

Tables

(Table 1.1) Key to the sites shown on (Figure 1.7), including classifications used in (Table 1.2)

| Site Name | A | B | C | D | E |
|-------------------------------------|-----|-------|-------|---|---|
| 1 Corrieshalloch Gorge | 4 | | | | |
| 2 Falls of Clyde | 4,5 | | | | |
| 3 River Findhorn at Randolph's Leap | 4 | 1 | | | |
| 4 Falls of Dochart | 5 | | | | |
| 5 The Grey Mare's Tail | 5 | | | | |
| 6 River Clyde meanders | | | 1 | 2 | |
| 7 Strathglass meanders | | 1 | 1 | 1 | |
| 8 Abhainn an t-Srath Chuileannaich | | 1 | 1,2 | 2 | |
| 9 Endrick Water | | | 1 | 2 | |
| 10 Derry Burn | 1 | 1,2,4 | 1 | | |
| 11 River Balvag delta | | 5 | 1 | | |
| 12 The Lower River Spey | | 1 | 4 | 1 | |
| 13 Glen Feshie | 1 | 1,3 | 2,4,5 | | |
| 14 The Allt Dubhaig | | 4 | 4 | 4 | |
| 15 Dorback Burn | | 1 | 2,4 | | |
| 16 Glen Coe: river and slope forms | 4 | 1,3 | | | |
| 17 Luibeg Burn | 4 | 1 | | | |
| 18 Allt Mor (River Nairn) | 2,4 | 1 | 1,5 | | |
| 19 Allt Coire Gabhail | | 3 | | | |
| 20 Allt Mor (River Druie) | 4 | 1,4 | 5 | 4 | |
| 21 Quoich Water alluvial fan | | 1 | 5 | 2 | |
| 22 Allt a' Choke | 4 | 4 | 5 | | |
| 23 Allt Coire Chailein fan | | 4 | 5 | 1 | |
| 24 Eas na Broige debris cone | | 3 | 5 | | |
| 25 Oldhamstocks Burn | | 1,2 | | | |
| 26 Findhorn Terraces | 1 | | | | |

| | | | | |
|-------------------------------------------------------------------------------|-------|---|---|---|
| 27 North Esk and West Water palaeochannels | | 3 | 1 | |
| 28 Glen Roy, Glen Spean and Glen Gloy | 1 | | 5 | |
| 29 Afon Llugwy between Swallow Falls and Betws y Coed | 3,4,5 | | | |
| 30 Afon Rhaeadr at Pistyll Rhaeadr | 5 | | | |
| 31 Afon Cynfal at Rhaeadr y Cwm and Rhaeadr Cynfal | 3,4,5 | | | |
| 32 Afon Twymyn at Ffrwd Fawr | 3,4,5 | | | |
| 33 Afon Glaslyn at Aberglaslyn | 4 | 1 | | |
| 34 Afon Teifi at Cenarth | 4 | | 1 | |
| 35 River Dee at Llangollen | 2,3 | | | |
| 36 River Wye at Lancaut | 2,3 | | | |
| 37 Afon Hepste | 6 | | | |
| 38 Afon Mellte downstream of Ystradfellte | 6 | | | |
| 39 Afon Dyfi between Dinas Mawddwy and Mallwyd | 1,3 | | | |
| 40 Afon Rheidol | 1 | | | |
| 41 Afon Vyrnwy | 1 | | 1 | |
| 42 Afon Ystwyth | | 4 | | 1 |
| 43 Upper Elan upstream of Craig Goch Reservoir at Bodtalog | 9 | 1 | | |
| 44 Upper River Severn between Dolwen and Penstrowed | 1,4 | 4 | | |
| 45 River Severn between Welshpool and the confluence of the Vyrnwy and Severn | | 1 | | |
| 46 River Dee, Holt to Worthenbury | | 1 | | |

