

**5.24 MAP SHEET NB 25 46/NB 30 50, SHAWBOST TO ARNOL**

**5.24.1 Overview of cultural heritage**

**5.24.1.1 Number of monuments**

Scheduled	- 1	[3962]
Recorded in the NMRS	- 10	[NB24NE 33, NB24NE 24.01, NB24NE 24.12, NB24NE 24.11, NB24NE 27, NB24NE 01, NB24NE 03, NB24NE 07, NB24NE 04, NB24NE 08]
Others	- 34	
<b>Total</b>	<b>- 44</b>	

**5.24.1.2 Number of site state occurrences**

Eroding (A)	- 9
Eroding/stable (B)	- 3
Stable (C)	- 32

**5.24.1.3 Number of response occurrences**

Nil	- 30
Monitor, (Baseline survey)	- 11
Detailed survey	- 3
Sample	- 0

**5.24.2 Description of cultural heritage**

This map sheet covers the townships of Shawbost, Labost, and Bragar, the coastline is dominated by high cliffs interspersed with bays backed by shingle beaches. This map sheet is one of several on the Island of Lewis that has recently been examined by the RCAHMS survey of First edition Ordnance Survey (FESP or First Edition Settlement Project). As a result of this Shawbost and Bragar (and many of their elements) have been entered into the NMRS database (NB24NE 33 and NB24NE 08).

Two prehistoric monuments have been recorded here, both are in the NMRS. The first is the prehistoric settlement at Dunan Croir (NB24NE 01), this monument has been split here into its component sites (see the gazetteer) and includes a field system consisting of rigging and turf and stone dykes, several rectilinear habitation enclosures which have cells attached and some cairns. The second monument is centred around the site of the Teampul Eoin (NB24NE 04, scheduled ancient monument number 3926), it consists of a scatter of chipped stone tools (NB24NE 07), a kitchen midden (NB 2883 4894), a polished stone tool (NB 2879 4885) and an Iron Age pottery scatter (NB24NE 04).

Other sites of interest on this map sheet include two promontory enclosures (NB 2602 4836 and NB 2830 4971) The first of these sites at Carnan Mor encloses an area of *circa* 1 hectare, the second at Labost encloses less than 1 hectare; neither of these sites can be firmly dated.

### 5.24.3 Gazetteer of cultural heritage

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB 2521 4825	Shawbost	Dyke, Turf		A	A	Pre Clearance	Nil
NB 2522 4829	Shawbost	Cultivation, Rigging		A	A	Pre Clearance	Nil
NB 2522 4822	Shawbost	Cultivation, Rigging		B	B	Pre Clearance	Nil
NB24NE 33	Shawbost	Field System, modern township		C	C	Modern	Nil
NB 2563 4778	Shawbost	Breakwater		B	B	Post Medieval	Nil
NB24NE 24.01	Shawbost	Settlement, modern township		C	C	Modern	Nil
NB 2578 4829	Shawbost	Cairn		C	C	Crofting	Nil
NB24NE 24.12	Shawbost	Building		C	C	Crofting	Nil
NB 2589 4831	Shawbost	Enclosure, Habitational, Rectilinear, Drystone		C	C	Crofting	Nil
NB 2615 4831	Rubha Garson	Field System		B	C	Post Medieval	Nil
NB24NE 24.10	Rubha Garson	Promontory Enclosure		A	A	Unknown	Monitor, survey (?)
NB24NE 24.11	Rubha Garson	Building		C	C	Post Medieval	Nil
NB 2637 4828	Rubha Garson	Dyke, Stone and Turf		B	C	Post Medieval	Nil
NB 2652 4841	Carnan a Stigh	Dyke, Stone and Turf		B	C	Post Medieval	Nil
NB24NE 27	Fivig	Field System, modern township		C	C	Crofting	Nil
NB 2697 4888	Fivig	Dyke, Stone and Turf, modern township		C	C	Crofting	Nil
NB 2712 4959	Aird Mhor Braigar	Cairn		B	C	Unknown	Nil
NB 2720 4962	Aird Mhor Braigar	Sheiling		B	C	Unknown	Monitor
NB 2762 4949 (NB24NE 01)	Dunan Croir	Enclosure, Habitational, Rectilinear, Drystone		C	C	Post Medieval	Nil
NB 2761 4951 (NB24NE 01)	Dunan Croir	Dyke, Stone and Turf		C	C	Unknown	Nil
NB24NE 01	Dunan Croir	Cultivation, Rigging		A	A	Unknown	Monitor
NB 2762 4965 (NB24NE 01)	Dunan Croir	Enclosure, Rectilinear, Turf and stone		C	C	Unknown	Nil
NB 2761 4965 (NB24NE 01)	Dunan Croir	Scatter of boulders		A	A	Prehistoric	Monitor



# COASTAL EROSION ASSESSMENT (LEWIS)

NB 2773 4964 (NB24NE 01)	Dunan Croir	Dyke, Stone and Turf		A	A	Unknown	Monitor
NB 2768 4951 (NB24NE 01)	Dunan Croir	Enclosure, Habitational, Rectilinear, Drystone, two cells attached		C	C	Prehistoric	Nil
NB 2771 4955 (NB24NE 01)	Dunan Croir	Enclosure, Habitational, Curvilinear, Drystone, two phases		C	C	Prehistoric	Nil
NB 2785 4964 (NB24NE 01)	Dunan Croir	Cairns		A	B	Post Medieval	Nil
NB 2830 4971	Stac na Scarbh	Promontory Enclosure		A	A	Unknown	Monitor, survey
NB 2822 4957	Sgeir Dubh nan Clachan Ga	Field System		A	A	Pre Clearance	Monitor (?)
NB 2822 4909	Labost	Field System, modern township		B	C	Crofting	Nil
NB 2849 4879	Port Mhor Bragar	Boat Nausts in shingle ridge		F	A	Post Medieval	Nil
NB 2860 4881	Port Mhor Bragar	Field System, modern township		F	C	Crofting	Nil
NB 2870 4875	Port Mhor Bragar	Traditional boat		C	C	Modern	Survey
NB 2879 4885	Port Mhor Bragar		Stone (Polished)	C	C	Prehistoric	Monitor area
NB24NE 03	Teampull Eoin	Teampull (ruined)		C	C	Medieval	Nil
NB24NE 07	Teampull Eoin		Stone (Chipped)	C	C	Prehistoric	Monitor area
NB 2883 4894	Teampull Eoin		Midden, Kitchen	C	C	Prehistoric	Monitor grave digging
NB24NE 04	Teampull Eoin		Pottery	C	C	Iron Age	Monitor
NB 2885 4894	Teampull Eoin	Cemetery		C	C	Post Medieval	Nil
NB 2895 4919	Port Mhor Bragar	Field System		B	C	Pre Clearance	Nil
NB 2934 4920	Port Arnol	Dyke, Stone and Turf		C	C	Unknown	Nil
NB24NE 08	Bragar	Township		C	C	Crofting	Nil
NB 2935 4909	Port Mhor Bragar	Cultivation, Rigging		E	C	Post Medieval	Nil

