td>(Fell 1974: 2-3)</td>
</tr>
<tr>
<td>Yorkshire vase, Abercrombie Type 1A.</td>
<td>(Greenwell 1877: 400-401) (Fell 1967: 23)</td>
</tr>
<tr>
<td>A flint thumbnail scraper, and three flakes</td>
<td>(Cherry &amp; Ellwood 2001: 191)</td>
</tr>
</tbody>
</table>

**Rock art on the moor**

Two carved stones in a monumental context and are included in Beckensall's publication: a cup-and-ring carving (CU0038) on an upright of Cairn No. 4 (using the numbering applied by Waistell Taylor) and a cup-marked slab (CU0039) lying at the centre of the same cairn (Beckensall 2002: 101-104). In addition, Frodsham (1989: 7) notes a natural cupule (CU0099) on an upright at the Swarth Fell stone circle (NY457192) which lies approximately 3 km along the Roman road to the south and possible cup-marks on the cist slab of the 'star-fish' Cairn no. 10, known as White Raise were reported (see Section 5.1.2; CU0077).\(^4\)

\(^4\)This survey, published after the present investigation was completed, makes no mention of any rock art.
Figure 5-18: Location of Moor Divock showing landscape panels known at the time of the survey, in Cumbria (red circles) and in the west of Northumberland (blue circles).
Chapter 5: Developing the Picture

The survey

A 2 km x 2 km quadrat centred on NY4922 was selected to encompass the concentration of prehistoric remains, including the Copt Stone, White Raise, The Cockpit, Three Pow Raise, the rock art previously recorded and the potential new panel. It also included the area of the hut circles and cairn-fields to the south of the main track. The 50-75% elevation band identified as being a preferred location for rock art equates to 270-405 m OD on the moor, the highest part of the moor reaching 540 m on Swarth Fell. The survey area selected covered ground between 300 and 350 m OD. The area also covered a change in the form of the underlying bedrock.

Fieldwork was carried out in June 2005 in excellent weather conditions, with assistance from Andrew Blanshard (Durham University) and Gavin Parry (independent researcher). The eastern and southern edges of the main survey area were defined by stone walls; a hand-held GPS unit was used to determine the northern and western boundaries. The area was systematically traversed at 100 m intervals using an adaptation of the 'intelligent walking' method developed by the Tayside survey project whereby all stones were inspected for markings. The published rock art panels and the potential new examples were examined closely. All kerb-stones and uprights within monumental contexts were inspected carefully for non-natural features.
Chapter 5: Developing the Picture

Results

No new carved stones were positively identified. One kerbstone at Cairn No. 5 (CU0103) had a cupule which scored zero points using the evaluation system, and is most likely geological (Figure 5-23). Further, the ‘cup-and-ring’ mark recorded by Beckensall (CU0038) was determined to be geological. The cup-marked slab (CU0039) in the same cairn was less easy to verify but scored well (+2) due to its context (for details of both panels see Chapter 4). Cupules reported on a possible cist cover at White Raise cairn (CU0077) were barely discernible (score = 0). The slab appeared to be weathered limestone, with smoothed curves which might be interpreted as cups (Figure 5-27 and Figure 5-28). The cupule on the upright of the Swarth Fell stone circle (CU0099), outside of the survey area, scored zero points and is likely to be geological.

Figure 5-22: Map showing area surveyed, prehistoric and Roman remains, and possible rock art panels (red circles).
Table 5-10: Summary of possible rock art on and around Moor Divock with results of evaluation.

<table>
<thead>
<tr>
<th>Panel ID</th>
<th>Panel name</th>
<th>NGR</th>
<th>Context</th>
<th>Description</th>
<th>Identified/evaluated by:</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CU0038</td>
<td>Moor Divock 1</td>
<td>NY49402196</td>
<td>Kerbstone, Cairn 4</td>
<td>Cup-and-ring</td>
<td>Stan Beckensall</td>
<td>Geological</td>
</tr>
<tr>
<td>CU0039</td>
<td>Moor Divock 2</td>
<td>NY49402196</td>
<td>Portable slab, Cairn 4</td>
<td>Two cupules</td>
<td>Stan Beckensall</td>
<td>Unresolved</td>
</tr>
<tr>
<td>CU0077</td>
<td>Moor Divock 3</td>
<td>NY48892242</td>
<td>Cist cover, Cairn 10</td>
<td>Multiple cupules</td>
<td>Philip Deakin</td>
<td>Geological</td>
</tr>
<tr>
<td>CU0099</td>
<td>Swarth Fell</td>
<td>NY45701920</td>
<td>Stone circle upright</td>
<td>Single cupule</td>
<td>Paul Frodsham</td>
<td>Geological</td>
</tr>
<tr>
<td>CU0103</td>
<td>Moor Divock 4</td>
<td>NY49302220</td>
<td>Kerbstone, Cairn 5</td>
<td>Single cupule</td>
<td>Survey I</td>
<td>Geological</td>
</tr>
</tbody>
</table>

Figure 5-23: Kerbstone at Cairn 5 with cupule (CU0103), thought to be geological.
Chapter 5: Developing the Picture Motifs, Monuments and Mountains

Figure 5-24: Cairn No. 4

Figure 5-25: 'Cup-and-ring' mark recorded by Beckensall (CU0038). The feature appears entirely natural.

Figure 5-26: Possible cup-marks on slab in Cairn 4 (CU0039).
Conclusion

The absence of any convincing form of carving on Moor Divock (with the possible exception of the cup-marked slab in Cairn 4) does not match expectations based on evidence from neighbouring counties. The model developed from data collated from Northumberland and from West Yorkshire suggests that the survey area was an extremely good candidate for rock art, being at the correct elevation, with extensive views, on several ancient routes, and with much evidence of prehistoric activity from the Neolithic period through to the Iron Age. It appears however, that the tradition of carving boulders and outcrops in the landscape did not extend to Moor Divock, and it may be that the Vale of Eden represents a threshold between this and other forms of rock art. Might the new panels found in the central valleys represent a different tradition? Survey II develops a new model designed to test this idea.
Chapter 5: Developing the Picture Motifs, Monuments and Mountains

5.2.3 Survey II. Context: ‘Lakeside Landmarks’

The handful of panels identified in landscape contexts in the central Lake District appear to represent a very separate tradition to that explored in Survey I, being located in very different situations in the landscape. It was hoped that a survey based on characteristics common to these sites might result in the location of additional panels, thus confirming the significance of the observations. The sites considered for the model were: Patterdale (four panels), CU0003 - CU0006; Low Park, (one panel), CU00087; and Syke Farm (one panel), CU00090. Although they are located in a central valley the Copt Howe panels in Great Langdale were not included because they are boulders rather than outcrops, are not near to a lake (although they do lie on the edge of an ancient glacial lake) and are decorated in a very different style having complex `passage grave' motifs on vertical panels.

Building the model: common characteristics

In contrast to the majority of rock art in Britain which is found on fell sandstone, these decorated panels are all hard volcanic outcrops, those in Patterdale being of the Borrowdale Volcanic Series and the Crummock and Buttermere panels being on Skiddaw Slate. They each have extensive, though simple decoration consisting primarily of cup-marks, dumb-bells and grooves with a small number of cup-and-ring motifs on one panel at Patterdale. There are no complex motifs: no spirals, concentric circles, rosettes or penannulars. A detailed analysis of the landscape situation of the panels revealed they have the following common characteristics:

- Carved on outcropping volcanic rock – these are substantial outcrops with more than 5 m² exposed surface (except for the Syke Farm panel which may not have been uncovered to its full extent).
- Located on or just above the valley floor between 110 and 170 m OD.
- Associated with a (glacial) lake, being situated within 1.75 km of the shore at one end of the lake (two panels being located on land in between two lakes).
- Located within 275 m of a substantial beck.
- Located within a glacial valley close to natural route-ways into the central mountains.
- Having a possible association with a dominant mountain.

This model, which is very different to that considered in the previous survey, suggests that relatively low-lying areas around the end of lakes, close to becks may be favoured locations for cup-marked panels. Large, conspicuous outcrops, rather than boulders, are decorated, and all are located in the major valleys on the periphery of the central mountains. Table 5-11 provides a more detailed analysis of the panels. The Copt Howe site is included for comparison.

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6 The panels at Side Park, Great Langdale and at Broadgate Park, Grasmere had not been identified at the time the surveys were designed.
Selection of survey areas

A survey of the margins of all the Lake District lakes was beyond the resources of the current project, so a systematic process was applied in order to identify locations having characteristics most similar to those listed. OS maps (1:25000) were initially used to identify lakes which matched the required criteria, with the terminal areas of the finger-lakes given particular consideration. The map-based study also identified areas of land use such as settlement or forestry which would prevent survey. Those lakes already associated with rock art panels (i.e. Ullswater, Buttermere and Crummock Water) were excluded as they had been scrutinised by the original finders of the panels or by other parties. Loweswater was also known to have been surveyed for rock art (S. Hood 2005, pers. comm.) and was also excluded. The smaller lakes (Rydal Water, Esthwaite Water, Elterwater) and upland tarns (e.g. Devoke Water, Seathwaite Water) were not included. The cartographic analysis revealed that all the lakes examined had some areas with potential for rock art. The results are summarised in Table 5-12.

Areas determined to have the highest potential for rock art were visited to determine accessibility and to check for the presence of suitable outcropping rock or large boulders not discernible from the OS map. The results are summarised in Table 5-13. This led to the identification of two areas which had all the required landscape characteristics, were accessible, and had potential outcrop present: the Wyth Burn valley at the southern end of Thirlmere, and an area along the River Rothay between the north end of Lake Windermere and the south end of Rydal Water. These two locations were then subjected to more detailed inspection. For the Thirlmere survey an area of approximately 1 km² was defined and surveyed using the 'intelligent walking' method described for Survey I, whereby all large boulders and outcrops within the transect were systematically examined. For the Windermere/Rydal survey, outcrops were located on more developed land in the town of Ambleside. Two groups were surveyed, one at Waterhead, near the Galava Roman fort and close to the shore of Lake Windermere, and a second in Rothay Park, a recreation area on the north-eastern edge of Ambleside. In each case all the outcrops were closely examined; no boulders were present. The two survey areas are now described in detail.
Figure 5-29: Location of outcrops (●) used to develop model. West to east: Low Park, Syke Farm, Patterdale (4 panels). Red rectangles = areas selected for detailed survey. ● = Broadgate Park panel, found after the survey, but fitting the model. Base map courtesy of Countryside Agency, © 2005 (web ref #3).
<table>
<thead>
<tr>
<th>Site</th>
<th>Ref.</th>
<th>Geology</th>
<th>Elevation (m OD)</th>
<th>Lake(s) (distance, m)(^7)</th>
<th>Beck (distance, m)</th>
<th>Nearby passes/route ways</th>
<th>Mountains (height, m; direction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place Fell Cottage</td>
<td>CU0003</td>
<td>BVS</td>
<td>170</td>
<td>Ullswater (625)</td>
<td>Goldrill Beck (275)</td>
<td>Kirkstone Pass, Boredale Hause, Sticks Pass, Grisedale Hause</td>
<td>St Sunday Crag (841, SW)</td>
</tr>
<tr>
<td>Greenrigg</td>
<td>CU0004</td>
<td>BVS</td>
<td>160</td>
<td>Ullswater (700)</td>
<td>Goldrill Beck (250)</td>
<td>Kirkstone Pass, Boredale Hause, Sticks Pass, Grisedale Hause</td>
<td>St Sunday Crag (841, SW)</td>
</tr>
<tr>
<td>Crookabeck</td>
<td>CU0005</td>
<td>BVS</td>
<td>150</td>
<td>Ullswater (1000)</td>
<td>Goldrill Beck (75)</td>
<td>Kirkstone Pass, Boredale Hause, Sticks Pass, Grisedale Hause</td>
<td>St Sunday Crag (841, SW)</td>
</tr>
<tr>
<td>Beckstones</td>
<td>CU0006</td>
<td>BVS</td>
<td>160</td>
<td>Ullswater (1750)</td>
<td>Goldrill Beck (75)</td>
<td>Kirkstone Pass, Boredale Hause, Sticks Pass, Grisedale Hause</td>
<td>St Sunday Crag (841, SW)</td>
</tr>
<tr>
<td>Low Park</td>
<td>CU0087</td>
<td>Skiddaw Slate</td>
<td>116</td>
<td>Crummock Water (500) Loweswater (1600)</td>
<td>Park Beck (50)</td>
<td>Whinlatter Pass, Coledale Hause, Floutern Pass</td>
<td>Mellbreak (509, SSW); Grasmoor (852, E); Loweswater Fell (423, N)</td>
</tr>
<tr>
<td>Syke Farm</td>
<td>CU0090</td>
<td>Skiddaw Slate</td>
<td>110</td>
<td>Buttermere (575) Crummock Water (625)</td>
<td>Mill Beck (3)</td>
<td>Honister Pass, Newlands Hause, Floutern Pass</td>
<td>Red Pike (755, SW); High Stile (807, S); Whiteless Pike (660, N)</td>
</tr>
<tr>
<td>Copt Howe A &amp; B</td>
<td>CU0001</td>
<td>BVS</td>
<td>98</td>
<td>Glacial lake (now filled)</td>
<td>Langdale Beck</td>
<td>Stake Pass</td>
<td>Langdale Pikes (736, ENE)</td>
</tr>
</tbody>
</table>

\(^7\) Based on current shoreline
Table 5-12: Phase I - Analysis of major lakes for required characteristics using OS 1:25000 maps.