| | | | | | |
|----------------------------------------------------|-----|-----|-----|-----|---|
| 47 Afon Teifi at Cors Caron | | | 1 | | |
| 48 Maesnant, Pumlumon (Plynlimon) | 7 | | | | |
| 49 Black Mountain scarp | | 3 | | | |
| 50 Carlingill Valley, Howgill Fells | 1,3 | 3 | 5 | 4,5 | |
| 51 Langdale and Bowderdale Valleys, Howgill Fells | | 1 | 5 | 4,5 | |
| 52 Langden Brook, Bowland Fells | | | 4,5 | 4 | |
| 53 River Dane, near Swettenham | 1 | | 1 | 6 | |
| A Langstrathdale* | 4,5 | 3 | 4 | | |
| B Wasdale* | 4 | 3 | 4,5 | | |
| C Fan Deltas at Buttermere and Crummock Water* | | | 5 | | |
| 54 Black Burn | 1 | | 4 | 1 | |
| 55 Garrigill, River South Tyne | | | | 5 | 1 |
| 56 River Nent, Blagill | | 5 | 1 | 2 | 1 |
| 57 The Islands (Alston Shingles), River South Tyne | | 1 | | 5 | |
| 58 Blackett Bridge, River West Allen | | 5 | | | |
| 59 River Tyne at Low Prudoe | | 1 | | | 1 |
| 60 Harthope Burn | | | | 2 | |
| 61 Shaw Beck Gill | | 1 | | | |
| 62 Beckford | | | | 4 | |
| 63 River Severn at Montford | | | | 3 | |
| 64 River Axe at Axminster and Whitford | | 8 | | 2 | |
| 65 River Exe at Brampford Speke | | 5 | | | |
| 66 River Ter at Lyons Hall | | 6 | | | |
| 67 River Derwent at Hathersage | 1 | | | | 2 |
| 68 Highland Water | | 7,8 | | | |
| 69 River Lyn | 3 | 1 | | | |
| 70 River Itchen near Knightcote | | | | 3 | |

| | | | |
|----------------------------------------|---|-----|---|
| 71 River Cherwell at Trafford House | | | 3 |
| 72 Ashmoor Common | | | 1 |
| 73 River Severn, Buildwas | 1 | | 6 |
| 74 Alport Valley | 4 | | |
| 75 Bleaklow | 3 | | |
| 76 Lydford Gorge | 4 | | |
| 77 Mimmshall Brook at Water End | 7 | | |
| 78 Aysgarth | 5 | | |
| 79 Dovedale | 1 | | 6 |
| 80 River Culm at Rewe | | 4,5 | 6 |
| 81 River Lugg | | | 3 |
| 82 Wilden | 1 | | 6 |
| *Potential GCR sites. | | | |

(Table 1.2) Numbers of GCR sites representing the categories shown on (Figure 1.7)

| Classification | Number of sites representing the category |
|------------------------------------------------|-------------------------------------------|
| A. Fluvial Landforms | |
| 1 Terrace | 14 |
| 2 Incised meanders | 3 |
| 3 River capture/rejuvenation | 9 |
| 4 Mountain torrent/slot gorge | 17 |
| 5 Waterfall | 9 |
| 6 Karstic site | 2 |
| 7 Soil pipe/swallow hole | 2 |
| B. Fluvial processes | |
| 1 Process event-flood | 19 |
| 2 Accelerated erosion | 2 |
| 3 Debris flow/cones | 8 |
| 4 Sediment movement | 7 |
| 5 Floodplain sedimentation | 5 |
| 6 Discharge control on capacity | 1 |
| 7 Vegetation influence | 1 |
| 8 Bank erosion | 2 |
| 9 Response to confinement variation | 1 |
| C. River channel pattern and floodplain | |
| 1 Meander | 14 |
| 2 Wandering | 3 |
| 3 Outwash sandur | 1 |
| 4 Braided | 10 |
| 5 Alluvial fans | 12 |
| D. Channel change | |
| 1 Palaeochannel | 18 |
| 2 Planform change | 7 |
| 3 Underfit stream | 3 |
| 4 Palaeofans/sediments | 6 |

| | |
|--------------------|---|
| 5 Paleoterraces | 5 |
| 6 Palaeoconditions | 5 |
| E. Human | |
| 1 Mining | 4 |
| 2 Reservoir | 1 |
| 3 River management | 1 |

(Table 3.1) Confinement materials on an 8 km reach of the Upper Elan. (After Lewin and Brindle, 1977.)