#### *5.24.4 Overview of erosion*

This section can be split up into three general erosion zones; the eroding wide sand and shingle bay of Loch Shawbost (NB 186), the generally eroding incised high cliffs from Shawbost to Labost (NB 187 to NB 189) and the generally eroding low lying rock platform and sand and shingle bays from Labost to Arnol (NB 190 to NB 192). Loch Shawbost consists of a sandy intertidal zone and shingle storm beach which dams Loch a' Bhaile behind it. There is evidence of severe erosion during storm events with a number of small eroding sections and shingle deposited well beyond the shingle ridges. Nevertheless, the rock placed to protect the track and prevent breaching of the shingle ridge, which was noted by Ramsay and Brampton (1995, p33), still remains in place which suggests a level of stability.

The next zone returns to eroding incised high cliff which is only interrupted by the sand and shingle foreshore of Mol Fivig (NB 188).

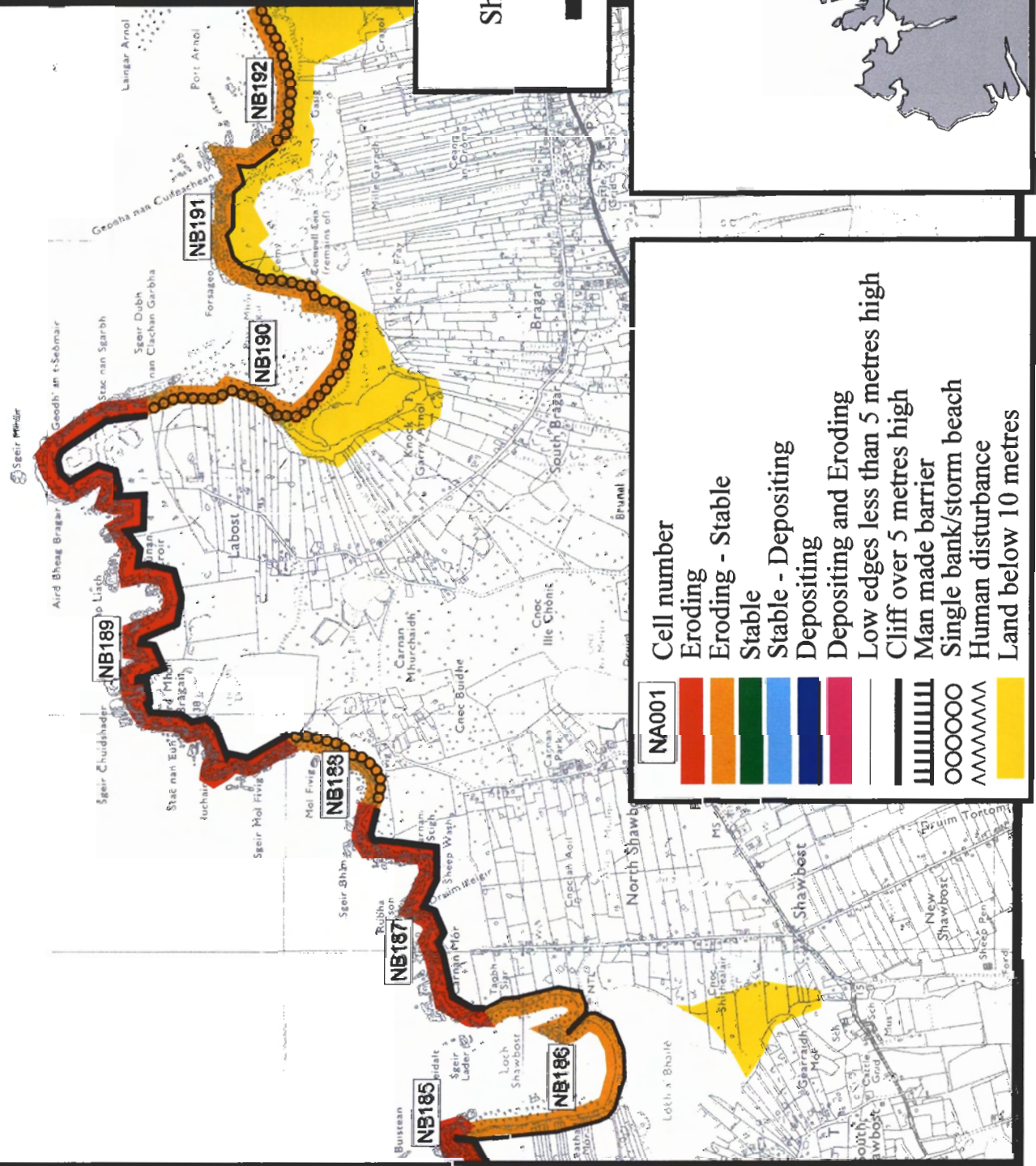
The final zone consists of the large bays and sand and shingle beaches of Port Mhor and Port Arnol, separated by a stretch of low rock platform capped with eroding substrate. Both beaches are similar in character to Loch Shawbost, with sandy intertidal zones with shingle storm beaches damming brackish lochs. Again there is widespread evidence of erosion with eroding substrate sections in areas with less shingle and shingle deposited well beyond the storm beaches. It seems sensible to monitor the three main beaches in this section only after major storms as the present levels of shingle and boulders in these areas seem to protect the substrate from normal wave action, which would erode the softer machair zones of Barvas for example.