<table>
<thead>
<tr>
<th>Lake</th>
<th>Beck(s)</th>
<th>Passes/Routeway(s)</th>
<th>Notes/potential for rock art</th>
</tr>
</thead>
</table>
| Bassenthwaite | S: River Derwent, Chapel Beck  
N: River Derwent                           | Possible route from north east coast into mountains?                                                   | Was previously joined with Derwent Water. Lake is a long way from the central mountains.  |
| Coniston    | S: River Crake; N: Yewdale beck and Levers Water Beck. Also Mere Beck on east side. | Route out of central mountains southwards? Walnar Scar route west to Seathwaite                        | Area around village of Coniston and Yewdale Beck has potential.                         |
| Derwent     | S: R. Derwent; N: R. Derwent and R. Greta                             | Route south to Glaramara axe factories; route to Castlerigg stone circle?                              | Was previously joined with Bassenthwaite.                                               |
| Ennerdale   | S: Char Dub; N: R. Ehen                                               | Floutern                                                                                                   | North end checked by S. Hood.                                                          |
| Grasmere    | S: R. Rothay; N: R. Rothay                                             | Dunmail Raise, Greenup, Grisedale Hause                                                                  | Possible rock art at Grasmere Youth Hostel (pers. comm. Adam Stanford)                |
| Haweswater  | S: Mardale Beck N: Haweswater Beck, Riggindale Beck, Measand Beck on west side | High Steet, Nan Biel Pass, Gatesgarth Pass                                                              | Has been re-engineered as a reservoir; original map obtained. Rock art may have been flooded. |
| Thirlmere   | N: St Johns Beck; S: Wythburn and Raise Beck  
Also, Dob Gill, Launchy Gill, Whelpside Gill | Dunmail Raise, Sticks Pass, Armboth Fell. Main artery north-south through the central Lake District along shore. | Possible sighting at Armboth (pers. comm. Tim Cook). Forestry Commission around sides. Lake is now reservoir - shoreline has changed but good potential at south end. |
<p>| Wastwater   | N: Lingmell Gill and Lingmell Beck, Mosedale Beck; S: River Irt        | Black Sail, Moses Trod, Styhead, Burnmoor                                                               | Eastern shore inaccessible screees. Good potential at northern end.                     |
| Windermere  | N: Brathay and Rothay; S: River Leven. East side: Cunsey beck         | Scandale, Kirkstone. Route from Langdale to southern coast?                                              | Lots of settlement at North and South ends (Ambleside and Newby Bridge). Best potential at northern end. |</p>
<table>
<thead>
<tr>
<th>Lake</th>
<th>Potential Outcrops</th>
<th>Accessibility</th>
<th>Areas checked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coniston</td>
<td>No obvious outcrop around Beck. Several potential outcrops at southern end, e.g. at 292876. Possible outcrops also on south-western side near car parks may be worth checking.</td>
<td>Coniston built around Yewdale Beck. Most other land agricultural. Area at south east of Lake Private. Outcrops on agricultural land.</td>
<td>Area around Yewdale Beck checked as far as main road</td>
</tr>
<tr>
<td>Derwent</td>
<td>Mostly marshy; very developed (Keswick). Some outcropping rock further south into Borrowdale. Limited potential.</td>
<td>Mostly private, residential or agricultural.</td>
<td>None</td>
</tr>
<tr>
<td>Grasmere</td>
<td>Heavily developed (Grasmere Village). Some outcrop noted towards north of village near Youth Hostel.</td>
<td>Mostly private, residential.</td>
<td>Reported rock art located but not convincing.</td>
</tr>
<tr>
<td>Haweswater</td>
<td>Some, but lots of disturbance due to reservoir and road construction. Valley sides rise from the lake shore – little flat ground.</td>
<td>South side accessible by road; north side by footpath. Eastern end dammed, west end flooded.</td>
<td>None</td>
</tr>
<tr>
<td>Thirlmere</td>
<td>Lots of potential outcrops at north end of lake around Beck at Wythburn. Outcrop noted on marshy land on lake shore. No outcrops noted around gills on west side or around Welsde near Chapel. Binka stone worth checking on west side</td>
<td>Permissive footpath on both sides of the Beck at northern end.</td>
<td>None</td>
</tr>
<tr>
<td>Wastwater</td>
<td>Good flat areas at Wastdale Head but no outcrops Lots of outcropping stone along western shore.</td>
<td>Western shore and Wastdale Head very accessible.</td>
<td>Outcrops along western shore checked at several random sites.</td>
</tr>
<tr>
<td>Windermere (north end)</td>
<td>Very built up (Ambleside) but lots of outcrop near to Galava Roman fort. Lots of potential outcrops in Rothay Park.</td>
<td>Area around Brathay Hall private; Rothay Park and Galava both public access.</td>
<td>None</td>
</tr>
</tbody>
</table>
Survey II A: Thirlmere, 23 July 2005

The current ‘lake’ of Thirlmere is in fact a reservoir constructed in the late 19th century to meet growing water demands of Manchester, but prior to the engineering work two smaller, natural glacially-formed lakes lay in the valley, linked by a short beck. The lakes were known collectively by many different names: including Leatheswater, Bracken Water, Brackmere, Layswater, Thirlmere and Wyborn Lake. The present reservoir is 5.63 km long and 0.8 km wide, the northern end terminating in a solid masonry dam. Desk-based map analysis indicated that the area around the southern end of Thirlmere had high potential for rock art judging from the following landscape features:

Becks. Most of the water which feeds the lake is in the form of ghylls which cascade down the steep fells east and west of the lake but to the south, the head of the lake lies in more gently sloping land and the Birkside Gill and the Wyth Burn have the chance to mature before reaching the lake shore.

Routes. The valley has long been a major thoroughfare for travellers moving north-south through the central fells. To the south the valley of Birkside Gill leads over Dunmail Raise to Grasmere, and the north end of the valley gives access to Keswick and, via St John’s in the Vale, to Penrith. Although the route along the lake was apparently ignored by the Romans, the road between Wythburn and Castlerigg is mentioned in the medieval records of Furness Abbey: cattle were granted free access along the lake, and between Wythburn and Watendlath over the fells to the west (Hindle 1984: 113). Seventeenth century maps in Ogilby’s Britannia clearly show a road along the west side of ‘Wythburn Water’ (1675: Plate 96). The north-south road along the valley is joined by a number of natural routes leading via passes over the fells into adjoining valleys, used by pack horses prior to the construction of turnpike roads. These upland routes followed the natural contours and possibly have very early origins. To the south east a track leads up the valley of the Wyth Burn and into Great Langdale; to the east, a path follows Dob Gill over Armboth Fell to Watendlath; and from the north end of the lake another key route leads from Stanah over Sticks Pass to Glenridding and Patterdale at the head of Ullswater.

Mountains. The head of the valley is dominated by the massive bulk of the Helvellyn range which includes Nethermost Pike (891 m), Dollywaggon Pike (858 m), High Crag (884 m), and Helvellyn (949 m). The southern tip of the lake lies at the foot of Steel Fell (553 m).

These characteristics suggested that the Thirlmere valley warranted further investigation, but one factor presented a potential problem: when the reservoir was created, the water level rose by 16.5 m and a substantial amount of land was inundated (two villages, Wythburn and Armboth, were lost). New roads were constructed around the reservoir, and large quantities of spruce and larch were planted. This may have resulted in the loss of any rock art close to the original shoreline, either through submersion, road-building or tree planting. Examination of plans (Figure 5-30) showed that the original shoreline at the head of the southern lake, the main area of interest, was approximately 1.5
km further north than the current shore. A preliminary survey was therefore conducted to determine whether the area justified more detailed inspection.

**Preliminary visit**

The southern terminus of the lake in the area of Steel End and Nook appeared to have the most potential for rock art with two mature becks, Raise Beck and the Wyth Bum, flowing northwards into the lake (Figure 5-32). The area around Raise Beck had no obvious outcropping rock, having been much disturbed by the building of the A591 dual carriageway, but the Wyth Bum valley appeared to have a large number of outcrops and un-cleared boulders worth closer inspection. A permissive footpath leading up the valley gave access to the area. Although the reservoir extends approximately 1.5 km beyond the original lake shore, the extremely low water levels at the time of the survey (July 2005) meant that several hundred metres of normally submerged surface were accessible making this area well within the parameters of the model. The creation of a small car park and a minor road may have resulted in the loss of carvings, although the area south of the road was open fell. The lower part of the Wyth Burn valley was found to be relatively flat and open with land rising gently on either side of the beck. To the north, un-cleared boulder fields were used for rough grazing; to the south the land was more managed but very marshy, being in the flood plain of the beck. Further upstream the valley narrowed and steepened to around 1 in 15 m, and erratic boulders and outcrops of the Borrowdale Volcanic Series predominated. A little further along the western shore of the lake at Dob Gill, the prominent outcrop known as the Binka Stone (Figure 5-35) was also identified as being worthy of more detailed examination.

**The survey**

An area of approximately 1 km² was selected for survey around the Wyth Burn beck, extending for a distance of 1 km along its length from the lake shore to an approximate elevation of 250 m (Figure 5-37). The western and eastern limits were defined by boundary walls in the lower part of the area and by the 250 m contour further up the valley; an enclosed wood was not checked. A small area surrounding the Binka Stone on the western shore was also surveyed. All outcrops and boulders were examined for carvings. No human-made carvings were detected but a number of unusual geological markings were observed on both outcrops and boulders (see figures below). These are included in the Table A-2 of the Appendices as CU0101-CU0130. Several striking boulders were also noted but there was no evidence that they had been worked or moved (Figure 5-41).
Figure 5-30: Extent of Thirlmere prior to dam, showing area with rock art potential to the right of the map. Based on map in Harwood J.J., History and Description of the Thirlmere Water Scheme.

Figure 5-31: Southern end of Thirlmere, showing low water level in July 2005.
Chapter 5: Developing the Picture Motifs, Monuments and Mountains

Figure 5-32: Wyth Burn near to Steel End

Figure 5-33: Boulder fields in lower valley.

Figure 5-34: Potential outcrops in the Wyth Burn valley.
Chapter 5: Developing the Picture

Figure 5-35: The Binka Stone on the western shore.

Figure 5-36: Southern end of the lake revealed by the low water level.
Figure 5-37: Area around Wythburn surveyed. Dotted line indicates area normally inundated.
Figure 5-38: Outcrop to the north of the beck with unusual geological markings (CU0101).
Figure 5-39: Outcrop to the south of the beck (top) covered with geological markings (CU0103)
Figure 5-40: Geological patterns on boulder to the south of the beck (CU0102).
Figure 5-41: Striking boulders but no rock art.
Chapter 5: Developing the Picture Motifs, Monuments and Mountains

Survey IIB: Rydal Water/Lake Windermere, 24 July 2005

Lake Windermere is the largest English lake, being 17 km long and varying from 0.4 to 1.5 km in width. The lake is drained from its southern tip by the River Leven, and is fed by the rivers Brathay, Rothay, Trout Beck, Cunsey Beck and several other lesser streams. The north-south alignment of the lake, combined with its position between Morecambe Bay and the central fells, means that it forms a migration highway for wildlife; during winter months geese flying this route are a common sight. The town of Ambleside at the northern end of the lake is a popular destination for visitors. Located on the main route through the Lake District, it is a major hub providing access to Great Langdale and Coniston to the west and Grasmere and Keswick to the north. The Romans recognised the strategic importance of this location, in AD 90 building an auxiliary fort, Galava, in the meadows at the head of the lake, an area now known as Waterhead. Map analysis indicated that the area around the northern end of Lake Windermere, between Waterhead and neighbouring Rydal Water had high potential for rock art, based on the following additional landscape characteristics:

Becks. The River Rothay flows north-south, linking the smaller lakes of Grasmere and Rydal Water to the much larger Windermere, which it enters near to the Roman fort at Waterhead in Ambleside. Here it is joined by the River Brathay, flowing west to east from Elterwater.

Routes. The head of the lake has been a key communication hub since Roman times. The fort at Galava had road links to Hardknott Fort in Eskdale and from there to the major Roman port at Ravenglass on the west coast. Roads also ran northwards via Troutbeck and over the fell known as High Street, and southwards to the fort at Watercrook in Kendal. The discovery of masonry blocks in the lake at Waterhead implies the presence of a pier suggesting the lake was also used to transport men and supplies directly to the south coast. Prior to the Romans it is likely that Neolithic communities visiting the axe quarries at nearby Langdale would have passed this way using the same route to the south coast or east across the Pennines. A north-south road is depicted in Ogilby’s map (1675: Plate 96) and is described in detail by seventeenth century ‘travel-writer’ Celia Fiennes (Fiennes 1888). Ambleside also lies on a local drove road between the coastal lowlands and the north-south drove roads which lay along the Eden Valley to the east. This route followed the Roman road over Hard Knott and Wrynose passes to Ambleside, then over more passes at Garburn into the valley of Longsleddale (Farrer et al. 1926).

Mountains. Loughrigg Fell rises above the town to the west; to the north are Red Screes and the hills of the Fairfield group; to the east is Wansfell Pike.

Preliminary visit

A preliminary survey revealed that most of the northern shore of Lake Windermere is inaccessible, being incorporated into residential or commercial property. At Ambleside, however, there were a few pockets of undeveloped and accessible land with substantial outcrops. One area at Waterhead has perhaps survived by virtue of its proximity to the remains of the Galava Roman fort, being included
in the area scheduled by English Heritage. A second location with a number of potential outcrops was identified in the Rothay Park recreation ground on the northern edge of Ambleside. Both areas are crossed by the River Rothay.

The survey
The area of each survey was defined by modern boundaries in the form of stone walls, roads, and buildings as shown on the map. Within each area all outcrops were thoroughly inspected. At Waterhead the outcrops were roughly textured and largely covered by moss, lichen and turf. A number of possible geological cupules (CU0094) were noted (Figure 5-44) but none could be assigned a human origin with any certainty (score = 0). (The same cupules were later reported by Paul Brown). The outcrops in Rothay Park were more glacially smoothed than at Waterhead; some had been further ‘polished’ by children using them as slides (Figure 5-45). No rock art was detected, although a faint ‘ring’ feature (CU0104) was noted on one outcrop (Figure 5-46). This could not be positively identified as a carving.

Figure 5-42: Survey areas (green) around Ambleside at the northern end of Lake Windermere.
Chapter 5: Developing the Picture Motifs, Monuments and Mountains

in the area scheduled by English Heritage. A second location with a number of potential outcrops was identified in the Rothay Park recreation ground on the northern edge of Ambleside. Both areas are crossed by the River Rothay.

The survey

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Figure 5-42: Survey areas (green) around Ambleside at the northern end of Lake Windermere.
Figure 5-43: Outcrop at Waterhead, Lake Windermere behind.

Figure 5-44 Outcrop with natural cupules at Waterhead (CU0094).
Figure 5-45: Potential outcrops at Rothay Park, smoothed by glaciers and polished by sliding.

Figure 5-46: Unusual 'ring' feature at Rothay Park (CU00104).
5.2.4 Targeted Surveys: Discussion and post-survey discoveries

No rock art was discovered in any of the areas examined, and in the upland survey one published example was determined to be natural. Although these results appear somewhat negative a number of conclusions can be drawn, and the identification of a major new site several months after the surveys were completed has added a new perspective.

Survey I – Eastern Influences

The absence of any form of rock art in this landscape of major prehistoric activity is puzzling, and it is understandable that researchers have reported motifs on the kerb stones at Moor Divock; their presence would certainly fit with current understanding of the locations and contexts of carved stones elsewhere in northern Britain. Indeed, the unusual star-fish cairns suggest a strong stylistic link with the north-east, with ‘tri-radial’ or ‘Mercedes’ cairns being recently identified at a number of locations (Ford et al. 2002: 82-85). Yet the survey suggests that the type of rock art found in the upland landscapes east of the Pennines, was not part of the culture of those communities who built the monuments on Moor Divock. It would appear that, for rock art at least, the neighbouring Eden Valley may have represented the limit of eastern traditions, and that the examples found at Gillalees, Tortie Cottage and at Stainmoor are best understood within the Northumberland and Durham corpus.

Since the survey was undertaken, two further potential carved stones (CU0098 and CU0098) have been reported to the author, both just beyond the survey area. CU0099 (Figure 5-47) was identified by G. Parry on Barton Fell. The single cupule scores +1 on the scale and there is a small possibility that it is, indeed rock art. CU0098 was located by S. Hood “in the north-west of the moor” (no grid reference provided) and in photographs appears as a circular feature (Figure 5-48), most probably natural but is included here for completeness. Neither panel has been investigated in the field.

Figure 5-47: Possible cup-mark on boulder on Barton Fell, west of the survey area. Photos: G. Parry.
Survey II - Lakeland landmarks

The map analysis revealed that the areas with characteristics fitting the model (i.e. around the ends of the lakes, in the valley bottom and close to becks) tended to correspond to the location of modern settlement for obvious reasons. This excluded a number of areas from the survey, as it was assumed that any outcrops would have been quarried or, if they had survived, would be located in residential (private) grounds. However some time after the fieldwork was undertaken, a new panel (CU0096) was identified on a volcanic outcrop in Broadgate Park in the village of Grasmere (see Section 5.1.5), a location which closely matches the criteria of the model (see Table 5-14):

- approximately 800 m from the head of Grasmere Lake;
- at a relatively low elevation (73 m OD) on the valley floor;
- within 100 m of the River Rothay;
- dominated by Helm Crag, with its distinctive ‘Lion and Lamb’ formation;
- on several natural route-ways, including Dunmail Raise.