Confinement materials on an 8 km reach of the Upper Elan

| | Right bank (km) | Left bank (km) | Average (%) |
|---------------------------------------------|--------------------|-------------------|----------------|
| Rock | 0.53 | 0.53 | 29.0 |
| Solifluction deposits | 0.75 | 0.74 | 40.1 |
| Fluvial gravels | — | 0.25 | 6.8 |
| Sections of complex superficial deposits | 0.52 | 0.34 | 24.1 |
| Total | 1.80 | 1.86 | 100.0 |

(Table 3.2) Threshold discharges for bed material movement and type of reach (E = erosional; D = depositional; S = stable).

| Site | Discharge m^3s^{-1} | |
|-------------------|-----------------------|---|
| Dolwen | 11.0 | S |
| Lower Penrhuddlan | 16.0 | S |
| Craig Fryn | 30.0 | D |
| Llandinam | 11.0 | E |
| Maes-Mawr | 16.2 | E |
| Ty-Mawr | 17.1 | E |
| Penstrowed | 17.1 | E |

(Table 3.3) Input and output of sediment from debris-flow gullies. Yearly sediment derived from sides of gully B, 30 September 1971–29 September 1972.

| | Western-facing side | | Eastern-facing side | | |
|----------------------|---------------------|--------|---------------------|--------|---------------------|
| | 1 | 2 | 3 | 4 | |
| Trap sediment yield | 0.0128 | 0.0184 | 0.0039 | 0.0028 | $m^3m^{-2}yr^{-1}$ |
| Mean sediment yield | 0.0156 | | 0.0033 | | $m^3 m^{-2}yr^{-1}$ |
| Gully side area | 435.6 | | 497.3 | | m^2 |
| Total sediment yield | 6.795 | | 1.641 | | m^3yr^{-1} |

Total sediment derived from gully sides = $8.436 m^3$ in one year

Volume of debris flow removal from gullies

| Gully | A | A | B | C | |
|-------|------------|------------|-----------|-----------|--------------------------|
| | $11.5 m^3$ | $11.5 m^3$ | $9.8 m^3$ | $8.3 m^3$ | In observation year |
| | | | | $9.1 m^3$ | Outside observation year |

[References](#)

Table 1.1 Key to the sites shown on Figure 1.7, including classifications used in Table 1.2