**5.24.5 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 185	NB 252 482	A-Eroding	Shawbost	Mainly Rock Platform	Glacial sand and Gravel	Gneiss	4214.918	Cliff over 5 m.
NB 186	NB 263 480	B-Eroding/ Stable	Shawbost	Mainly Sand	Wind Blown Sand	Gneiss	1899.425	Low edge < 5 m.
NB 187	NB 260 484	A-Eroding	Rubha Garson	Mainly Rock Platform	Glacial sand and Gravel	Gneiss	1927.785	Cliff over 5m.
NB 188	NB 267 487	B-Eroding/ Stable	Mol Fivig	Mainly Sand	Glacial sand and Gravel	Gneiss	587.650	Shingle / storm bank
NB 189	NB 274 496	A-Eroding	Labost	Mainly Rock Platform	Glacial sand and Gravel	Gneiss	3504.417	Cliff over 5m.
NB 190	NB 284 490	B-Eroding/ Stable	Port Mhor Bragar	Mainly Sand	Wind Blown Sand	Gneiss	1606.621	Shingle / storm bank
NB 191	NB 291 492	B-Eroding/ Stable	Port Mhor Bragar	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	1173.270	Cliff over 5m.
NB 192	NB 296 490	B-Eroding/ Stable	Port Arnol	Mainly Sand	Wind Blown Sand	Gneiss	646.061	Shingle / storm bank

# COASTAL EROSION ASSESSMENT(LEWIS) MAP SHEET NB 25 46/NB 30 50

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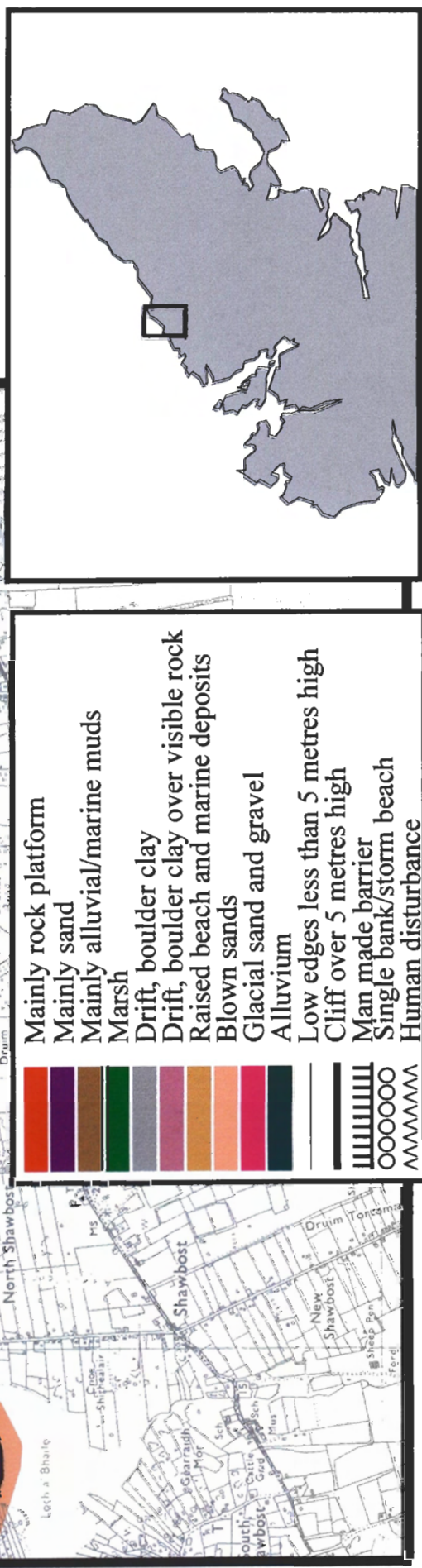


5.24.6 *Overview of coastal geomorphology*

The geomorphology of this section is characterised by incised cliff line and the three sand and shingle bays and beaches of Loch Shawbost, Port Mhor and Port Arnol. The cliffs of basement Lewisian Gneiss show an incised profile of selective erosion along joints of weakness which characterise some of the early map sheets and much of the linear stretch of cliffs of north-west Lewis. These are overlain by deeper and more widespread deposits of glacially derived substrate and *in situ* weathered material than has generally been encountered before. The three bays and beaches are similar in character with sandy intertidal zones and lower beaches backed by shingle storm beaches damming brackish lochs.



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## 5.25 MAP SHEET NB 30 49/NB 35 53, ARNOL TO BARVAS

## 5.25.1 Overview of cultural heritage

## 5.25.1.1 Number of monuments

Scheduled	- 0	
Recorded in the NMRS	- 7	[NB35SW 12, NB35SW 09, NB35SW 11, NB35SW 05, NB35SW 06, NB35SW 04, NB35SW 03 ]
Others	- 82	
<b>Total</b>	<b>- 89</b>	

## 5.25.1.2 Number of site state occurrences

Eroding (A)	- 47
Eroding/stable (B)	- 3
Stable (C)	- 39

## 5.25.1.3 Number of response occurrences

Nil	- 30
Monitor, (Baseline survey)	- 58
Detailed survey	- 31
Sample	- 3
Excavate	- 29

## 5.25.2 Description of cultural heritage

This map sheet covers the townships of Arnol, Bru and Barvas and is characterised by beaches with shingle banks, and the machair system to the west of Barvas. The majority of the sites are believed to be prehistoric in origin and are found in the Barvas Machair. While most of this machair system falls outwith the remit of this survey not being on the eroding edge or within 150 metres of the eroding edge, it suffers heavy aeolian erosion.

In general the monuments in this machair area can be split into two areas separated by the Handay River. On the north facing slopes of Cnoc Mor to the south of the river is a complex field system with rectilinear fields that overlie the fragments of a curvilinear field system. At the centre of this field system is a rectilinear structure. It has been suggested that this settlement may date to the Norse period (pers. comm. M McLoed 1996) but equally it may date to the medieval or post-medieval period.

To the north of Handay River are more fragmentary and confused remains appearing in irregular sand blows. On the basis of artefacts recovered several of these features may be Bronze Age in date. Sites in this system include cellular complexes (NB 3500 5162), stone alignments that form field

systems (NB 3502 5174 and NB 3503 5185) and burials in the form of cairns (NB 3500 5162 and NB 3496 5168) and cists (NB 3491 5171 and NB35SW 04). Aceramic shell middens (NB 3488 5170, NB 3503 5185 and NB 3491 5188) have also been noted at lower levels in the machair but the dates of these deposits are not clear. The detailed survey and sampling of this complex of monuments would vastly improve our understanding these sites. At present it is believed that this group of monuments represents one of the largest conglomerations of prehistoric sites on the Isle of Lewis.