The survival of this outcrop is fortunate; it lies in the corner of a well-maintained park and is bordered on one side by a car park and on another by a road. This discovery suggests that although the areas surveyed produced no definite rock art, the original premise of the model may have been valid. The presence of developed areas around the heads of the lakes may mean that several decorated outcrops have been lost or are inaccessible, so that further evidence to support the hypothesis may be difficult to obtain, but the Grasmere example demonstrates that there is a chance that other carvings remain intact. Also since the survey, independent rock art researcher Paul Brown (who identified the Copt Howe and Beckstones panels in Cumbria) has reported ‘cup-marks’ on the Waterhead outcrops. This demonstrates the difficulty of absolute verification and the subjective nature of evaluations based on personal experience. These outcrops were identified in the above analysis as a very likely location for rock art and were surveyed but although it would have been gratifying to find cup-marks to support
the hypothetical model, the cupules noted during the survey scored zero on the evaluation scale and cannot be considered very probable candidates.

The findings from both surveys and the new discoveries described in Section 5.1 are further explored in a wider context in Chapter 6, but before the picture of Cumbrian rock art could be redrawn, the new panels needed to be fully recorded. A range of techniques were used, depending on the context of the site and availability of equipment and expertise. This allowed for an evaluation of a number of different approaches as described in the next section.

Table 5-14: Common characteristics of ‘lake’ sites with new site added for comparison.

<table>
<thead>
<tr>
<th>Site</th>
<th>Ref.</th>
<th>Geol.</th>
<th>Elevation (m OD)</th>
<th>Lake(s) (distance, m)</th>
<th>Beck (distance, m)</th>
<th>Nearby passes/route ways</th>
<th>Mountains (height, m; direction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place Fell Cottage</td>
<td>CU0003</td>
<td>BVS</td>
<td>170</td>
<td>Ullswater (625)</td>
<td>Goldrill Beck (275)</td>
<td>Kirkstone Pass, Boredale Hause, Sticks Pass, Grisedale Hause</td>
<td>St Sunday Crag (841, SW)</td>
</tr>
<tr>
<td>Green-rigg</td>
<td>CU0004</td>
<td>BVS</td>
<td>160</td>
<td>Ullswater (700)</td>
<td>Goldrill Beck (250)</td>
<td>Kirkstone Pass, Boredale Hause, Sticks Pass, Grisedale Hause</td>
<td>St Sunday Crag (841, SW)</td>
</tr>
<tr>
<td>Crooka-beck</td>
<td>CU0005</td>
<td>BVS</td>
<td>150</td>
<td>Ullswater (1000)</td>
<td>Goldrill Beck (75)</td>
<td>Kirkstone Pass, Boredale Hause, Sticks Pass, Grisedale Hause</td>
<td>St Sunday Crag (841, SW)</td>
</tr>
<tr>
<td>Beck-stones</td>
<td>CU0006</td>
<td>BVS</td>
<td>160</td>
<td>Ullswater (1750)</td>
<td>Goldrill Beck (75)</td>
<td>Kirkstone Pass, Boredale Hause, Sticks Pass, Grisedale Hause</td>
<td>St Sunday Crag (841, SW)</td>
</tr>
<tr>
<td>Low Park</td>
<td>CU0087</td>
<td>Skiddaw Slate</td>
<td>116</td>
<td>Crummock Water (500)</td>
<td>Park Beck (50)</td>
<td>Whinlatter Pass, Coledale Hause, Floutern Pass</td>
<td>Mollbreak (509, SSW); Grasmoor (832, E); Loweswater Fell (423, N)</td>
</tr>
<tr>
<td>Syke Farm</td>
<td>CU0090</td>
<td>Skiddaw Slate</td>
<td>110</td>
<td>Buttermere (575)</td>
<td>Mill Beck (3)</td>
<td>Honister Pass, Newlands Hause, Floutern Pass</td>
<td>Red Pike (755, SW); High Stile (807, S); Whiteless Pike (660, N)</td>
</tr>
<tr>
<td>Broadgate Park</td>
<td>CU0096</td>
<td>BVS</td>
<td>73</td>
<td>Grasmere (800)</td>
<td>River Rothay (80)</td>
<td>Dunnail Raise</td>
<td>Helm Crag (405, NW); Great Rigg (766, NE)</td>
</tr>
</tbody>
</table>

* Based on current shoreline
5.3 Capturing the Carvings: recording, processing and analysis

Given the current absence of specific guidance, the new panels identified in the course of this study offered a chance to apply and evaluate a number of rock art recording strategies. The aim was to ensure that the Cumbrian examples were recorded to meet the standards defined by the English Heritage sponsored RAPP project (2000), and that records were compatible with the database developed by the NDRA project. In addition, graphical representations of the newly identified panels were produced for illustrative purposes, and specific measurements of cup marks were made for further analysis. The considerations discussed in Chapter 2 were applied to the panels to be recorded and a range of recording methods used as appropriate. Previously published panels confirmed as rock art were not re-recorded.

5.3.1 Assessment and Planning

On the initial visit to each panel a preliminary assessment was carried out and basic measurements taken. These informed later decisions on techniques used to produce graphical recordings, either for analysis or to create illustrations. Since heritage management was not within the remit of the present study, no attempt was made to provide a high resolution record for preservation or monitoring purposes. Rather, the aim was to produce graphics and data which would represent the carvings, the panels and their immediate locales. These needed to allow general comparisons of a number of characteristics, but did not need to be accurate to less than c. 5 mm; any illustrations produced would be substantially reduced in size once digitised, such that high resolution recording would be wasted.

The panels to be recorded were all accessible, being close to roads or footpaths. Most were also reasonably smooth with horizontal or slightly sloping, flat surfaces, such that the replication of three-dimensional surfaces was not a major issue and traditional recording methods could be applied to good effect. The predominance of multiple cup-marks prompted an additional recording technique not previously applied to British rock art: each individual cup was ‘profiled’ for comparison with geological cupules in order to highlight any morphological differences and to obtain a picture of the variation amongst carved cup-marks. The resources available during the project were limited but equipment, software and expertise were kindly provided by both Durham University and by English Heritage. The budget did not stretch to laser scanning, but that technique has been applied to a number of sites in Cumbria during a AHRC-funded project Breaking Through Rock Art Recording: Three Dimensional Laser Scanning of Rock Art in Cumbria, some results from which have been published (Díaz-Andreu et al. 2005; Trinks et al. 2005; Díaz-Andreu et al. 2006).

No turf was removed and no attempt was made to clean lichen from any of the panels, although some loose moss, tree litter and animal droppings were cleared from the panels using a soft brush. None of the panels were ‘washed’.
5.3.2 Graphical recording

Despite the disadvantages of contact methods described in Chapter 2, rubbing and tracing remain the fastest and most cost-effective ways to create a reasonably representative record which, when combined with photography and other measurements, is adequate for illustrative purposes. These methods are most successful where the surface to be recorded is fairly flat, as was the case for the Cumbrian sites. The panel at Broadgate Park was traced, that at Side Pike was both traced and rubbed for comparison. Selective areas of the Copt Howe panel were also rubbed and traced.

Preferred methods for recording rock art involve no potentially-harmful contact with the rock surface. Scaled-drawings were made directly in the field for the three panels at Shap, Low Park and Syke Farm, and the recordings produced by rubbing and tracing were also re-drawn at reduced scale in the office. Basic photography was also used to record each panel, at the level of motifs, the panel, the outcrop and the surrounding landscape. In addition, stereo pairs of photographs were taken at Low Park, Syke Farm, and Copt Howe and processed using photogrammetry software.

Rubbing

Rubbing was carried out using the wax crayon method as developed by Beckensall, with thin paper (although thicker than the newsprint recommended by Beckensall which was found to tear easily in windy or wet conditions). The paper was secured over the panel using stones in order to limit potential contamination from adhesive such as masking tape or Blu-tak (as used in Valcamonica). At Side Pike the 'rim' of each cup was first outlined then the crayon was rubbed across the panel to record the surface texture, and a rough outline of the edge of the boulder was added. The two panels at Copt Howe have already been recorded by Beckensall using his wax rubbing technique and the results processed to produce a drawing (2002: fig. 39). No attempt was therefore made to record the entire site but a wax rubbing was made of the unusual motif on panel B, for comparison with a tracing of the same area.

Tracing

Tracing was undertaken using thin clear polythene such as that used as 'dust sheets' available in DIY stores. The polythene was secured using stones. At Side Pike a single large sheet was used for the whole panel. At Broadgate Park, where groups of cups were clustered across a larger area, a number of smaller, overlapping sheets were used. These had A3-sized frames pre-drawn to allow easier reproduction and reassembly. Where sheets overlapped, the joins were marked in at least two places. Measurements were taken to ensure the complete recording could be correctly reassembled. For the partial tracings at Copt Howe single A3 frames were used. In all cases, natural surface features were first traced using permanent red marker and areas of lichen or other vegetation marked in blue, then cups were outlined in black. For very deep cups an internal contour was added reflecting the profile of the cup and the position of the lowest point. At Copt Howe the more complex designs on both panels required a slightly different technique, with peck marks traced individually. These tracings were digitally scanned without intermediate processing.
**Scaled drawing**

For each panel a baseline was established; measurements were taken at right-angles to individual cup-marks and also to points along the edge of the panel. Cups were also measured and drawn accordingly, and major fissures and areas of vegetation added. The resulting field-drawings were later traced, reduced and digitised. Rubbings and tracings for the panels at Side Pike, Low Park and Broadgate Park were drawn to scale using a grid, in order to produce useable illustrations. In all cases a 2D plan of the panel was produced with cup-marks depicted in solid black. No attempt was made to produce a 3D interpretation, or to indicate the depth of cup-marks. Major natural fissures and vegetation were represented. Where appropriate, section views were also drawn to illustrate the slope of the panel.

![Figure 5-49: Scaled drawing in progress at Buttermere.]

**Photography, photogrammetry, and differential GPS**

Digital photography was used to record motifs, panels, outcrops and the surrounding landscape for all the new panels. In addition, stereo pairs of images for photogrammetry processing were captured at Low Park, Syke Farm, and Copt Howe. This work was undertaken with the help of Paul Bryan, head of the Metric Survey Team at English Heritage who has developed methodology used by the NDRA project. Target markers were placed on each panel and overlapping pairs of images taken approximately 0.5 m apart using a calibrated Nikon Coolpix 5 mega pixel digital camera and tri-pod. An umbrella was used to exclude direct sunlight and ensure even lighting across the panel surface. At Low Park where cup-marks were clustered in discrete groups across the panel, a series of stereo pairs was obtained, and to assist with the creation of a 3D model of the entire outcrop, a differential GPS survey was also undertaken using survey grade GPS 1200. The position of each photogrammetry target was recorded, along with the vertices of the outcrop, and the main fissures and features (Figure 5-54). A similar survey of the Copt Howe boulders was prevented by the enclosed nature of the valley which blocked the satellite signal.

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9 The fieldwork was sponsored by the Rosemary Cramp Fund, and with the practical assistance of Ben Edwards, Durham University. GPS equipment and training provided by Phil Howard, Durham University. Topcon trial software and training provided by Paul Bryan, English Heritage.
Chapter 5: Developing the Picture

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Discussion

Both 'contact' methods were reasonably quick (for cup-marks) and extremely cost-effective. Tracing was found to be more convenient, as the polythene sheets could be folded, were waterproof, and more generally durable than paper, although thinner polythene had a tendency to stretch when hot and so distort the tracing. Comparison between the wax rubbing and the tracing of the Side Pike panel revealed a number of inconsistencies, highlighting the subjective nature of these techniques. The use of two senses – sight and touch – in the tracing method perhaps makes this the more reliable and less
subjective. Only the rubbing technique captures the full texture of the panel surface but the selected surface features added during tracing can be more clearly defined and differentiated using colour.

Two different approaches were used for the Copt Howe motifs: areas of panel A were traced at the peck mark level, and the unusual motif on panel B was recorded both by rubbing and tracing. The tracing method required very close inspection of the carvings to reproduce the fine detail of the peck marks. Training in this technique received at the Valcamonica Field School was of great benefit, but the process demanded more skill than the approach used for the cup-mark recordings, with greater attention to detail and thus took much longer to complete a smaller area. It was also important to have very good lighting conditions to ensure that the peck marks were clearly visible. Comparison of the resulting recordings (Figure 5-52 and Figure 5-53) demonstrates the increased level of detail possible using tracing compared to rubbing, and also illustrates the loss of information when the rubbing is further processed to a drawing.

Despite their relative lack of objectivity and the need for direct contact these methods provided a valuable method of quickly capturing a full scale representation of large panels in the field; the process of converting this to a more detailed drawing can then be undertaken in a controlled environment. This is particularly useful given the vagaries of the British climate and the exposed location of many rock art sites. However, the methods are really only suitable for flat surfaces, producing a 2D result, and must be supplemented with detailed photographic records. Given the subjectivity involved they should perhaps be regarded as interpretations rather than definitive records.

Photography provided a relatively cheap and accessible means to capture both the carvings and the environment of the panel. Motifs appear most clearly defined when illuminated from a low angle. This is not always possible in Cumbria where dull weather tends to prevail, or where panels are in shadow. The technique of using a mirror to angle sunlight onto the carvings was useful where sunlight was available; it must be remembered, however, that the features highlighted in this way are in fact shadows cast by the light and not the actual carvings. For the photogrammetry the stereo pairs were quickly and easily captured in the field, with the greatest challenge being the exclusion of direct sunlight. 3D models are produced by processing the photographs using specialised software. The package recommended by English Heritage and used by the NDRAP volunteers is TOPCON PI-3000 Image Surveying Station. A trial (30 day demo) version of the software was used to successfully process the stereo-pairs but the resulting models could not be exported due to the limited functionality of the trial software. The raw data is, however, now captured and should access to the full application become possible in the future, models can be easily generated. The GPS readings obtained for the Low Park outcrop were used to generate a 3D model with ArcGIS 9 (Figure 5-55).
Chapter 5: Developing the Picture Motifs, Monuments and Mountains

Figure 5-51: Section I of the Broadgate Park panel. Scaled plan based on tracing.

Figure 5-52: Motif on Copt Howe panel B capture by A) wax rubbing by the author; B) drawing based on wax rubbing published by Beckensall (2002: fig. 39); C) by photography; and D) tracing by the author.
Figure 5-53: Detail of Copt Howe panel A captured by tracing (left) and by wax rubbing followed by drawing (right). Interpretation on the left is by Beckensall (2002: fig. 31).
Figure 5-54: Points recorded by differential GPS on the Low Park outcrop.

Figure 5-55: 3D model of Low Park outcrop showing areas of carving.
Results

A summary of the resulting data is shown in Table 5-15 (raw data is included in Appendix B). For all three panels, cups had similar minimum diameters of around 30 mm, and maximum diameters of 100-120 mm. Depths were similar for all panels, ranging between 2 mm and 34 mm. A single cup at Low Park is an outlier on the scatter graph, at 120 mm in diameter and 60 mm deep. The scatter chart for all three panels (Figure 5-59) illustrates a similar range of cup sizes for Broadgate Park and Side Park, with Low Park cup-marks tending to be both deeper and larger.

Analysis of the diameter : depth ratios showed that very few cup-marks are hemispherical, the majority having an index of between 4 and 13 (Figure 5-60). The distribution curves for the cup-marks at Side Pike and Broadgate Park were very similar, with more than 70% of the cups having a diameter: depth ratio of between 5 and 12, and an overall spread between 2.47 and 19.00. The curve for the Low Park panel, however, was positively skewed, 86% of cups having a diameter: depth ratio of between 3 and 9, with more closely grouped values ranging from 2.67 to 11.67.