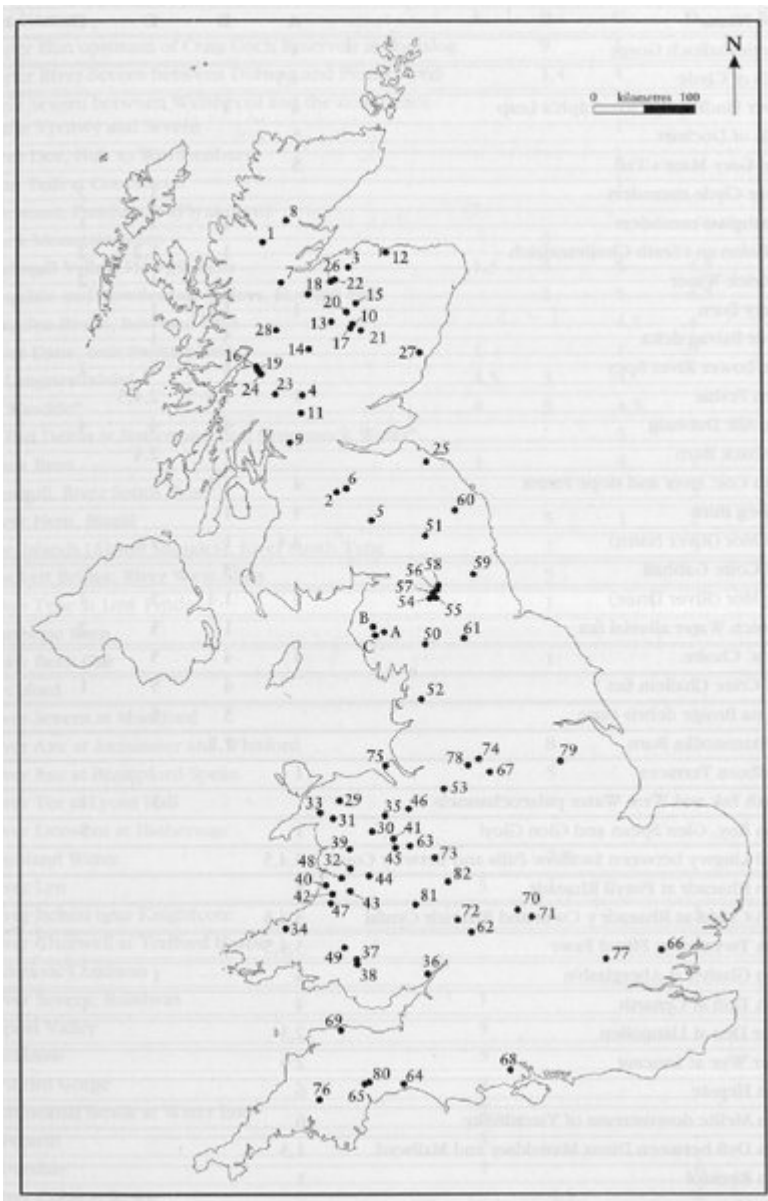
| Site Name | A | B | C | D | E |
|-------------------------------------------------------|-------|-------|-------|---|---|
| 1 Corrieshalloch Gorge | 4 | | | | |
| 2 Falls of Clyde | 4,5 | | | | |
| 3 River Findhorn at Randolph's Leap | 4 | 1 | | | |
| 4 Falls of Dochart | 5 | | | | |
| 5 The Grey Mare's Tail | 5 | | | | |
| 6 River Clyde meanders | | | 1 | 2 | |
| 7 Strathglass meanders | | 1 | 1 | 1 | |
| 8 Abhainn an t Seath Chastleannach | | 1 | 1,2 | 2 | |
| 9 Enderick Water | | | 1 | 2 | |
| 10 Derry Burn | 1 | 1,2,4 | 1 | | |
| 11 River Balvag delta | | 5 | 1 | | |
| 12 The Lower River Spey | | 1 | 4 | 1 | |
| 13 Glen Feshie | 1 | 1,3 | 2,4,5 | | |
| 14 The Ailt Dubhaig | | 4 | 4 | 4 | |
| 15 Dornock Burn | | 1 | 2,4 | | |
| 16 Glen Coe: river and slope forms | 4 | 1,3 | | | |
| 17 Ladbeg Burn | 4 | 1 | | | |
| 18 Allt Mor (River Nisim) | 2,4 | 1 | 1,5 | | |
| 19 Allt Coire Gabhail | | 5 | | | |
| 20 Allt Mor (River Drule) | 4 | 1,4 | 5 | 4 | |
| 21 Quosich Water alluvial fan | | 1 | 5 | 2 | |
| 22 Allt a' Choire | 4 | 4 | 5 | | |
| 23 Allt Coire Chalcids fan | | 4 | 5 | 1 | |
| 24 Eas na Broige debris cote | | 3 | 5 | | |
| 25 Omlunstocks Burn | | | 1,2 | | |
| 26 Findhorn Terraces | 1 | | | | |
| 27 North Esk and West Water palaeochannels | | | 3 | 1 | |
| 28 Glen Roy, Glen Spean and Glen Gloy | 1 | | | 5 | |
| 29 Afon Llugwy between Swallow Falls and Betws y Goed | 3,4,5 | | | | |
| 30 Afon Rhaeadr at Pityll Rhaeadr | 5 | | | | |
| 31 Afon Cynfal at Rhaeadr y Cwm and Rhaeadr Cynfal | 3,4,5 | | | | |
| 32 Afon Twynyni at Hrawd Fawr | 3,4,5 | | | | |
| 33 Afon Glaslyn at Aberglaslyn | 4 | | 1 | | |
| 34 Afon Teifi at Genarth | 4 | | | 1 | |
| 35 River Dee at Llangollen | 2,5 | | | | |
| 36 River Wye at Lancaut | 2,5 | | | | |
| 37 Afon Hwypse | 6 | | | | |
| 38 Afon Melbe downstream of Ystradfellte | 6 | | | | |
| 39 Afon Dyfi between Dinas Mawddwy and Malwyd | 1,5 | | | | |
| 40 Afon Rhedol | 1 | | | | |
| 41 Afon Vyrnwy | 1 | | | 1 | |
| 42 Afon Ystwyth | | | 4 | | 1 |