Other sites of interest on this map sheet include the man made island in Loch Arnol (NB 3014 4902) and the settlement of old Arnol (NB 3026 4937). A promontory enclosure (NB 3124 5005) of between 1 and 2 hectares at Geodha Mhaoir lies immediately to the north of Arnol alongside prehistoric cairns (NB 3134 5025 and NB 3134 5034). Two possible CARHs have also been recorded, the first immediately north of Arnol (NB 3138 5031) is barely visible above ground level, and is a circular stone enclosure of monumental construction measuring *circa* 10.0 metres in diameter. The configuration of the remains suggest that this site could be a CARH or a large Bronze Age cellular site of similar form to those seen at Guinnerso. The second CARH is recorded as being a possible cairn. It is located to the north of Bru (NB 3378 5085) on the shingle bar between Loch Mor Barvas and the sea and without more detailed survey and stone removal it would be impossible to say what the exact form of the site is.

Finally two cellular complexes can be seen on the cliffs to the north-west of Bru (NB 3210 5064 and NB 3214 5069) at present both of these complexes are stable such that no erosional damage is occurring and no dating evidence (in the form of artefacts) has been gathered. As with any other monument of this type, elsewhere on the island, little or no information is known about the dating of such sites and only a programme of sampling and research will start to help alleviate this problem.