The differences observed at the Low Park panel (more smaller, deeper cups) may be the result of the different type of rock, (Skiddaw Slate) which may have weathered in a different manner to the other two panels, which both belong to the Borrowdale Volcanic Series. All three panels have similar slope of between 10-30 degrees, allowing rain water to collect in the cups, but it was noticeable that at Low Park cups appeared particularly worn, with less susceptible layers of the vertical bedding planes protruding as ridges in the bottom of the cups (see Figure 5-57).

These measurements provide a general picture of the form of cup-marks present on three Cumbrian panels, and demonstrate the variation present. Further data from other sites and from different rock...
types such as Millstone grit and red Permian sandstone are needed to build a more complete picture. Comparative measurements of natural geological cupules would also aid the development of more specific guidelines for the differentiation of carved and natural cupules, although the variation present in this dataset may preclude such analysis. The parameters recorded here suggest that over 90% of carved cups have a diameter of between 30 and 80 mm, and a similar percentage have a depth of between 4 and 24 mm.

The parameters of the scoring system used to assess potential cup-marks (Chapter 4) could perhaps be refined based on these results. Further measurements from a wider range of geological surfaces and examples from different areas would be needed to take account of regional variations. Measurements made at a schist rock outcrop (very similar those in Cumbria) at Bryn Celli Ddu (BCD) on Anglesey by the Anglesey Rock Art Project are included in Figure 5-59 for comparison. The twenty-seven cups appear generally deeper than the Cumbrian examples, and have a similar range to the Low Park panel. This may be because these panels have similar geological composition, but could simply be a result of differences in the measurement technique used at BCD, which did not involve use of a gauge. It is interesting to note that, as for the Low Park panel, the BCD cups included a small number of larger, deeper outliers.

Table 5-15: Summary of cup-mark measurements in millimetres.

<table>
<thead>
<tr>
<th></th>
<th>Low Park - Slate (N=111)</th>
<th>Broadgate Park – BVS (N=103)</th>
<th>Side Pike - BVS (N=60)</th>
</tr>
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<tbody>
<tr>
<td><strong>Diameter</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum</td>
<td>30</td>
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<td>Mean</td>
<td>66</td>
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<td>58</td>
</tr>
<tr>
<td>SD</td>
<td>21.75</td>
<td>15.80</td>
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<td>Minimum</td>
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<tr>
<td>Maximum</td>
<td>11.67</td>
<td>18.00</td>
<td>19.00</td>
</tr>
<tr>
<td>Mean</td>
<td>5.90</td>
<td>8.70</td>
<td>8.00</td>
</tr>
<tr>
<td>SD</td>
<td>2.15</td>
<td>2.96</td>
<td>3.49</td>
</tr>
</tbody>
</table>
Figure 5-59: Scatter chart showing the form of cup-marks on three Cumbrian panels and on one panel at Bryn Celli Ddu (BCD) on Anglesey.

Figure 5-60: Grouped frequency distribution for diameter : depth ratios of cup-marks on all panels.
Table 5.16: Summary of recording techniques used.

<table>
<thead>
<tr>
<th>Panel characteristics</th>
<th>Low Park</th>
<th>Syke Farm</th>
<th>Broadgate Park</th>
<th>Side Pike</th>
<th>Copt Howe</th>
<th>Shap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical accessibility</td>
<td>Good (close to footpath)</td>
<td>Good (in camp site)</td>
<td>Good (public park)</td>
<td>Good (close to footpath)</td>
<td>Good (close to road)</td>
<td>Good (close to road)</td>
</tr>
<tr>
<td>Permission/ownership</td>
<td>Permission obtained from landowner</td>
<td>Permission obtained from landowner</td>
<td>Public park</td>
<td>Permission obtained from National Trust</td>
<td>Permission obtained from National Trust</td>
<td>Permission obtained from landowner</td>
</tr>
<tr>
<td>Motifs present</td>
<td>Cups only</td>
<td>Cups only</td>
<td>Cups only</td>
<td>Cups only</td>
<td>Concentric circles, chevrons, etc.</td>
<td>Cups only</td>
</tr>
<tr>
<td>Surface</td>
<td>Sloping, slightly domed</td>
<td>Horizontal, flat</td>
<td>Sloping, slightly domed</td>
<td>Sloping, flat</td>
<td>Vertical, flat</td>
<td>Horizontal, slightly domed</td>
</tr>
</tbody>
</table>

Recording Method

| EH recording form | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Rubbing           | ✓ (SB) | - | - | ✓ | ✓ (SB) | - |
| Tracing           | - | - | ✓ | ✓ | ✓ (selected areas) | - |
| Scale Drawing     | ✓ | ✓ | ✓ | ✓ | - | ✓ |
| Photography       | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Photogrammetry     | ✓ | ✓ | - | - | ✓ | - |
| Differential GPS   | ✓ | - | - | - | ✓ | - |
| Cup mark measurement | ✓ | ✓ | ✓ | ✓ | ✓ (natural) | ✓ |
In Chapter 4 a number of questions were posed concerning both accuracy and completeness of the Cumbrian rock art dataset. Were all those marks previously recorded as ‘carvings’ truly human-made? Had all the surviving panels been identified? Were the distribution patterns and contexts a true reflection of prehistoric practices and preferences? Were there any reasons, either physical or cultural, to account for the relative scarcity of rock art in the Cumbrian landscape when compared to neighbouring regions? The fieldwork and investigations described in Chapters 4 and 5 allowed some of these questions to be answered, and the various contexts, locations and styles reflected by the panels can now be analysed with greater confidence and from a more qualified perspective.

In 2003 the picture of rock art in Cumbria was of a relatively small concentration (compared with other known rock art areas), with a rich diversity of contexts and styles, although the majority of panels were related to burial monuments in the east of the county. Carvings on boulders or outcrops in the landscape were confined to the northern and eastern boundaries. The discoveries of rock art at Copt Howe and at Patterdale in 1999 appeared anomalous, the sites having no known association with monuments, and being located in the central Lake District where, other than the axe production sites at Langdale, little prehistoric activity was recorded. The evaluation of the original dataset, through site visits described in Chapter 4 resulted in the exclusion of 15 of the 76 recorded panels, either because they were believed to be geological, or because they were considered likely to have more recent origin (Table 6-1). A further 24 panels were considered doubtful and classified as ‘unresolved’. Only 37 of the 76 panels investigated (less than 50%) were confirmed to be prehistoric rock carvings with any certainty. The greatest discrepancy occurred with the panels in monumental contexts where only 17 of the 38 panels were confirmed. In a second approach, efforts to encourage new discoveries by promoting the subject of rock art to local societies and to the general public contributed to the identification of 11 new panels, described in Chapter 5, of which 7 are considered extremely likely to be rock art whilst 4 have an element of doubt (see Table 6-2). When the results of both exercises are combined (Table 6-3) it can be seen that although the total number of panels is reduced by only 3 panels, there is a substantial change to the relative frequency of rock art in different contexts: monumental rock art no longer dominates the picture, with panels in landscape and other contexts being equally represented. (A listing of all the confirmed panels, together with those which are unresolved is provided in Appendix A). Clearly, the original dataset was both inaccurate, incomplete,
and did not reflect a true picture of the surviving rock art in Cumbria. Although the revised list is considered a more reliable representation, it cannot be considered comprehensive. Given the rate of new discoveries during the last ten years, the large area and inaccessible nature of much of the region, it is highly likely that many more panels await discovery.

The third strand of research involved proactive surveys based on predictive models. Although these did not produce new discoveries, they did begin to confirm that the pattern, and perhaps the role, of rock art in Cumbria was somewhat different to that of neighbouring counties. The area at Moor Divock predicted to have a high potential for rock art (based on a landscape model of the rock art of northern England) was found to have no carvings, suggesting that the easterly traditions may not have crossed the Eden Valley into the central Lake District. Further, although surveys based on a model derived from Lakeland sites in Cumbria found no similar examples, the subsequent discovery at Broadgate Park in Grasmere indicated that the model may in fact have been valid, with a number of landscape sites on large outcrops located in valley floor locations close to major glacial lakes.

Chapter 6 now explores the revised dataset in the light of both the natural and archaeological landscapes of the region, and considers the new picture emerging, which suggests a much more varied role for rock art in Cumbria that was fundamentally different from that elsewhere in northern England. Three broad themes are considered:

1) relationships between rock art locations and natural elements in the landscape, including topography, water, and geology;
2) relationships between rock art and other known prehistoric sites; and
3) stylistic links between the rock art panels both within the study region and beyond.

1 With the possible exception of a cup-marked slab found within Cairn 4.
Table 6-1: Results of evaluation of published rock art (see Chapter 4)

<table>
<thead>
<tr>
<th></th>
<th>Confirmed rock art</th>
<th>Geological</th>
<th>Post-prehistoric carving</th>
<th>Unresolved (potential rock art)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monument</td>
<td>17</td>
<td>9</td>
<td>2</td>
<td>10</td>
<td>38</td>
</tr>
<tr>
<td>Landscape</td>
<td>12</td>
<td>3</td>
<td>-</td>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>11</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>12</td>
<td>2</td>
<td>24</td>
<td>75</td>
</tr>
</tbody>
</table>

Table 6-2: New rock art identified during the study (see Chapter 5)

<table>
<thead>
<tr>
<th></th>
<th>Confirmed panels</th>
<th>Unresolved panels (potential rock art)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monument</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Landscape</td>
<td>6</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>4</td>
<td>11</td>
</tr>
</tbody>
</table>

Table 6-3: Comparison between old (2003) and current (2007) rock art data

<table>
<thead>
<tr>
<th></th>
<th>Panels in 2003</th>
<th>Confirmed panels in 2007</th>
<th>Unresolved (potential) panels in 2007</th>
<th>Total panels in 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monument</td>
<td>38</td>
<td>17</td>
<td>10</td>
<td>27</td>
</tr>
<tr>
<td>Landscape</td>
<td>18</td>
<td>18</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>Other</td>
<td>19</td>
<td>8</td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
<td>43</td>
<td>28</td>
<td>70</td>
</tr>
</tbody>
</table>

Figure 6-1: Comparison between rock art contexts in original (2003) and revised (2007) datasets.
Figure 6-4: Confirmed (●) and possible (?) rock art sites in Cumbria, 2007.

- = monumental context; • = landscape context; ○ = other context.
6.1 Rock art and the natural landscape in Cumbria

In many cases the only surviving traces of the prehistoric communities who inhabited the complex Cumbrian landscape are their stone tools and monuments, from scatters of tiny microliths through finely smoothed axe heads to imposing stone circles and carved outcrops. These were fashioned directly from the natural landscape and perhaps the best way to understand how people exploited and responded to their surroundings is in the context of the geology and topography of the region. The county covers a diverse range of natural areas, from coastal limestone to high mountains, and although the superficial character of these areas may have changed significantly in the last few thousand years, the underlying fabric of rocks is probably little affected by the effect of humankind, so that we can still see mountains, valleys and lakes as they were experienced thousands of years ago, albeit clothed in very different vegetation. The basic geology, and the resulting natural topography has a profound influence on soils, drainage, and consequently vegetation and wildlife and much can be deduced, but snapshots of the natural environment during the prehistoric period are also available from the analysis of sediments in the lakes and tarns. Thanks largely to the pioneering work of Pennington (1970; 1975) Cumbria boasts one of the most comprehensive collections of dated pollen diagrams in Britain, allowing a more detailed picture to be constructed of the landscape onto which prehistoric communities inscribed their enigmatic motifs. Did the contours and composition of the county influence the pattern of rock art in Cumbria? In order to address this question we must first explore the physical form of the region and the natural processes which shaped it.

6.1.1 Foundations: the natural landscape of Cumbria

Some 600 million years ago most of north-western Britain was submerged beneath a deep sea which had developed in a ‘sag’ in the Earth’s crust. Surrounding landmasses were being eroded and the resulting sediments of fine silts and muds accumulated and gradually filled the trough. Major lateral pressure then caused the Cumbrian mountains to be thrust upwards. These oldest (lowest) sediments, known as the Skiddaw Slates, are formed from fine-grained silts which give rise to the distinctive smooth slopes exemplified by the Skiddaw Massif. During the subsequent Ordovician period, the compression between the crustal plates became so severe that molten material began to pour into the sea as lava and to build up volcanic cones. In some outbursts ash fell and volcanic ‘bombs’ were blown out of the vents. These lavas, ashes and tuffs make up the Borrowdale Volcanic Series (BVS) and the variety of their forms results in the broken and knobbly scenery, characteristic of the Langdale Pikes. Volcanic activity subsided in the following Silurian period (440-400 million years ago) and the mountains were again inundated. New sediments were deposited to form a third major group of rocks known as the Silurian grits and flags and these underlie the less dramatic landscape of the low fells of the south-east Lake District.

Around 400 million years ago a second episode of ‘mountain building’, the ‘Devonian’, took place. Immense lateral pressures from converging land masses buckled both the Skiddaw Slates and the volcanic rocks of the Borrowdale series. Muds, ashes, lavas and tuffs were compressed into new rock forms; under pressure and heat mineral constituents changed and new ones grew to produce
Chapter 6: Contexts and Connections

Motifs, Monuments and Mountains

'metamorphic' rocks. Also at this time large plugs of course-grained igneous rocks were injected into the roots of the Devonian mountains and these granite intrusions can now be seen at Shap, Skiddaw and Eskdale. Perhaps as a result of this uplift and the departure of the seas, the landscape became arid and may have resembled the interior mountains of the present-day Sahara. These mountains were slowly eroded right down to a flat surface, and only small patches of Devonian sedimentary rock remain visible giving rise, for example, to the distinctive pyramidal outline of Mell Fell south-east of Penrith.

By the Carboniferous period (350-270 million years ago) the land surface had become inundated by a warm, lime-rich sea filled with corals, fish and amphibians the remains of which accumulated to form the distinctive white blocky limestones which today stand highest in the east of Cumbria, on the edge of the Pennines. Later, the sea became shallower and river deltas and creeks filled with the giant ferns and conifers from which coal seams would form. A second phase of mountain building, the 'Permian', 300-260 million years ago created a great central dome, exposing the limestone which covered the central peaks to rapid erosion, revealing the older rocks beneath. At the same time, a great vertical fracture created the Eden Valley trough at the foot of the Pennine escarpment in the east of the county. The erosion of the Permian dome took place under conditions of desert weathering, much like in the North American deserts of Colorado and Nevada today: sand dunes and salt lakes filled the Eden Valley and Solway and coastal plains, and these formed the Triassic or New Red Sandstone of the Eden Valley and the St Bees coast. A final phase of mountain building, the 'Alpine', began 60 million years ago, reviving the old rocks of the Ordovician and Silurian period which again stood proudly in the centre of the region. The resulting geological map (below) shows the older, exposed rocks in three bands from north-west to south-east: Skiddaw Slates, Borrowdale Volcanics and Silurian muds, and the newer rocks, the Carboniferous limestones, and New Red Sandstones encircling the central dome.