Table 1.1 Continued

| Site Name | A | B | C | D | E | |
|-------------------------------------------------------------------------------|-----|-----|-----|-----|---|---|
| 43 Upper Eilan upstream of Craig Goch Reservoir at Bodolag | 9 | 1 | | | | |
| 44 Upper River Severn between Dolwen and Penstrawed | 1,4 | 4 | | | | |
| 45 River Severn between Welshpool and the confluence of the Vyrnwy and Severn | | | | 1 | | |
| 46 River Dee, Holt to Worthcubury | | | | | 1 | |
| 47 Afon Teifi at Cors Caeron | | | | | 1 | |
| 48 Muesnant, Porthannon (Plynlimon) | 7 | | | | | |
| 49 Black Mountain scarp | | 3 | | | | |
| 50 Carlangill Valley, Howgill Fells | 1,3 | 3 | 5 | 4,5 | | |
| 51 Langdale and Bowdledale Valleys, Howgill Fells | | 1 | 5 | 4,5 | | |
| 52 Langfen Book, Bowland Fells | | | | 4,5 | 4 | |
| 53 River Dane, near Swettenham | | 1 | | 1 | 6 | |
| A Langstrathdale* | | 4,5 | 3 | 4 | | |
| B Washdale* | | 4 | 5 | 4,5 | | |
| C Fyn Deltas at Butternere and Crommoch Water* | | | | | 5 | |
| 54 Black Burn | 1 | | 4 | 1 | | |
| 55 Garrigill, River South Tyne | | | | | 5 | 1 |
| 56 River Nens, Blagill | | 5 | 1 | 2 | 1 | |
| 57 The Islands (Alston Shingles), River South Tyne | | | 1 | | 5 | |
| 58 Blackett Bridge, River West Allen | | | 5 | | | |
| 59 River Tyne at Low Peadoc | | 1 | | | | 1 |
| 60 Harthopc Burn | | | | | | 2 |
| 61 Shaw Beck Gill | | | 1 | | | |
| 62 Beckford | | | | | | 4 |
| 63 River Severn at Montford | | | | | | 3 |
| 64 River Axe at Axminster and Whitford | | | 8 | | | 2 |
| 65 River Eze at Bramford Speke | | | 5 | | | |
| 66 River Tre at Lyons Hall | | | 6 | | | |
| 67 River Derwent at Hathersage | 1 | | | | | 2 |
| 68 Highland Water | | | 7,8 | | | |
| 69 River Lyn | 3 | 1 | | | | |
| 70 River Itchen near Knightcote | | | | | | 3 |
| 71 River Cherwell at Trafford House | | | | | | 5 |
| 72 Ashmoor Common | | | | | | 1 |
| 73 River Severn, Buildwas | 1 | | | | | 6 |
| 74 Alport Valley | 4 | | | | | |
| 75 Beadlow | 5 | | | | | |
| 76 Lydford Gorge | 4 | | | | | |
| 77 Minnshall Brook at Water End | 7 | | | | | |
| 78 Aysgarth | 5 | | | | | |
| 79 Dovedale | 1 | | | | | 6 |
| 80 River Calon at Bewe | | | 4,5 | | | 6 |
| 81 River Lugg | | | | | | 3 |
| 82 Wilden | 1 | | | | | 6 |

*Potential GCR sites.