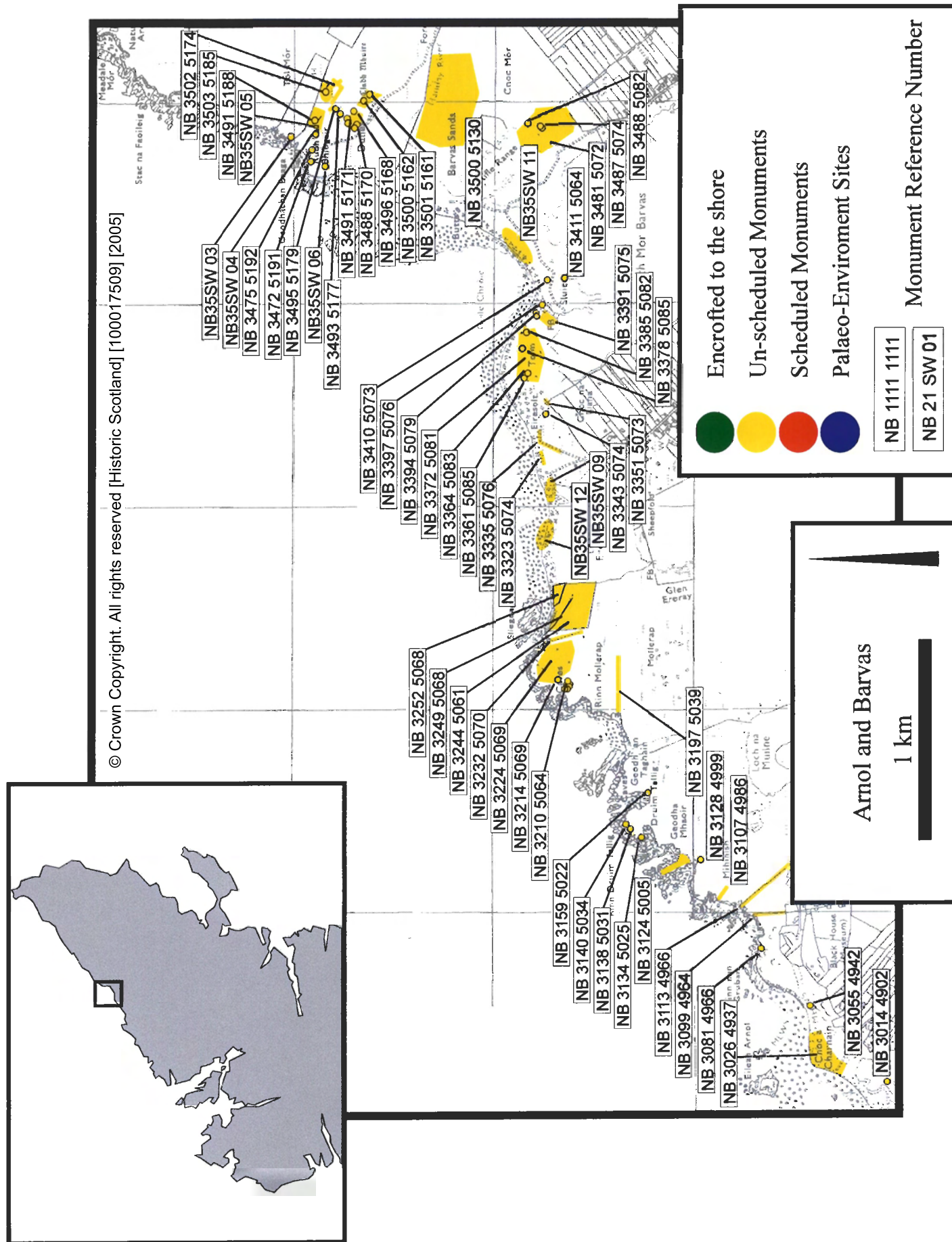


# COASTAL EROSION ASSESSMENT (LEWIS)

## 5.25.3 Gazetteer of cultural heritage

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB 3014 4902	Loch Arnol	Man made island		C	C	Prehistoric	Monitor (?)
NB 3026 4937	Arnol	Settlement (old Arnol)	Midden, Kitchen	A	A	Multi-phase	Monitor, sample (?)
NB 3055 4942	Arnol	Enclosure, Habitational, Curvilinear, Turf and stone		C	C	Unknown	Nil
NB 3081 4966	Arnol	Enclosure, Habitational, Curvilinear, Drystone		C	C	Unknown	Nil
NB 3099 4964	Arnol	Dyke, Stone and Turf		C	C	Post Medieval	Nil
4NB 3113 4966	Arnol	Dyke, Stone and Turf		C	C	Post Medieval	Nil
NB 3107 4986	Arnol	Dyke		C	C	Unknown	Nil
NB 3128 4999	Arnol	Dyke, Stone and Turf		C	C	Unknown	Nil
NB 3124 5005	Arnol	Promontory Enclosure		A	A	Prehistoric	Monitor, survey
NB 3134 5025	Arnol	Cairn		A	A	Prehistoric	Monitor
NB 3138 5031	Arnol	CARH (possible)		A	C	Iron age	Monitor
NB 3140 5034	Arnol	Cairn		A	C	Prehistoric	Monitor
NB 3159 5022	Arnol	Dyke, Turf		A	A	Unknown	Monitor
NB 3197 5039	Bru	Dyke, Turf, promontory enclosure		A	A	Prehistoric	Monitor
NB 3210 5064a	Bru	Cairn		A	C	Unknown	Monitor
NB 3210 5064b	Bru	Cairn		C	C	Unknown	Nil
NB 3210 5064c	Bru	Cairn		C	C	Unknown	Nil
NB 3210 5064d	Bru	Cairn		C	C	Unknown	Nil
NB 3210 5064e	Bru	Cairn		C	C	Unknown	Nil
NB 3210 5064f	Bru	Cellular Complex		C	C	Prehistoric	Monitor
NB 3214 5069	Bru	Cellular Complex		A	C	Unknown	Monitor
NB 3224 5069	Bru	Cultivation, Rigging		A	A	Pre Clearance	Monitor
NB 3232 5070	Bru	Dyke, Stone and Turf		A	A	Unknown	Monitor
NB 3244 5061	Bru	Cultivation, Rigging		A	A	Pre Clearance	Monitor
NB 3249 5068	Bru	Dyke, Turf		A	A	Prehistoric	Monitor
NB 3252 5068	Bru	Dyke, Stone and Turf		A	A	Post Medieval	Monitor
NB35SW 12	Bru	Enclosure		A	A	Unknown	Monitor
NB35SW 09	Bru	Farm Stead		A	A	Post Medieval	Monitor
NB 3323 5074	Bru	Dyke, Stone and Turf		C	C	Unknown	Nil
NB 3335 5076	Bru	Path/Road		C	C	Post Medieval	Nil
NB 3343 5074	Bru	Stone Alignment		C	C	Pre Clearance	Nil
NB 3351 5073	Bru	Dyke, Drystone		C	C	Post Medieval	Nil
NB 3361 5085	Bru	Cairn, rectangular		C	C	Unknown	Nil

**COASTAL EROSION ASSESSMENT(LEWIS)**  
**MAP SHEET NB 30 49/NB 35 53**



**COASTAL EROSION ASSESSMENT (LEWIS)**

NB 3364 5083	Bru	Enclosure, Rectilinear, Stone and earth core		C	C	Unknown	Nil
NB 3372 5081	Bru	Cultivation, Rigging		C	C	Pre Clearance	Nil
NB 3378 5085	Bru	Cairn, possible CARH		C	C	Prehistoric	Monitor
NB 3385 5082a	Bru	Enclosure, Curvilinear, Turf and stone		C	C	Prehistoric	Monitor
NB 3385 5082b	Bru	Dyke, Stone and Turf		C	C	Unknown	Nil
NB 3391 5075a	Bru	Dyke, Stone and Turf		C	C	Unknown	Nil
NB 3391 5075b	Bru	Enclosure, Curvilinear, Drystone		C	C	Unknown	Nil
NB 3394 5079a	Bru	Cairn		C	C	Unknown	Nil
NB 3394 5079b	Bru	Enclosure, Habitational, Rectilinear, Turf and stone		C	C	Unknown	Monitor
NB 3397 5076	Bru	Marine industry features		C	C	Modern	Nil
NB 3410 5073	Bru	Marine industry features		C	C	Modern	Nil
NB35SW 11	Bru	Field System		A	A	Unknown	Monitor, survey
NB 3411 5064	Bru	Cairn		A	A	Unknown	Monitor
NB 3488 5082	Barvas	Enclosure, Rectilinear, Drystone		A	A	Unknown	Monitor, survey, excavate (?)
NB 3487 5074a	Barvas	Enclosure, Habitational, Rectilinear, Drystone		A	A	Medieval	Monitor, survey, excavate (?)
NB 3487 5074b	Barvas	Cairn		A	A	Prehistoric	Monitor, excavate (?)
NB 3500 5130	Barvas	Field system		A	A	Norse?	Monitor, survey, Excavate (?)
NB 3481 5072	Barvas	Cultivation, Rigging		A	A	Pre Clearance	Monitor, survey, excavate (?)
NB 3501 5161	Barvas	Enclosure, Habitational, Rectilinear, Drystone		A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3500 5162a	Barvas	Cellular Complex		A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3500 5162b	Barvas	Burial Cairn		A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3496 5168	Barvas	Burial Cairn		A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3491 5171a	Barvas	Burial Cist	Stone (Chipped)	A	A	Neolithic	Monitor, survey, excavate (?)
NB 3491 5171b	Barvas		Stone (Chipped)	A	A	Prehistoric	Monitor, survey, excavate (?)

**COASTAL EROSION ASSESSMENT (LEWIS)**

NB 3488 5170a	Barvas		Midden, Shell	A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3488 5170b	Barvas	Stone Alignment		A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3488 5170c	Barvas	Settlement Mound	Midden, Shell	A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3502 5174a	Barvas	Stone Alignment		A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3502 5174b	Barvas	Stone Alignment		A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3503 5185a	Barvas	Enclosure, Rectilinear, Drystone		A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3503 5185b	Barvas	Stone Alignment		A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3503 5185c	Barvas		Midden, Shell	A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3503 5185d	Barvas	Enclosure, Rectilinear, Drystone		A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3493 5177	Barvas	Stone Alignment		A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3491 5188a	Barvas	Enclosure, Habitational, Curvilinear, Drystone		A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3491 5188b	Barvas	Stone Alignment		A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3491 5188c	Barvas	Stone Alignment		A	A	Prehistoric	Monitor, survey, excavate (?)
NB 3491 5188d	Barvas	Enclosure, Rectilinear, Drystone		A	A	Unknown	Monitor, survey, excavate (?)
NB35SW 05	Barvas		Slag, Chipped stone (arrowheads, scrapers)	A	A	Prehistoric	Monitor, survey, sample
NB 3491 5188e	Barvas		Midden, Shell	A	A	Unknown	Monitor, survey, excavate (?)
NB 3491 5188f	Barvas	Cellular Complex		A	A	Prehistoric	Monitor, survey, excavate (?)
NB35SW 06	Barvas	Burial	Bone, Human	A	A	Unknown	Monitor
NB 3472 5191	Barvas	Stone Alignment	Midden, Shell	A	A	Unknown	Monitor, survey, excavate (?)
NB 3475 5192	Barvas	Enclosure, Rectilinear, Drystone		A	A	Unknown	Monitor, survey, excavate (?)
NB35SW 04	Barvas	Burial Cist	Bone, Human	A	A	Bronze Age	Monitor