![The solid geology of Cumbria](image-url)

**Figure 6-5: Solid geology of Cumbria.**
The creation of the rocks and mountains was just the first stage in the shaping of the Cumbrian landscape. The next major player in the creation of the natural topography was ice. The last main Ice Age, the Devensian, began around 70 thousand years ago, and lasted for over fifty thousand years. As temperatures began to fall the central mountains provided an elevated and exposed region ideal for the growth of glaciers. Here, they gouged out coves \textsuperscript{2} (now often occupied by tarns) and produced sharp arêtes. The direction and extent of the ice flow has been determined from clues left by the retreating ice. Striations (scratches) on bedrock, and the distribution of Borrowdale Volcanic rocks in the surrounding lowlands, show that the ice moved outwards from the central peaks, widening and deepening the river valleys already cut into the central dome, and scouring the deep finger-lakes which radiate like spokes from a central hub. The Eden Valley experienced substantial ice movement northwards and westwards, the direction of the flow indicated by the shape of the many drumlins which produce the characteristic 'hummocky' landscape. Glacial action also produced the distinctive U-shaped valleys of the central Lake District with their truncated spurs, hanging valleys and waterfalls, and the erosive powers of the ice further intensified the contrast between the smooth, conical mountains of Skiddaw Slate to the north-east and the craggy Borrowdale Volcanics further south.

Towards the end of the last glacial period, around 13,000 B.C., the lakes and tarns began to fill with sediments carried from the mountains by streams fed by melting glaciers. Shallow lakes such as that which once filled the head of Great Langdale disappeared as morainic dams were worn away, and it is likely that during this time the twin lakes of Buttermere and Crummock, and Derwent and Bassenthwaite, were separated by rapid deposition of material from the erosion of land surfaces yet to be stabilised by vegetation. Analysis of sediments from lakes and tarns shows that the process of deposition was interrupted by a short non-glacial phase, the Windermere (Alleröd) Interstadial, indicated by the presence of a layer of organic mud. Such deposits from Blelham Bog near Windermere are dated to 12,380 BC (Cambridge Q-758). The muds contain pollen from pioneer vegetation typical of a tundra or Alpine zone with herbaceous plants, juniper, willow and a dwarf Arctic birch, 	extit{Betula nana}. As the climate warmed and the soils became more stable and more fertile, juniper scrub spread across the Lake District valleys and lower hills, followed by birch woods in the southern valleys (Pollen Zone II). By the eleventh millennium BC however, the record indicates a return to more tundra-like vegetation, with a final cold period (Younger Dryas) between c. 10,900 and c. 9,600 BC when mean annual temperature dropped to just below 0°C, and increased rainfall led to a leaching of minerals from the new soils, resulting in the retreat of the tree line and an expansion of heathland vegetation more adapted to the humic soil (Pollen Zone III). The juvenile soils suffered from intense frost churning, and the destruction of the vegetation cover may have created the vast screes and alluvial fans seen today. This episode of cold, wet conditions saw a temporary return of the ice sheets to the higher valleys of the Lake District and it is considered unlikely that human communities were present in the area during this period. The final cold spell lasted only 500 years and, once temperatures began to climb again during the Pre-Boreal Period (Pollen Zones IV and V),

\textsuperscript{2} This is the local name for a 'corrie' (Scots), 'cwm' (Welsh') or 'cirque' (French) – a hollow.
Chapter 6: Contexts and Connections

Motifs, Monuments and Mountains

forest spread rapidly, stabilising the land surface. The resulting tundra wilderness attracted large ungulates such as reindeer, and it was perhaps the potential for hunting which drew the first humans into this inhospitable habitat.

The improving climate saw re-colonisation by shrubs such as juniper, and by the end of the 8th millennium, birch blanketed most of the lowlands. The rise in temperature also prompted the release of water from the glaciers causing a rapid rise in sea-level, but this was off-set in Northern latitudes by isostatic uplift of areas previously compressed by the ice ensuring, for a while, the survival of an extended coastal territory between Cumbria and the Isle of Man. This vast expanse of lowland plains stretched across much of the Irish Sea and incorporated the Lancashire plain to the south. By c. 7250 BC the coastline lay at c. -20 m OD (Tooley 1978) reducing the plains to a 10-15 km belt extending from Anglesey to Walney Island in Morecambe Bay (Tooley 1985: fig. 6.1). This area gradually became inundated up to c. 5200 BC when sea level reached -2 m OD (Tooley 1978), by which time Britain had become an island and climate was comparable with that of today. The early scrubland had been succeeded by hazel, pine, oak and alder which together formed a closed deciduous forest such that non-tree pollen fell to less than 10%. Soils matured and stabilised and as the climate improved and vegetation became established the great herds were unable to adapt to the closed environment; the expanding forests became populated by red deer, aurochs and wild pig. By around 5500 BC the climate had become altogether less hostile and from the vantage point of Scafell Pike (978 m) it would have been possible to see mixed oak forest colonising the lower fells, with pine and birch woodland up to circa 750 m; only the higher Lakeland fells and some of the north-facing slopes were completely clear.

3 Of the 71 recognised Lake District 'mountains' only 37 are higher than 763 m. Harrison Stickle, the highest of the Langdale Pikes is a mere 736 m.
## Table 6-4: Geological events in Cumbria after (Shackleton 1966)

<table>
<thead>
<tr>
<th>Millions of years from present</th>
<th>Geological Period</th>
<th>Mountain Building Phase</th>
<th>Geological events in Cumbria</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-3</td>
<td>CENOZOIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Tertiary</td>
<td>Alpine</td>
<td>Old mountains of central dome ‘revived’.</td>
</tr>
<tr>
<td>70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>135</td>
<td>MESOZOIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cretaceous</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>180</td>
<td>Jurassic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>225</td>
<td>Triassic</td>
<td>Hercynian</td>
<td>Central dome created and limestone eroded; Eden Valley formed.</td>
</tr>
<tr>
<td>270</td>
<td>Permian</td>
<td></td>
<td></td>
</tr>
<tr>
<td>350</td>
<td>Carboniferous</td>
<td></td>
<td>Creation of limestone and coal seams</td>
</tr>
<tr>
<td>400</td>
<td>Devonian</td>
<td>Caledonian</td>
<td>Mountains eroded to flat plain. Rocks buckled by pressure and heat. Mountains created and new metamorphic rocks produced.</td>
</tr>
<tr>
<td>440</td>
<td>Silurian</td>
<td></td>
<td>Volcanic activity subsides; creation of Silurian Muds</td>
</tr>
<tr>
<td>500</td>
<td>Ordovician</td>
<td></td>
<td>Volcanic activity and creation of Borrowdale Volcanic Series: lava, ash, tuff. Deposition of Skiddaw Slates</td>
</tr>
<tr>
<td>550</td>
<td>Cambrian</td>
<td>Charnian</td>
<td></td>
</tr>
<tr>
<td>600</td>
<td>Pre-Cambrian</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 6-5: Pollen Zones

<table>
<thead>
<tr>
<th>Zone</th>
<th>Biostratigraphic division</th>
<th>Dates (uncalibrated BC)</th>
<th>Dominant plant type</th>
<th>Archaeological periods</th>
<th>Geological stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>IX</td>
<td>Sub-Atlantic</td>
<td>500 to present</td>
<td>Spread of grasses, pine and beech woodland</td>
<td>Iron Age onwards</td>
<td>Flandrian</td>
</tr>
<tr>
<td>VIII</td>
<td>Sub-Boreal</td>
<td>3000 - 500</td>
<td>Mixed oak forest</td>
<td>Bronze Age and Iron Age</td>
<td>Flandrian</td>
</tr>
<tr>
<td>VII</td>
<td>Atlantic</td>
<td>5500 - 3000</td>
<td>Mixed oak forest</td>
<td>Neolithic and Bronze Age</td>
<td>Flandrian</td>
</tr>
<tr>
<td>V and VI</td>
<td>Boreal</td>
<td>c. 7,700 - 5,500</td>
<td>Pine/birch forest and increasing mixed forest</td>
<td>Mesolithic</td>
<td>Flandrian</td>
</tr>
<tr>
<td>IV</td>
<td>Pre-Boreal</td>
<td>c. 8,300 - 7,700</td>
<td>Birch forest</td>
<td>Late Upper Palaeolithic and early - mid Mesolithic</td>
<td>Devensian glaciation and Flandrian</td>
</tr>
<tr>
<td>III</td>
<td>Younger Dryas</td>
<td>c. 8,800 - 8,300</td>
<td>Tundra</td>
<td>Late Upper Palaeolithic</td>
<td>Devensian</td>
</tr>
<tr>
<td>II</td>
<td>Allerød (Windermere) Oscillation</td>
<td>c. 9,800 - 8,800</td>
<td>Tundra, park tundra and birch forest</td>
<td>Late Upper Palaeolithic</td>
<td>Devensian</td>
</tr>
<tr>
<td>Ic</td>
<td>Older Dryas</td>
<td>c. 10,000 - 9,800</td>
<td>Tundra</td>
<td>Late Upper Palaeolithic</td>
<td>Devensian</td>
</tr>
<tr>
<td>Ib</td>
<td>Bowling Oscillation</td>
<td>c. 10,500 - 10,000</td>
<td>Park tundra</td>
<td>Late Upper Palaeolithic</td>
<td>Devensian</td>
</tr>
<tr>
<td>Ia</td>
<td>Oldest Dryas</td>
<td>c. 13,000 - 10,500</td>
<td>Tundra</td>
<td>Late Upper Palaeolithic</td>
<td>Devensian</td>
</tr>
</tbody>
</table>
6.1.2 Rock art and the natural landscape

In Chapter 3 a number of approaches were described which attempted to relate rock art to its wider environment and in particular to natural elements of the landscape. These varied from statistical models based on location and elevation data, using GIS to examine spatial patterning, view-sheds and intervisibility, through to more experiential, ‘phenomenological’ studies which considered less tangible aspects of the human relationship with the landscape. The following section borrows from several of these themes to examine whether the geological, topographical and environmental map of Cumbria can help to account for the distribution of rock art panels currently known in the county. The Countryside Character Areas described in Chapter 1 reflect natural divisions in the region rather than modern land-use, and these provide a useful way to examine the broad patterning of the rock art in relation to the natural setting.

Analysis of the panels confirmed to be rock art (Table 6-6) shows that the highest concentration of panels occurs in the Eden Valley character area (no. 9) with almost 20 panels per 1000 ha. The Orton Fells (no. 17), Cumbria High Fells (no. 8) and West Cumbrian Coastal Plain (no. 7) areas have roughly similar concentrations of rock art between 6 and 7 panels per 1000 ha. When different contexts are also considered (Figure 6-7), it can be seen that rock art in landscape situations is confined to just three areas: the Border Moors and Forests (no. 5), the North Pennines (no. 10) and the High Fells (no. 8) where the majority of such panels are found. Panels associated with prehistoric monuments or having no secure context are more widespread but the majority are found in the Eden Valley (no. 9). The geographical distribution of both confirmed and possible panels is shown in Figure 6-8.
Table 6-6: Distribution frequency across Countryside Character Areas (confirmed panels only).

<table>
<thead>
<tr>
<th>Character Area</th>
<th>Area (ha)</th>
<th>No. panels</th>
<th>Panels per 1000 ha.</th>
<th>% of total (44)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eden Valley</td>
<td>810</td>
<td>16</td>
<td>19.8</td>
<td>36.4</td>
</tr>
<tr>
<td>Orton Fells</td>
<td>293</td>
<td>2</td>
<td>6.8</td>
<td>4.5</td>
</tr>
<tr>
<td>West Cumbrian Coastal Plain</td>
<td>493</td>
<td>3</td>
<td>6.1</td>
<td>6.8</td>
</tr>
<tr>
<td>Cumbria High Fells</td>
<td>1990</td>
<td>13</td>
<td>6.5</td>
<td>29.5</td>
</tr>
<tr>
<td>Solway Basin</td>
<td>984</td>
<td>2</td>
<td>2.0</td>
<td>4.5</td>
</tr>
<tr>
<td>Cumbria Low Fells</td>
<td>691</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Howgill Fells</td>
<td>104</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Morecambe Bay Limestone</td>
<td>400</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Border Moors &amp; Forests*</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>11.4</td>
</tr>
<tr>
<td>North Pennines*</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>6.8</td>
</tr>
<tr>
<td>Yorkshire Dales*</td>
<td>-</td>
<td>0</td>
<td>-</td>
<td>0</td>
</tr>
</tbody>
</table>

* Cumbrian section only

Relative presence of rock art across Character Areas, showing representation of different contexts

Figure 6-7: Distribution of panels across Countryside Character Areas.
Figure 6-8: Distribution of confirmed (●) and possible (?) rock art panels across Character Areas.
- ● = monumental context; ● = landscape context; ● = other context.
Geology

The character areas described above were formed largely as a result of variations in the underlying solid geology. The importance of different bedrock to the location of rock art in the landscape has been highlighted by studies such as those by Diaz-Andreu (2001) and Carr (2003), and in Chapter 2 we saw that differences in geology have been used to explain the northern distribution pattern of British carvings. There are two elements to consider here: the nature of the underlying rock, and that of the carved panel, which may be quite different. Both cited studies relate to the solid geology of the study region, and indeed most analyses of this type relate to ‘landscape’ art, where panels comprise either outcropping rock or boulders of local origin. For example, the vast majority of carved stones on Ilkley Moor in West Yorkshire are millstone grit, the same as the bedrock on which they lie. In Cumbria, only 18 confirmed panels are on outcropping bedrock, or local boulders in the landscape; those in monumental contexts or considered ‘portable’ may have originated elsewhere and have little relationship with the underlying geology of their final resting place. Indeed, the larger number of erratic boulders scattered across the region by the glaciers means that a large proportion of stones are not native to their present situation. The preferential selection of stones with specific qualities for inclusion in monumental settings has been noted by a number of authors with shape, colour, texture all seen as important elements. In the case of erratics, the exotic nature and origin of the stones may have been intrinsic to their role and to their value (Richards 1993). Less research has been carried out into the selection of surfaces for carving in landscape situations although, as noted in Chapter 3, work by Tilley in Scandinavia (Tilley 2004) and Jones in Kilmartin (Jones 2005) has highlighted the incorporation of geological shapes and surface details into carved designs.

If the distribution of the Cumbrian panels is placed over a simplified geological map no obvious patterning is apparent. If the panels are considered by context (Figure 6-9), however, a more interesting picture emerges with a clear division between rock art in monumental and other contexts, and that in landscape settings. Monumental panels are largely confined to the red sandstone of the Eden Valley and neighbouring Orton Fells (limestone), with just two outlying panels at Kirksanton on the south coast (standing stones), and one at Tortie Cottage in the north-east (another standing stone). Carved rocks in the landscape occur primarily in the central Lake District, with two panels on Skiddaw Slate and seven on Borrowdale Volcanics, and just a few exceptions on the softer sedimentary stone of the northern and eastern margins. There are no examples of landscape panels on the red sandstone, and no examples in monumental settings on the volcanic areas.

The distribution of monumental carvings is unsurprising since the Eden Valley has a high concentration of prehistoric monuments, and there are practical reasons why this fertile, sheltered valley may have been attractive to various communities, as described in the following section. Yet prehistoric monument building was not confined to this area, and there are many examples of Neolithic and Bronze Age monuments in the central Lake District, for example the stone circles at Castlerigg and Swinside, the ring cairns at Stickle Tarn, Great Langdale, and the long cairns on Stockdale Moor. The current absence of carvings associated with any of these monuments may yet be
challenged (the ‘vanished’ carvings at Castlerigg may be detected, and there is an unconfirmed report of a cup mark on a stone at Sampson’s Bratful), but for now remains unexplained. A detailed survey of all extant monuments in the High Fells Character Area would perhaps confirm or disprove the current observations.