(Table 1.1) Key to the sites shown on (Figure 1.7), including classifications used in (Table 1.2)



(Figure 1.7) A map of Great Britain showing the classification of GCR fluvial geomorphology sites. See also (Table 1.1).

| Classification | Number of sites representing the category |
|------------------------------------------------|-------------------------------------------|
| A. Fluvial Landforms | |
| 1 Terrace | 14 |
| 2 Incised meanders | 3 |
| 3 River capture/rejuvenation | 9 |
| 4 Mountain torrent/slot gorge | 17 |
| 5 Waterfall | 9 |
| 6 Karstic site | 2 |
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| B. Fluvial processes | |
| 1 Process event-flood | 19 |
| 2 Accelerated erosion | 2 |
| 3 Debris flow/cones | 8 |
| 4 Sediment movement | 7 |
| 5 Floodplain sedimentation | 5 |
| 6 Discharge control on capacity | 1 |
| 7 Vegetation influence | 1 |
| 8 Bank erosion | 2 |
| 9 Response to confinement variation | 1 |
| C. River channel pattern and floodplain | |
| 1 Meander | 14 |
| 2 Wandering | 3 |
| 3 Outwash sandur | 1 |
| 4 Braided | 10 |
| 5 Alluvial fans | 12 |
| D. Channel change | |
| 1 Palaeochannel | 18 |
| 2 Planform change | 7 |
| 3 Underfit stream | 3 |
| 4 Palaeofans/sediments | 6 |
| 5 Paleoterraces | 5 |
| 6 Palaeoconditions | 5 |
| E. Human | |
| 1 Mining | 4 |
| 2 Reservoir | 1 |
| 3 River management | 1 |

(Table 1.2) Numbers of GCR sites representing the categories shown on (Figure 1.7)

| Confinement materials on an 8 km reach of the Upper Elan | | | |
|----------------------------------------------------------|-----------------|----------------|-------------|
| | Right bank (km) | Left bank (km) | Average (%) |
| Rock | 0.53 | 0.53 | 29.0 |
| Solifluction deposits | 0.75 | 0.74 | 40.1 |
| Fluvial gravels | – | 0.25 | 6.8 |
| Sections of complex superficial deposits | 0.52 | 0.34 | 24.1 |
| Total | 1.80 | 1.86 | 100.0 |

(Table 3.1) Confinement materials on an 8 km reach of the Upper Elan. (After Lewin and Brindle, 1977.)

| Site | Discharge m^3s^{-1} | |
|-------------------|-------------------------------------|---|
| Dolwen | 11.0 | S |
| Lower Penrhuddlan | 16.0 | S |
| Craig Fryn | 30.0 | D |
| Llandinam | 11.0 | E |
| Maes-Mawr | 16.2 | E |
| Ty-Mawr | 17.1 | E |
| Penstrowed | 17.1 | E |

(Table 3.2) Threshold discharges for bed material movement and type of reach (E = erosional; D = depositional; S = stable).

| | Western-facing side | | Eastern-facing side | | |
|--------------------------------------------------------------------------|---------------------|------------------|---------------------|--------------------------|-------------------------------------------|
| | 1 | 2 | 3 | 4 | |
| Trap sediment yield | 0.0128 | 0.0184 | 0.0039 | 0.0028 | $\text{m}^3 \text{m}^{-2} \text{yr}^{-1}$ |
| Mean sediment yield | 0.0156 | | 0.0033 | | $\text{m}^3 \text{m}^{-2} \text{yr}^{-1}$ |
| Gully side area | 435.6 | | 497.3 | | m^2 |
| Total sediment yield | 6.795 | | 1.641 | | $\text{m}^3 \text{yr}^{-1}$ |
| Total sediment derived from gully sides = 8.436 m^3 in one year | | | | | |
| Volume of debris flow removal from gullies | | | | | |
| Gully | A | B | C | | |
| | 11.5 m^3 | 9.8 m^3 | 8.3 m^3 | In observation year | |
| | | | 9.1 m^3 | Outside observation year | |

(Table 3.3) Input and output of sediment from debris-flow gullies. Yearly sediment derived from sides of gully B, 30 September 1971–29 September 1972.