# *COASTAL EROSION ASSESSMENT (LEWIS)*

NB35SW 03	Barvas		Midden, Kitchen	F	B	Unknown	Monitor, sample
NB 3492 5230a	Geodhachan Beaga	Dyke, Turf		B	C	Unknown	Nil
NB 3492 5230b	Geodhachan Beaga	Stone Alignment		C	C	Unknown	Nil
NB 3500 5248	Geodhachan Beaga	Cellular Complex	Midden	A	A	Prehistoric	Monitor, survey (?)
NB 3506 5263	Geodhachan Beaga	Cairn, clearance		B	C	Post Medieval	Nil
NB 3524 5287	Meadale Mor	Field system		B	C	Post Medieval	Nil
NB 3512 5273	Meadale Mor	Cairn, burial (possible)		B	B	Unknown	Monitor (?)
NB 3519 5282	Meadale Mor	Cairn, clearance		B	B	Unknown	Nil
NB 3536 5291a	Meadale Mor	Enclosure, Rectilinear, Drystone		C	C	Post Medieval	Nil
NB 3536 5291b	Meadale Mor	Enclosure, Habitational, Rectilinear, Drystone		C	C	Post Medieval	Nil

#### 5.25.4 Overview of erosion

This section can be split into four zones of general erosion zones including;

- the eroding north-eastern half of Port Arnol sand and shingle beach (NB 193)
- the generally eroding incised cliff line from Arnol to Loch Ereray (NB 194 to NB 195)
- the eroding machair of Barvas (NB 196 to NB 199)
- the eroding/stable incised cliff from Barvas to Meadale Mor (NB 200)

The first zone represents the continuation of Port Arnol (see description in section 4.2.16). The second zone returns to incised cliff which at the time of inspection seemed to not display as many signs of active erosion as the incised cliff lines from the preceding map sheets in the linear stretch of cliffs of north-west Lewis. However, the resulting stacks and promontories have again been used for past settlement, in the form of a few promontory enclosures (e.g. NB 3124 5005), which deserve regular monitoring.

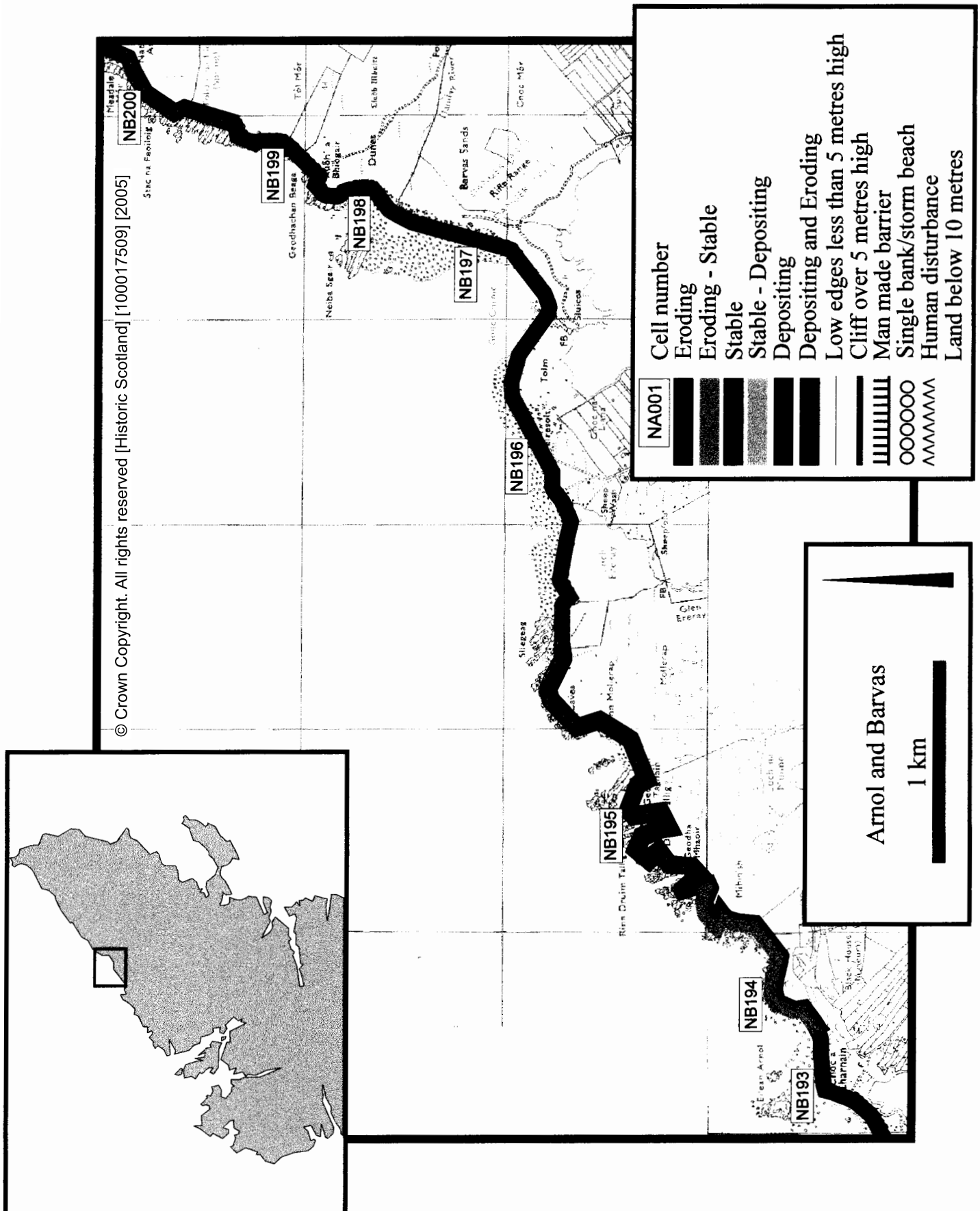
The next zone represents the sand and machair extent of Barvas. This is the largest expanse of machair in Lewis, and has been the subject of past erosion assessment with work by the University of Aberdeen (Ritchie and Mather 1970, Harris and Ritchie 1989), assessment and excavations by Cowie (Cowie 1994, Cowie et al. forth.) and the recent survey by Ramsay and Brampton (1995). All the assessments noted two erosion regimes; the sand and shingle ridge at the coast experiencing some erosion and overwash (especially at Loch Eresay) but in general relatively stable, and the severely eroding machair and dune system behind the coastal edge. This erosion is not caused by direct marine action, but instead stems from severe wind deflation which has produced extensive and widespread blowouts which contain many archaeological sites of prehistoric and unknown age. The wind deflation itself is exacerbated, and in some places initiated, by the land use in the machair, including sand extraction in the dune systems to the north, heavy rabbit and sheep grazing and cultivation practises in certain areas (e.g. to the north of Lower Barvas). Hence, Barvas machair not only deserves regular monitoring but also seems to deserve a more direct management strategy, involving not only the detailed recording and characterisation of the archaeology but also the development of a more long term environmental strategy to attempt to halt, or at least attempt to control the erosion. However, as Harris and Ritchie highlighted (1989, p6) this will be very expensive and difficult to achieve.