If the geology of the panels is considered (Table 6-7 and Table 6-8) it can be seen that all of the landscape panels are of local material (50% are on outcrop), but several stones in monumental and other settings do not have local origins. For example in the Eden Valley not all the carved stones are of local red sandstone. The kerbstones at Little Meg and Glassonby are ‘whinstone’ and ‘cobblestone’ respectively, the Old Parks slabs and the Redhills cist are white sandstone, and the Eden Hall stone is gabbro (possibly from Carrock Fell), a material also favoured for making stone axe heads. Another example of the use of ‘exotic’ stone is found at Kirksanton on the south coast where the two cup-marked standing stones are scoured volcanic erratics, despite an abundance of locally available stone.

![Figure 6-9: Distribution of confirmed (●) and possible (?) rock art sites in relation to solid geology.](image)

**Elevation, topography and natural features**

A second geological component of natural areas is their relative elevation and general topography. The distinctive appearance of each area was shaped over millennia, by glacial and other weathering of the landforms created during the original tectonic and volcanic formation of the county. Cumbria consequently has a diverse array of contrasting landscapes ranging from the low-lying coastal plains
through to rolling hills, limestone uplands and gently undulating heather moors, through to the extremes of the central fells with high peaks and deep valleys. Striking natural features are abundant in this region of crags and waterfalls, but equally impressive are the powerful rivers of the Eden and Lune which cut through limestone and red sandstone gorges to the east, whilst to the west the coast provides an added dimension with dramatic sandstone cliffs and limestone caves.

It has been noted in earlier chapters that the main clusters of rock art elsewhere in the east of Britain tend to be located on upland moors within a band at approximately 50-80% of the maximum local elevation m OD. These locations are generally gently sloping or flat, often with extensive, open views. Such landscapes do exist in Cumbria, predominantly around the edges of the central fells, forming a band which links lower, more fertile plains and valleys to the distinctive, exaggerated topography of the glacially formed central mountains. Examples include Birker Fell to the south-west, Moor Divock to the north-east, the Orton Fells to the east, and the Howgills to the south-east. With the exception of the Howgills (which appear to be archaeologically barren) all such areas have produced a variety of material indicating prehistoric occupation, with monumental complexes, settlements, and field systems much in evidence.

Elevation data for the Cumbrian rock art is presented in Figure 6-10; distribution with respect to topography is shown in Figure 6-11. Excluding portable examples which may have been moved several times, the highest panel is Leonard’s Cragg at 270 m with the majority (72%) lying between 110 and 250 m OD. Of the panels in landscape settings only those on the northern and eastern fringes (Gillalees, Tortie Cottage and Leonard’s Cragg) are on elevated, open moorland; the remainder are located at or just above the valley bottom within the central glacial valleys. The majority of the monumental panels are also low-lying, close to the River Eden or to the west coast, with the exception of the Shap Avenue stone on the Orton Fells (250 m OD). Three of the ‘portable’ panels, found at Crosby Ravensworth, Castle Folds and North Stainmore respectively, are a closer match to the expected distribution, but clearly the overall pattern of rock art in the Cumbrian landscape is very different to that of neighbouring counties, particularly for those panels in landscape settings within the High Fells area.
Figure 6-10: Panel elevation for all confirmed rock art in Cumbria.
A substantial body of rock art literature points to an association with striking natural features such as mountains, unusual rock formations, waterfalls and cliffs, and also to associations with bodies of water including lakes, rivers and the sea. The distribution map for Cumbria (Figure 6-12) suggests a number of possibilities for such relationships with the landscape. There appear to be two strong candidates for links with water: several landscape panels are clearly positioned close to major lakes, and several monumental panels appear closely associated with the River Eden and its tributaries (it is interesting to note that there is no similar association with the River Lune which bounds the Howgill Fells to the south).

Connections with mountains are difficult to determine in an area where most views tend to have some potential candidates, and the landscape sites in the central fells appear surrounded by peaks. Map analysis cannot reveal the quality of views from the sites, and the presence of prehistoric vegetation must also be considered. This said, the panels at Copt Howe and Side Pike lie close to a very
distinctive range of fells, the Langdale Pikes, known to have been important throughout the Neolithic period as a source of stone for Group VI axes. The panel at Broadgate Park, Grasmere lies at the foot of much more modest fell, Helm Crag, well known for the striking rock formation at its summit.

The analysis has revealed that it is almost impossible to separate human and environmental factors in the quest to understand the distribution of rock art; they are inextricably linked, the location of early settlers being related to natural resources and topography, and vegetation being dramatically altered by human activity. The next section takes a more detailed look at the evidence for human activity in prehistoric Cumbria and considers how this may relate to the presence of rock art.
<table>
<thead>
<tr>
<th>Panel ID</th>
<th>Panel Name</th>
<th>Panel Type</th>
<th>Character area found</th>
<th>Elevation to nearest 10 m OD</th>
<th>Situation</th>
<th>Underlying geology</th>
<th>Panel geology</th>
<th>Motifs</th>
</tr>
</thead>
<tbody>
<tr>
<td>CU0001</td>
<td>Copt Howe A</td>
<td>Boulder</td>
<td>High Fells</td>
<td>100</td>
<td>Valley floor</td>
<td>BVS</td>
<td>Andesite</td>
<td>Complex, PG style</td>
</tr>
<tr>
<td>CU0002</td>
<td>Copt Howe B</td>
<td>Boulder</td>
<td>High Fells</td>
<td>100</td>
<td>Valley floor</td>
<td>BVS</td>
<td>Andesite</td>
<td>Incomplete rings</td>
</tr>
<tr>
<td>CU0003</td>
<td>Place Fell Cottage</td>
<td>Outcrop</td>
<td>High Fells</td>
<td>170</td>
<td>Valley floor</td>
<td>BVS</td>
<td></td>
<td>Multiple cups, ovals</td>
</tr>
<tr>
<td>CU0004</td>
<td>Greenrigg</td>
<td>Outcrop</td>
<td>High Fells</td>
<td>160</td>
<td>Valley side</td>
<td>BVS</td>
<td></td>
<td>Multiple cups, parallel grooves</td>
</tr>
<tr>
<td>CU0005</td>
<td>Crookabeck</td>
<td>Outcrop</td>
<td>High Fells</td>
<td>150</td>
<td>Valley floor</td>
<td>BVS</td>
<td></td>
<td>Multiple cups, ovals, cup-and rings</td>
</tr>
<tr>
<td>CU0006</td>
<td>Beckstones</td>
<td>Outcrop</td>
<td>High Fells</td>
<td>160</td>
<td>Valley side</td>
<td>BVS</td>
<td></td>
<td>Multiple cups, grooves</td>
</tr>
<tr>
<td>CU0008</td>
<td>Tortie 2</td>
<td>Boulder</td>
<td>North Pennines</td>
<td>180</td>
<td>Hillside</td>
<td>Sandstone</td>
<td>Sandstone</td>
<td>Multiple cups</td>
</tr>
<tr>
<td>CU0009</td>
<td>Gillalees 1</td>
<td>Boulder</td>
<td>Border Moors &amp; Forests</td>
<td>220</td>
<td>Hillside</td>
<td>Sandstone</td>
<td>Sandstone</td>
<td>Multiple cups</td>
</tr>
<tr>
<td>CU0010</td>
<td>Gillalees 2</td>
<td>Boulder</td>
<td>Border Moors &amp; Forests</td>
<td>220</td>
<td>Hillside</td>
<td>Sandstone</td>
<td>Sandstone</td>
<td>Multiple cups</td>
</tr>
<tr>
<td>CU0011</td>
<td>Gillalees 3</td>
<td>Boulder</td>
<td>Border Moors &amp; Forests</td>
<td>220</td>
<td>Hillside</td>
<td>Sandstone</td>
<td>Sandstone</td>
<td>Multiple cups</td>
</tr>
<tr>
<td>CU0012</td>
<td>Gillalees 4</td>
<td>Boulder</td>
<td>Border Moors &amp; Forests</td>
<td>220</td>
<td>Hillside</td>
<td>Sandstone</td>
<td>Sandstone</td>
<td>Multiple cups</td>
</tr>
<tr>
<td>CU0055</td>
<td>Leonard's Cragg</td>
<td>Outcrop</td>
<td>North Pennines</td>
<td>270</td>
<td>Hillside</td>
<td>Limestone</td>
<td>Limestone</td>
<td>Concentric penannular with radial groove</td>
</tr>
<tr>
<td>CU0085</td>
<td>Burthalymp Howe</td>
<td>Outcrop</td>
<td>High Fells</td>
<td>90</td>
<td>Hillside</td>
<td>BVS</td>
<td>BVS</td>
<td>Single cup</td>
</tr>
<tr>
<td>CU0087</td>
<td>Low Park</td>
<td>Outcrop</td>
<td>High Fells</td>
<td>120</td>
<td>Valley floor</td>
<td>Skiddaw Slate</td>
<td>Slate</td>
<td>Multiple cups</td>
</tr>
<tr>
<td>CU0090</td>
<td>Syke Farm</td>
<td>Outcrop</td>
<td>High Fells</td>
<td>110</td>
<td>Valley floor</td>
<td>Skiddaw Slate</td>
<td>Slate</td>
<td>Multiple cups</td>
</tr>
<tr>
<td>CU0103</td>
<td>Side Pike</td>
<td>Outcrop</td>
<td>High Fells</td>
<td>120</td>
<td>Valley side</td>
<td>BVS</td>
<td>Rhyolite (?)</td>
<td>Multiple cups</td>
</tr>
<tr>
<td>CU0104</td>
<td>Broadgate Park</td>
<td>Outcrop</td>
<td>High Fells</td>
<td>70</td>
<td>Valley floor</td>
<td>BVS</td>
<td>BVS</td>
<td>Multiple cups</td>
</tr>
<tr>
<td>CU0115</td>
<td>Gillalees 5</td>
<td>Boulder</td>
<td>Border Moors &amp; Forests</td>
<td>220</td>
<td>Hillside</td>
<td>Sandstone</td>
<td>Sandstone</td>
<td>Multiple cups</td>
</tr>
</tbody>
</table>
Table 6-8: Characteristics of panels in monumental contexts

<table>
<thead>
<tr>
<th>Panel ID</th>
<th>Panel Name</th>
<th>Monument type</th>
<th>Panel type</th>
<th>Character area found</th>
<th>Elevation to nearest 10 m OD</th>
<th>Underlying geology</th>
<th>Panel geology</th>
<th>Motifs</th>
</tr>
</thead>
<tbody>
<tr>
<td>CU0007</td>
<td>Tortie 1</td>
<td>Standing stone</td>
<td>Fallen upright</td>
<td>North Pennines</td>
<td>180</td>
<td>Sandstone</td>
<td>Sandstone</td>
<td>Multiple cups, cup-and rings</td>
</tr>
<tr>
<td>CU0013</td>
<td>Long Meg</td>
<td>Standing stone</td>
<td>Standing stone</td>
<td>Eden Valley</td>
<td>170</td>
<td>Red sandstone</td>
<td>Red sandstone</td>
<td>Concentric rings with central cups, spirals</td>
</tr>
<tr>
<td>CU0023</td>
<td>Little Meg 1</td>
<td>Kerbed cairn</td>
<td>Kerbstone</td>
<td>Eden Valley</td>
<td>170</td>
<td>Red sandstone</td>
<td>Whinstone</td>
<td>Spiral linked to concentric rings. No central cup.</td>
</tr>
<tr>
<td>CU0024</td>
<td>Little Meg 2</td>
<td>Kerbed cairn</td>
<td>Cist stone</td>
<td>Eden Valley</td>
<td>170</td>
<td>Red sandstone</td>
<td>Red sandstone</td>
<td>Concentric rings, central cups</td>
</tr>
<tr>
<td>CU0025</td>
<td>Little Meg 3</td>
<td>Kerbed cairn</td>
<td>Cist stone</td>
<td>Eden Valley</td>
<td>170</td>
<td>Red sandstone</td>
<td>Red sandstone</td>
<td>Cup and ring with groove</td>
</tr>
<tr>
<td>CU028</td>
<td>Glassonby 1</td>
<td>Kerbed cairn</td>
<td>Kerbstone</td>
<td>Eden Valley</td>
<td>130</td>
<td>Red sandstone</td>
<td>Cobblestone</td>
<td>Concentric circles, chevron</td>
</tr>
<tr>
<td>CU0030</td>
<td>Glassonby 3</td>
<td>Kerbed cairn</td>
<td>Cobble</td>
<td>Eden Valley</td>
<td>130</td>
<td>Red sandstone</td>
<td>Red sandstone</td>
<td>Single cup</td>
</tr>
<tr>
<td>CU0031</td>
<td>Glassonby 4</td>
<td>Kerbed cairn</td>
<td>Cobble</td>
<td>Eden Valley</td>
<td>130</td>
<td>Red sandstone</td>
<td>Red sandstone</td>
<td>Single cup</td>
</tr>
<tr>
<td>CU0033</td>
<td>Old Parks 3</td>
<td>Burial cairn</td>
<td>Upright slab</td>
<td>Eden Valley</td>
<td>110</td>
<td>Red sandstone</td>
<td>Sandstone</td>
<td>Curvilinear grooves</td>
</tr>
<tr>
<td>CU0034</td>
<td>Old Parks 4</td>
<td>Burial cairn</td>
<td>Upright slab</td>
<td>Eden Valley</td>
<td>110</td>
<td>Red sandstone</td>
<td>Sandstone</td>
<td>Curvilinear grooves</td>
</tr>
<tr>
<td>CU0035</td>
<td>Old Parks 5</td>
<td>Burial cairn</td>
<td>Upright slab</td>
<td>Eden Valley</td>
<td>110</td>
<td>Red sandstone</td>
<td>Sandstone</td>
<td>Curvilinear grooves</td>
</tr>
<tr>
<td>CU0037</td>
<td>Redhills</td>
<td>Burial cairn</td>
<td>Cist cover</td>
<td>Eden Valley</td>
<td>150</td>
<td>Red sandstone</td>
<td>Sandstone</td>
<td>Penanulars, cups, grooves, diffuse pecking</td>
</tr>
<tr>
<td>CU0039</td>
<td>Moor Divock 2</td>
<td>Burial cairn</td>
<td>Slab</td>
<td>High Fells</td>
<td>310</td>
<td>Limestone</td>
<td>BVS</td>
<td>Two cups</td>
</tr>
<tr>
<td>CU0043</td>
<td>Kirkanton 1</td>
<td>Unknown</td>
<td>Standing stone</td>
<td>W. Cumbrian Coastal Plain</td>
<td>10</td>
<td>Sandstone</td>
<td>BVS</td>
<td>Cups</td>
</tr>
<tr>
<td>CU0044</td>
<td>Kirkanton 2</td>
<td>Unknown</td>
<td>Standing stone</td>
<td>W. Cumbrian Coastal Plain</td>
<td>10</td>
<td>Sandstone</td>
<td>BVS</td>
<td>Cups</td>
</tr>
<tr>
<td>CU0084</td>
<td>Shap Avenue</td>
<td>Avenue</td>
<td>Standing stone</td>
<td>Orton Fells</td>
<td>250</td>
<td>Limestone</td>
<td>Granite</td>
<td>Two cups</td>
</tr>
<tr>
<td>Panel ID</td>
<td>Panel Name</td>
<td>Context</td>
<td>Panel type</td>
<td>Character area found</td>
<td>Elev. to nearest 10 m OD</td>
<td>Bedrock geology</td>
<td>Panel geology</td>
<td>Motifs</td>
</tr>
<tr>
<td>----------</td>
<td>------------------</td>
<td>---------------</td>
<td>------------</td>
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<td>--------------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>CU0027</td>
<td>Penrith</td>
<td>Surface find</td>
<td>Cobble</td>
<td>Eden Valley</td>
<td>140</td>
<td>Red sandstone</td>
<td>Red sandstone</td>
<td>Cups</td>
</tr>
<tr>
<td>CU0054</td>
<td>Castlefolds</td>
<td>IA settlement</td>
<td>Cobble</td>
<td>Orton Fells</td>
<td>400</td>
<td>Limestone</td>
<td>Sandstone</td>
<td>Cup</td>
</tr>
<tr>
<td>CU0057</td>
<td>Ruckcroft</td>
<td>Surface find</td>
<td>Cobble</td>
<td>Eden Valley</td>
<td>210</td>
<td>Red sandstone</td>
<td>Red sandstone</td>
<td>Penanular, cups</td>
</tr>
<tr>
<td>CU0058</td>
<td>Stagstones Farm</td>
<td>Wall</td>
<td>Slab</td>
<td>Eden Valley</td>
<td>220</td>
<td>Red sandstone</td>
<td>Red sandstone</td>
<td>Penanular, cups</td>
</tr>
<tr>
<td>CU0059</td>
<td>Eden Hall</td>
<td>Partially buried</td>
<td>Boulder</td>
<td>Eden Valley</td>
<td>120</td>
<td>Red sandstone</td>
<td>Gabbro</td>
<td>Cups &amp; rings, groove</td>
</tr>
<tr>
<td>CU0061</td>
<td>Dean</td>
<td>Surface find</td>
<td>Boulder</td>
<td>W. Cumbrian Coastal Plain</td>
<td>100</td>
<td>Sandstone</td>
<td>Sandstone</td>
<td>Concentric rings, cups</td>
</tr>
<tr>
<td>CU0062</td>
<td>Maryport 1</td>
<td>Surface find</td>
<td>Cobble</td>
<td>Solway Basin</td>
<td>50</td>
<td>Red sandstone</td>
<td>Red sandstone</td>
<td>Concentric rings with central cup</td>
</tr>
<tr>
<td>CU0063</td>
<td>Maryport 2</td>
<td>Surface find</td>
<td>Slab</td>
<td>Solway Basin</td>
<td>50</td>
<td>Red sandstone</td>
<td>Red sandstone</td>
<td>Concentric rings, no central cup</td>
</tr>
<tr>
<td>CU0069</td>
<td>Longsleddale</td>
<td>Surface find</td>
<td>Cobble</td>
<td>High Fells</td>
<td>Unknown</td>
<td>BVS</td>
<td>BVS</td>
<td>Ring, no central cup; cup</td>
</tr>
</tbody>
</table>
6.2 Rock art and the archaeological landscape