The final zone consists of low rock platform capped by a depth of some 2-3 m. of glacial sands and gravels which are experiencing active marine erosion.

**5.25.5 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 193	NB 302 493	A-Eroding	Cnoc a Charnain	Mainly Sand	Wind Blown Sand	Gneiss	683.472	Storm / shingle bank
NB 194	NB 309 498	B-Eroding/ Stable	Mihinish	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	1155.241	Cliff over 5 m.
NB 195	NB 316 504	A-Eroding	Bru	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	2721.290	Cliff over 5 m.
NB 196	NB 332 507	A-Eroding	Bru	Mainly Rock Platform	Wind Blown Sand	Gneiss	1850.747	Storm / shingle ridge
NB 197	NB 344 513	A-Eroding	Barvas	Mainly Sand	Wind Blown Sand	Gneiss	1291.598	Storm / shingle ridge
NB 198	NB 347 519	A-Eroding	Barvas	Mainly Rock Platform	Wind Blown Sand	Gneiss	453.366	Low edge < 5 m.
NB 199	NB 349 523	B-Eroding/ Stable	Geodhachan Beaga	Mainly Rock Platform	Wind Blown Sand	Gneiss	681.754	Shingle / storm bank
NB 200	NB 351 527	B-Eroding/ Stable	Stac na Faoileig	Mainly Rock Platform	Glacial sand and Gravel	Gneiss	352.432	Low edge < 5m.

**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 30 49/NB 35 53**





#### 5.25.6 Overview of coastal geomorphology

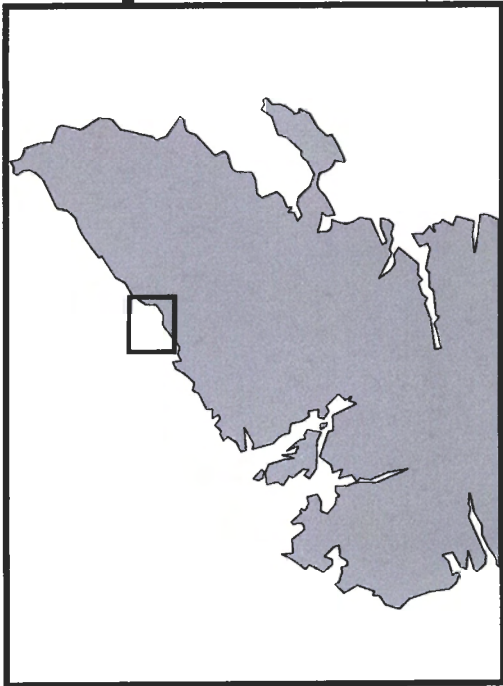
The descriptions of the geomorphology will follow the breakdown of the section into the general erosion zones above. The first zone marks the continuation of Port Arnol sand and shingle beach and is described in section 5.25.4.

The second zone reverts to incised cliff of basement Lewisian Gneiss capped by widespread substrate of glacially derived material and *in situ* weathered material.

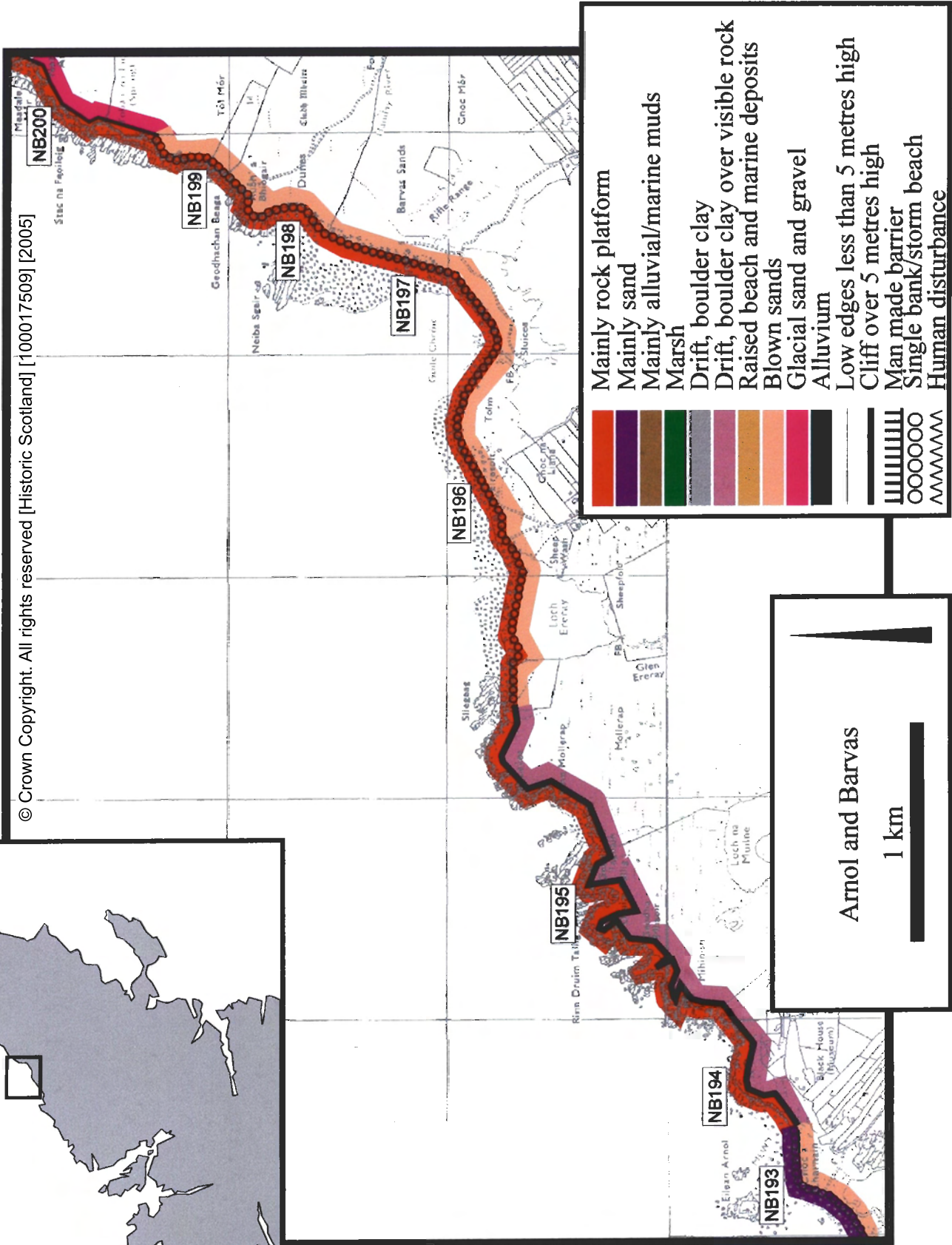
The third zone of Barvas machair occupies a small embayment with a shingle ridge, the core of which is said to have had a glacial origin (Harris and Ritchie 1989, p1), enclosing the dune system of the north and the machair plain of the central and southern areas as well as the water bodies of Loch Mor Barvas and Loch Eresay to the south. The dune system has been greatly truncated by sand extraction and is deeply unstable, with large erosion scars and blow outs. This is also true of the machair plain which exhibits severe signs of aeolian erosion and in some places sand accretion, such as the south-east of Cnoc Mor. Much of the area is underlain by till judging by some sand exhausted blowouts which expose the drift geology.