The analysis so far has shown that the majority of monumental rock art is confined to the Eden Valley and neighbouring Orton Fells, with carvings in a landscape context concentrated in the valleys of the central fells with just a few examples around the northern and eastern fringes of the county. A number of suggestions were made for this distribution, including relationships with the natural landscape, and factors relating population distribution and settlement patterns were touched upon. The following section reviews the archaeological record for the prehistoric period in Cumbria, and considers the extent to which the pattern of rock art may be related to human exploitation of the landscape, beginning with a brief consideration of some factors which may have affected current understanding of prehistoric activity in the county. Numbers in parenthesis refer to sites located on the map shown in Figure 6-14.

6.2.1 Subsistence, exploitation and transformation

The earliest evidence of human activity in Cumbria comes from the northern shore of Morecambe Bay at Kirkhead Cave (1), Lower Allithwaite. Upper Palaeolithic hunters occupied the cave leaving behind their flint tools and an antler, radiocarbon dated to c. 10,500 B.C. (Wood et al. 1970). There is evidence that numerous caves in the limestone of South Cumbria were used (e.g. Salisbury 1986; Salisbury 1988; Salisbury 1992) and on the Furness Peninsula (Young 2002). This coastal territory provided a low-lying, climatically favourable habitat, with direct access to extensive hunting grounds so that it is not unreasonable to assume that it was a preferred location for early settlers, yet the presence of cultural and faunal material in caves may result from conditions which favour survival, and reflect a much wider occupation and use of the landscape (Hodgkinson et al. 2000: 150). Fuller understanding is frustrated by the incomplete nature of reports from the original excavation at Kirkhead and discussions continue (Gale & Hunt 1985; Salisbury 1986; Tipping 1986; Gale & Hunt 1990).

Increasing temperatures during the Upper Palaeolithic were accompanied by a rise in sea-level and the marine transgression flooded the Irish Sea basin, reaching Morecambe Bay by about 7200 bc (Higham 1986). The loss of the lowland plains west of the Isle of Man reduced the territory available to fauna, but the warmer climate (by 6000 bc temperatures had reached an average a little higher than at present) opened up new areas of the north-west previously outside the comfort zone of the post-glacial communities and the animals they hunted. This period is associated with the appearance of flint artefacts indicating the presence of more prevalent subsistence communities. Higham suggests that "the increase in evidence for human subsistence activity from the seventh millennium may be associated with the drowning of the preferred habitat of the North Sea basin and forced migration of human communities to areas above OD." (1986: 20-21).

The changes in flora and fauna described in Section 6.1 prompted alternative means of survival, and the production of new tools to deal with the challenges of hunting in the expanding woodlands. One
such development was the reduction in the size of flints to 'microlithic' scale, hafted with the by now abundant wood to create composite tools. Scatters of these tools now comprise the bulk of the record for this period in Cumbria, and much of the current knowledge of Mesolithic activities in the region is due to the efforts of Jim and Peter Cherry, whose extensive surveying work over 35 years has resulted in a detailed record of lithic and ceramic scatters. Their work centred on two major areas which had previously produced significant evidence of prehistoric activity: the south west coastal strip (1982; 1984; 1985; 1986; 1987; 2001), and the limestone uplands of eastern Cumbria (1984; 1987; 1992).

There have been few finds of Mesolithic material from the central and western Lake District, perhaps reflecting the nature of the terrain; none have been reported from the north-west coastline facing the Solway, possibly due to the less favourable climate with cold prevailing winds – although it may also be related to heavy industrialisation which has restricted surveys.

The Cherrys' work revealed very little Early Mesolithic material prompting the comment: "at present there is more evidence for human activity in Cumbria during the Late Glacial period than during the Early Mesolithic" (Cherry & Cherry 2002: 2). The lack of earlier traces on the current coastline can be explained by the change in sea level – many sites may now lie submerged, and survey methods used on the uplands would make the detection of low level activity problematic. Later Mesolithic material is more abundant with coastal assemblages found as a result of ploughing, or on exposed gravel beds in the sand-dunes, and upland finds associated with mole-hills and erosion scars. A number of clusters have been identified on the west coast, notably on the raised beach at Eskmeals (9) (Cherry & Cherry 2002) and the sea cliffs at Drigg (2) (Cherry 1982; Cherry & Cherry 1985; Cherry 2001), where coastal communities used local pebble flint from the beaches. Further south in the St Bees area, volcanic tuff pebbles from glacial deposits were also exploited to produce a variety of tools. Work at nearby Williamson's Moss has revealed how the dynamic wetland environment adjacent may have attracted repeated settlement, with the Esk Estuary providing marine and river resources as well as easy access up the valley. Palaeoecological evidence shows a woodland clearance initiated locally at c 4458-4047 cal BC (c 5440+/-70 BP, SRR-3065), and this may reflect long term settlement along the coast (Bonsall 1981). More widespread use of the landscape is indicated by the charcoal record found in many mire sequences. Hodgkinson et al. suggest that the ubiquity of burning within Wetland sequences suggests an anthropogenic origin for at least a proportion of these events, arguing that evidence of several small episodes of burning around the southern edge of the Solway Moss (5) may be indicative of "widespread and perhaps large-scale landscape management in the late Mesolithic" (Hodgkinson et al. 2000). There is currently little evidence for a Mesolithic presence in the central Lake District, with just a few microliths found near to the Roman Fort at Waterhead, Ambleside (6), although Bradley and Edmonds speculate that forays from the coast, following rivers upstream may have led to the early discovery and exploitation of andesite in the central fells (1993). To the east, in the limestone uplands, Late Mesolithic assemblages are found between 275 and 300 metres OD (Cherry & Cherry 1987; Cherry & Cherry 1992), and finds include bone harpoon heads at Crosby-on-Eden (6) (Hodgson 1895). In the Shap area

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4 The collection of a Roman 'antiquarian' stationed at Watercrook who visited the coastal fort at Ravenglass?
the clusters appear to follow the edge of the limestone where it abuts rocks of the Borrowdale Volcanic Series. The raw materials used are mainly local cherts although flint, chalk and pebble are also found. The pebble flints resemble those from central and eastern Yorkshire, suggesting exchange networks. At this time it appears that our Mesolithic ancestors had little permanent effect on the landscape, remaining largely confined to the treeless coastal areas and without the technical ability to modify their environment, but from around 5000 BC disturbed ground and associated small gaps in the woodland cover become more common across the region, and by c.3900 BC analysis of pollen indicates the first major attempts by communities to take more widespread and long-term control of their surroundings.

The beginning of the Neolithic period in Britain is traditionally marked by the appearance of ceremonial and funerary monuments alongside an increasingly settled and agricultural way of life. Diagnostic artefacts include pottery, and new, distinctive lithic forms including stone axe-heads. These definitions are drawn largely from sites and finds across southern England, from which dating evidence places the transition in the first few centuries after 4000 BC, and it is now widely acknowledged, however, that there are significant regional variations in both the chronology of the change and extent to which it occurred, as well as distinct differences in the practices and the material culture resulting in different parts of Britain. Firm Neolithic dates in Cumbria are scarce; the North West Regional Framework Prehistoric Assessment document notes that “Other than the presence of monuments the majority of the record for Neolithic occupation comprises surface lithic scatters and clearances in pollen diagrams...There is only a small amount of excavated evidence, and few stratigraphically secure assemblages” (2005: 7). One such assemblage comes from the remarkable site at Ehenside Tarn (8) on the west coast which, along with the nearby settlements at Eskmeals (9) and Williamson’s Moss (4), was being repeatedly re-used. Large numbers of artefacts were recovered from the drained tarn in 1869 and including charcoal, nuts, leaves, animal bones, flint and stone tools, pottery, axe-marked wood and two wooden paddles (Darbishire 1873). The site was systematically excavated and has been re-examined and re-interpreted a number of times (e.g. Fair 1932; Walker 2001). There remains some doubt as to the exact provenance of some of the wooden items, but carbon dates\(^5\) range from 4500-3040 CAL BC (C-462) to 2300-1520 CAL BC (BM-68) showing a wide spread from the late Mesolithic to the middle Bronze Age. The assemblage includes a number of stone axe heads in various states of completion (rough-out, part polished and finished) in association with stone polissoirs. The stone axe head is perhaps the defining artefact of the Neolithic in Cumbria. Exploitation of andesite (Gp. VI) sources in the central fells occurred from around the start of the fourth millennium BC through to c. 1750 BC and axes make up the vast bulk of the record for this period, being the only indicator of a Neolithic presence in many parts of the county, with few settlement traces represented by physical structures or surface flintwork. The distribution of axe finds indicates continued importance of coastal sites, but also an expansion of activities into other parts of the landscape, including seasonal grazing of higher pastures as indicated by pollen evidence, for example, from Blea Tarn (10) (see for example Bradley & Edmonds 1993). This use of less

\(^5\) Taken early in the development of the technique without the precision of current methods.
favourable land might imply more intensive use of the more clement, more fertile valley bottoms and coasts, but this is not reflected in the archaeology. Bewley's work in north Cumbria in the Solway Basin suggests this may be a result of differential survival. An extensive timber palisade at Plasketlands (11) produced dates of 3970-2535 cal BC and 4032-3729 cal BC (Bewley 1993). The structure appears to annexe a large D-shaped ditched enclosure and the site has been interpreted as an enclosed settlement (Hodgkinson et al. 2000). A small hearth at Cocklakes (12) near Carlisle produced similar dates of 3650-3520 cal BC (Johnson et al. In prep.) and was cut by the corner of a sub-rectangular structure which may also be Neolithic. Structures such as this are rare, but the Furness Peninsula has also yielded a number hearth sites and middens as well as pottery and lithic assemblages, and excavations at Sandscale, Walney (13) have identified a small post-hole structure associated with a lithic group of Later Neolithic/Early Bronze Age date (Evans & Coward 2003). Other sources of such assemblages are pits and tree-hollows. At Holbeck Park (14), also in the Furness area, 106 sherds of earlier Neolithic pottery, a rod microlith and two unpolished flakes of tuff were found within a tree hollow (Hodgson & Brennand 2005) and pits and scoops around the Carlisle area have yielded Grimston Ware, Grooved Ware and stone tools (McCarthy 2002).

Environmental evidence from this period indicates exploitation of both upland and lowland areas, with small-scale cultivation on the coastal plain (Pennington 1975) and eastern limestone plateau (Skinner 2000). Cereal pollen from Barfield Tarn (15) (Pennington 1975) is found in the 'elm decline' phase, after a primary clearance at 4457-3825 cal BC (Hodgkinson et al. 2000), but the wide range of coastal, wetland and woodland landscapes available mean that hunting and gathering activities might perhaps have remained important alongside domesticated crops and livestock, but faunal remains are rare and details of diet and subsistence remain unclear (Huntley & Stallibrass 1995).

In the later Neolithic, the record becomes less artefact-based and more focussed on monumental constructions, both ceremonial and burial. The most emblematic of these are perhaps the many stone circles which survive in various states across the county. These range from the great open circles of the early Neolithic, e.g. Castlerigg (16), Long Meg & Her Daughters (17), and Swinside (19), through to smaller settings around burial mounds, the 'cairn circles' or 'kerbed cairns' of the Early Bronze Age, such as those at Little Meg (20), Moor Divock (21), and Broomrigg (22). Dating of the circles is tentative. Only four (Broomrigg, Gretigate, Grey Croft and Lacra) have been the subject of 'modern' excavation (mostly in the late 1940s), and no carbon 14 dates are available. Further, few dateable artefacts have been recovered from secure contexts. All date between 1800 and 1400 bc and come from smaller, later, circles (Burl 1976: 57-61). An alternative approach is based on the development of architectural styles (supported by evidence from artefacts) and Burl's general observations associating common traits with broad chronological phases is shown in Table 6-10 (Burl 1976: 57-61). There are many subtle variations, for example, in the use of embankments and ditches, the shape of the circle (flattened, ovoid, elliptical), the size of the stones, their spacing, the inclusion of entrances, internal structures, and concentric circles. Evidence both in Cumbria and elsewhere (e.g.
Templewood, Kilmartin) suggests that stone circles evolved through many forms, their present arrangements representing only the final stage in their development. The cairn at Oddendale (23) in east Cumbria has been shown to have a timber predecessor yielding dates between 2859 and 2466 cal BC (Turnbull & Walsh 1997). Two concentric rings of posts were later replaced by two rings of granite boulders, which in a final phase were covered by a ring cairn surrounding a central pit which may have contained an inhumation.

Table 6-10: Architectural development of stone circles proposed by Burl with radiocarbon dates derived from associated artefacts.

<table>
<thead>
<tr>
<th>Phase</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date range (uncalibrated radiocarbon dates)</td>
<td>2600-2100 bc</td>
<td>2100-1600 bc</td>
<td>1600-1100 bc</td>
</tr>
<tr>
<td>Predominant shapes</td>
<td>Circles and flattened circles</td>
<td>All shapes present</td>
<td>Eggs and ellipses</td>
</tr>
<tr>
<td>Average diameter</td>
<td>Over 30 m</td>
<td>30 m</td>
<td>Under 30 m</td>
</tr>
<tr>
<td>Early traits</td>
<td>Larger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Later traits</td>
<td>Smaller</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stones</td>
<td>Large, close spacing</td>
<td>Small, widely spaced</td>
<td></td>
</tr>
<tr>
<td>Other features</td>
<td>Marked entrance, outliers</td>
<td>Burials</td>
<td></td>
</tr>
</tbody>
</table>

Many circles are noted only in antiquarian reports, having been lost long ago to agriculture or industry; the circles at Studfoldgate and Iron Hills are crossed by stone walls, Long Meg is separated from half of her ‘Daughters’ by a farm track, and the circle at Kemp Howe (24) is neatly bisected by a railway line. Other standing stones, for example at Kirksanton (25) and at Ash House (26), both on the south-west coast, may be the remnants of more extensive arrangements. Other megalithic structures are also in evidence: a double stone row at Shap (27) extends for 3 km, and other putative examples are recorded, for example on Moor Divock (21), and at Burnmoor (28). Closely related to the stone circles are henge monuments. Three examples are known in Cumbria, one now lost and a second much mutilated. All lie within a few hundred meters, close to the confluence of the Rivers Eamont and Eden just south of Penrith. Mayburgh (29), a class I henge, is an immense cobble bank, and there are records of an internal circle of standing stones; only one remains today. King Arthur’s Round Table (30) is a class II henge, although its second entrance was destroyed by road-widening in the 19th century. Other varieties of enclosed sites are also present. The cause-wayed enclosures synonymous with Neolithic culture in more southerly counties are under-represented in the north, but recent discoveries in Cumbria suggest they were not entirely absent. A large double-entrance enclosure abutting the stone circle of Long Meg & Her Daughters (17) has been identified from parch-marks (Soffe & Clare 1988), and fell-top enclosures with possible Neolithic origin have been identified at Aughertree Fell (32) (Horne et al. 2002), Carrock Fell (33) (Pearson & Topping 2002), Howe Robin (34) (Brown 2002) and Hallin Fell (35) (P. Horne, pers. com.). Their exact role remains unclear.

As well as the ‘gathering’ and ceremonial monuments, a number of Neolithic burial mounds are recorded in the county, but little modern excavation has taken place. In 1984 Masters listed six
examples in Cumbria: Raisett (Rayseat) Pike (39), The Curri cue (37), Sampson’s Bratful (38), Skelmore Heads (40), Haverbrack (36) and Trainford Brow (41) and made reference to two additional ‘possible’ sites at Cow Green (42) and Crosby Garret (43). More recent surveys have identified several more. The SMR lists a further twenty-six ‘long mounds’ ‘long cairns’ or ‘oval cairns’, however secure characterisation is questionable. Most of these fall into two distinct geographical groupings, one on the south and east-facing slopes of the western fells (this may be a reflection of extensive surveying work carried out by CLAU in recent years with the majority associated with cairn fields at Town Bank and Stockdale Moor), and a second around the Eden Valley to the north-east. Only one possible example of a chambered tomb is present in the county, at Great Urswick (44) on the south-west coast, despite other links with areas (e.g. Anglesey, I.O.M.) where they are more prevalent.

Towards the end of the Neolithic period, traces of new influences from Europe begin to appear in the record, with single as opposed to collective burial, and a new range of tools and ceramics. Beaker pottery is found in the Eden Valley in the early second millennium BC, and a different type of distinctive cord-decorated pottery emerges on the west coast. Sherds have been found in various associations including a limestone gryke at Sizergh, at the Levens ring cairn and in domestic contexts on North Walney (Brennand 2005). Food vessels, collared urns and incense cups are also represented, chiefly in association with cremation burials, but also deposited in limestone grykes, potholes and other natural features. Scattered finds of barbed and tanged arrowheads and stone hammers can be linked to expansion of settlement onto now-marginal land on the upland fringe, evidenced by numerous cairnfields, field systems and settlements such as those at Devoke Water (45) (Fell 1970), Moor Divock (21) (Clare & Wilkinson 2006) and Matterdale (46) (Hoaen & Loney 2003). The coastal lowlands continued to be important, particularly towards the end of the Bronze Age when climatic deterioration led to the abandonment of the uplands. A wooden corduroy track-way across the marshes at Foulshaw (47) on the south-coast is dated to 1592-1260 cal BC (Wimble et al. 2000), and suggests the estuarine and riverine wetlands retained significance. Burial practices also alter during this period, with cist burials prevalent and urned cremation cemeteries occur, with remains either covered by cairns as at Old Parks (48), in the Eden Valley (Ferguson 1895), or deposited in limestone crevices as at Allithwaite (49) on the south coast (Wild 2003). Other examples have been found at Ewanrigg (50) on the Solway Plain (Bewley 1986; Bewley et al. 1992), and in Carlisle (Hodgson 1956). Other possible ritual sites of this period (or possibly earlier) include a number of ring cairns found in upland locations, for example close to Stickle Tarn in Great Langdale, and the mysterious burnt mounds, now increasingly recognised and excavated in the county (e.g. Heawood & Huckerby 2002) and generally thought to belong to the Middle or Late Bronze Age.

Despite the presence of copper ores in the Coniston area, no evidence of prehistoric mining or extraction is known here, the closest known site being at Alderley Edge in Cheshire. Possible early evidence of metalworking in the North West of Britain comes from axe marks found on wood excavated from a track-way known as Kate’s Pad, in Lancashire, which is dated stratigraphically to

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* Cumbria and Lancashire Archaeology Unit (now Oxford Archaeology North)
2559-1950 cal BC (Various 2005: 20), and in Cumbria, finds of bronze dirks, and axes suggest trading links both with Ireland, and eastern regions via the Eden Valley (Fell 1940).

Figure 6-13: Bronze dirk found near Foulshaw Moss. Held by Kendal Museum.

Figure 6-14: Prehistoric sites mentioned in the text.
6.2.2 Rock art and the archaeological landscape

The small number of confirmed rock art sites precludes statistical analysis for positive correlation, but when the current distribution of panels is plotted alongside various archaeological elements a number of observations can be made, particularly with respect to rock art in specific contexts. The relationship between stone axe heads (including rough-outs, polished axes and fragments) and rock art sites is shown in Figure 6-15. The location data for axes is based on tables published in 1988 (McK Clough & Cummins), supplemented with information from the County Council SMR and the Lake District National Park HER database. The main working sites for Group VI (andesite) stone are shown (other, smaller sources are known at Carrock Fell and Coniston). Concentrations of axes can be seen along the west coast and the Furness Peninsular, around the Keswick area, the Eden Valley, and across the north Cumbrian plain. Some allowance must be made for current population centres but although there are clear 'hot-spots' around Carlisle, Penrith, Keswick and Barrow-in-Furness, other towns such as Workington, Whitehaven, Maryport, Kendal, Windermere and Ambleside do not have similar numbers of finds. There is reasonable correlation with the rock art in monumental and other non-landscape settings in the Eden Valley and adjacent limestone uplands, but no rock art has yet been identified on the Furness Peninsular, or around the Esk Estuary on the west coast, nor in the Keswick area (if the questionable panels at Castlerigg are excluded). Some of the landscape panels in the central fells are very close to the stone quarries, however those at Patterdale, near Ullswater, and those near Buttermere and Crummock Water do not appear to have any positive correlation with the distribution of axes. These observations contrast with findings in north-east Yorkshire where rock art panels follow the pattern of flint and stone axes, along the edges of the lower ground (Bradley 1997: fig.6.1).

Figure 6-16 and Figure 6-17 show the distribution of stone circles (including kerbed cairns) and long cairns respectively. In both case there is good correlation between the monuments in the Eden Valley and the monumental and portable rock art in this area however the concentrations on the west coast have no similar association with rock art panels. The landscape panels in the central valleys appear to have little positive spatial relationship with either the stone circles (of any period) or the Neolithic long cairns, apparently located away from areas of settlement, and from both ceremonial and burial sites.

It seems then, that based on the current picture, little positive correlation can be made between the location of rock carving in landscape locations and other prehistoric remains or clusters of activity in Cumbria. This suggests that rock art found in open landscape contexts was not associated with activities which resulted in detectable evidence: for example permanent settlement or agricultural clearance. But were the carved outcrops and boulders really isolated in the landscape, or did they mark the position of more extensive, less enduring sites? As noted earlier evidence from geophysical survey and excavation in Drumirril, Ireland (O'Connor 2003) and Kilmartin in Argyll (Jones 2006) suggests that carved outcrops were part of more elaborate sites and it may be that similar evidence is so far undetected in Cumbria where no similar fieldwork has yet been undertaken.
The analysis has so far focussed primarily on the relative distribution of rock art panels in different contexts: monumental, landscape and portable or re-used stones. The geographical separation between these groups is emphasised further when the stylistic elements present at each panel are also considered, however these also raise some interesting questions regarding classification systems and reveal both affinities and contrasts with rock art elsewhere in Britain.
Figure 6.17: Distribution of linear cairns (○) and rock art.

Figure 6.16: Rock art and stone circles. Early, open circles (○); later cairn circles (●)
6.2.3 Stylistic and contextual correlations

In Chapter 2 a number of generalisations regarding rock art ‘style’ were considered, and the differences between ‘cup-and-ring’ art (found primarily on landscape panels) and ‘passage grave’ or ‘megalithic’ art (found in chambered tombs) were discussed. There are no similar monuments in Cumbria but there are clear affinities with the passage grave style, with common elements present on the kerbstones of burial cairns at Glassonby and Little Meg, at Copt Howe, and on smaller, portable stones from Maryport. Motifs include complex spiral and concentric circle arrangements with no central cup, angular chevrons, and diffuse pecking. The Little Meg kerbstone is particularly reminiscent of the ‘plastic’ style of passage grave art, making optimum use of the bulbous form of the boulder in the design. The stones at the Old Parks cairn in the Eden Valley also warrant particular mention. The curvilinear grooves and ‘crook’ shapes on slabs wall which divides the monument are unusual within the cup-and-ring corpus, but similar motifs do occur on a few passage grave stones for example at Millin Bay in Ulster. By contrast, the stones found associated with burial cists, as surface finds or re-used in later structures tend to have classic cup-and-ring style carvings, with the penannular motif featuring prominently on ‘portable’ stones, and also occurring on the outcrop site at Leonard’s Cragg. Excepting this panel and that at Copt Howe, the remaining landscape sites display simple cups and grooves, with only two panels (Greenrigg and Gillalees 4) including a ‘cup-and-ring’ motif. There appears no clear-cut stylistic distinction between monumental and landscape art, with both passage grave and cup-and-ring motifs occurring in both contexts. Monuments at Little Meg and Glassonby combine both styles, with passage grave designs on their kerbstones and cup-and-ring elements in the central cist, probably reflecting continuous development of the sites with the cists being a later addition to existing megalithic settings. Perhaps the most anomalous site is Copt Howe where the vertical panel of boulder A is decorated with motifs having very strong affinities to the passage grave tradition, yet there is no indication of any monumental architecture.

In Chapter 3 studies were described in which relationships between the ‘complexity’ of designs on panels and their position in the landscape were demonstrated. More intricate compositions were found on outcrops rather than boulders, and in more visible settings (Bradley 1997: Ch. 5). The presence of complex motifs also increased closer to monumental areas such as Kilmartin (ibid. 113-119), and designs tended to be more varied where resources were most restricted (ibid. 92). In Cumbria, the small number of landscape panels precludes similar statistical analysis: there are only two examples, Copt Howe A and Leonards Cragg, which could be considered ‘complex’ using the measures applied in previous studies7. One is a boulder, the other outcrop; neither is close to known monuments.

7 Complex panels are defined as have three or more concentric rings.
When elements of form, style, context and geographical distribution are combined, four distinct groups emerge:

- **Cup-and-ring style panels on the eastern and north-eastern fringes**
- **Cup-marked outcrops, near the central lakes**
- **Passage grave style carvings in a landscape setting at Copt Howe**
- **Monumental and portable panels in the Eden Valley**

The latter three of these form the thematic studies presented in Part III.

**Discussion**

The exclusion of several questionable panels and addition of new ones has not greatly altered the number of known panels in Cumbria, but the overall picture has shifted. Previously the Eden Valley and its monuments were the primary focus with the majority of panels found in this area, either associated with stone circles and cairns, or 'portable', i.e. without any context. A smaller group was associated with the monuments of the adjacent limestone uplands, with carvings recorded on two stones of Shap Avenue, and on kerbstones at cairns at Hardendale and Moor Divock. Isolated examples were also recorded around the borders and the coast, and just three sites were known in the central fells. The revised dataset moves the emphasis both away from the Eden Valley and away from monumental contexts. The discovery of several new cup-marked outcrops in the valleys of the central fells indicates a much broader role for rock art in the region, with new contexts very specific to the dramatic landscape of the Lake District.

Differences in underlying geology provide some explanation for the current distribution of rock art, but other factors may be of equal importance. The absence of rock art in the south-east of the area coincides with a belt of soft carboniferous limestone, susceptible to weathering, and also with the Howgill Fells, an area renowned for its failure to produce archaeological material. Contrary to previous reasoning, it has been amply demonstrated that the hard volcanic and metamorphic rocks of the Lake District presented no barrier to carving, and the inclement Cumbrian climate has not been particularly damaging, perhaps counteracted by the more resistant surfaces. Even within the Eden Valley, where sedimentary stone is readily available, carving is carried out on whinstone (quartz-dolerite) and gabbro, with granite used at nearby Shap.

The grouping in the Eden Valley remains significant and closely matches known archaeological patterns. The presence of several major monuments, both ceremonial and burial, are testament to the importance accorded to the area throughout the prehistoric period, the result, perhaps, of a combination of religious, social and economic factors including ritual respect for both the red-sandstone geology and the powerful river which divided the landscape, the practical appeal of the fertile soils, and its favourable location on major trade routes. The concentration of both monumental and portable rock art panels in this area is therefore not unexpected, and the river may be the only factor amongst many.
The new sites in landscape settings in the central valleys are less easily related to known archaeological distributions. Although monuments do occur in the High Fells region, these tend to be on moor land towards the edges of the area and do not coincide with the outcrop sites. The best fit is perhaps with the stone axe distribution which originates in the central mountains, and this may suggest a role for the carvings in movement of roughed-out stone through the valleys to lowland sites for polishing. However no axes have been found in the immediate vicinity of the carved outcrops. The ‘route’ hypothesis is supported by the fact that this very loose association with axe finds does not extend to the concentrations of axes on the coast which are indicative of more heavily populated areas. Rather, it is limited to find sites immediately around the valleys leading from the central quarries in areas unlikely to have been permanently settled.

The elaborately carved panel A at Copt Howe presents something of a puzzle, being unique in many respects, and might perhaps be explained by its location within a valley leading directly to the primary quarry site of Pike O’ Stickle in the Langdale Pikes. Yet, the close proximity of a very different ‘landscape’ site, the simple, cup-marked boulder at Side Pike, adds to the mystery with two apparently very similar locations marked in radically different styles.

The final part of this thesis will now examine each of these three groups in much greater detail in order to elucidate further their respective roles within prehistoric society and move closer to the development of a chronological framework.