The final zone returns to low rock platform of basement Lewisian Gneiss capped by glacially derived material and *in situ* weathered material, identical in character to that underlying Barvas machair.

COASTAL EROSION ASSESSMENT(LEWIS)  
 MAP SHEET NB 30 49/NB 35 53



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## 5.26 MAP SHEET NB 35 52/NB 40 57, BARVAS TO SHADER

## 5.26.1 The geomorphology of north-west Lewis

The following four map sheets incorporate a unique assemblage of landforms and deposits which have provided critical information on the latter stages of the Quaternary in Scotland. Hence, a general overview of the sites and landforms will be made here followed by a discussion on the implications this assemblage has on the erosion regimes and archaeology within this stretch.

This stretch of approximately 19 km. from Cladach Lag na Geinne (NB 387557) to Cunndal (NB 512655), contains a number of stratigraphic sections and landforms relating to past glacial and marine activity. The locations of these sites and landforms can be seen in Figure 3

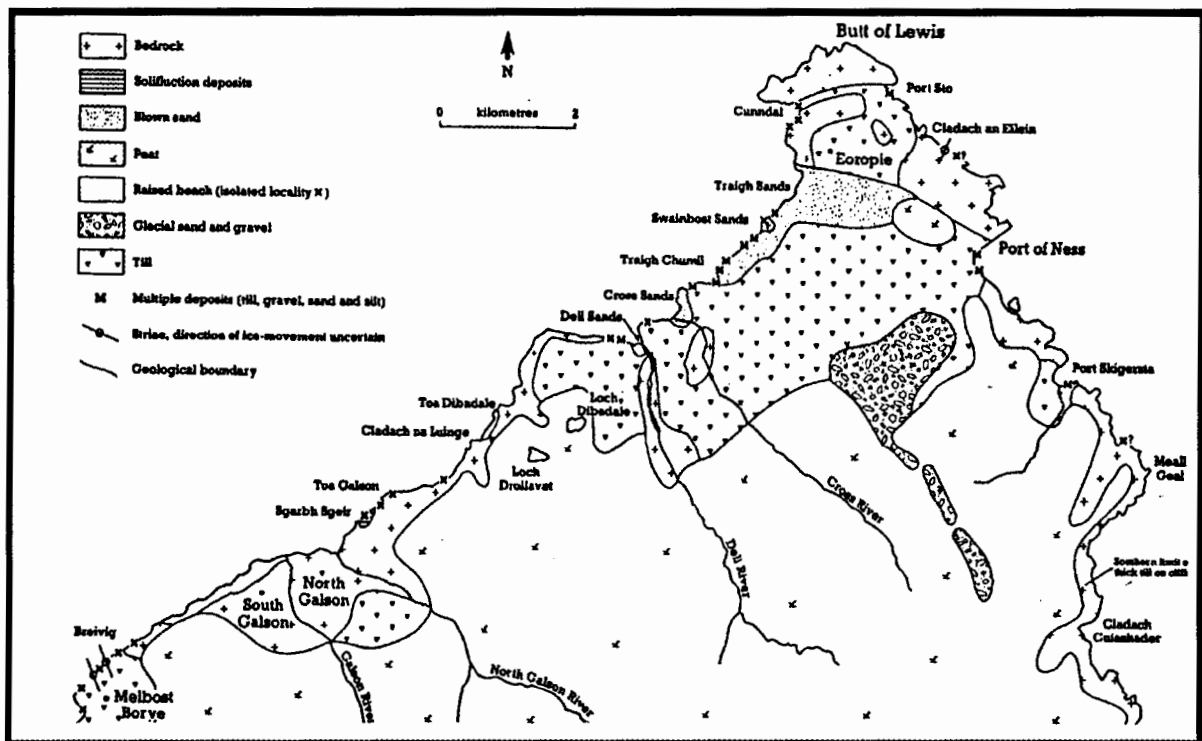


Figure 3: Quaternary deposits of north-west Lewis (Source: Peacock, 1984)

These landforms have been the subject of research since the nineteenth century with many papers published covering both detailed stratigraphic sequences and attempts to synthesise the diverse data set. The latest summary and interpretation (Gordon 1993a, p415) identifies five principal recurring features in the landscape which provide a provisional sequence from the earliest to the latest stratigraphical units including;

1. Raised shore platform and cliffline
2. Till and peat deposits
3. Head
4. Raised beach deposits with a cryoturbated upper horizon
5. Various deposits of glacially derived material.

#### *5.26.1.1 Raised shore platform and cliffline*

The earliest feature and stratigraphic unit consists of a discontinuous raised shore platform and cliffline, which can be best seen from Galson (palaeoenvironment site NB 453 603) to Dell (NB 472621). Gordon (1993a, p415), when summarising the work by von Weymarn (1974), identified some key characteristics of the platform including;

- it is cut across the Lewisian Gneiss and Metasediment bedrock structure
- its seaward margin is sometimes covered in modern sand and shingle
- there is often a step down to a lower intertidal shore platform
- zones of weathered rock occur on its surface
- its landward margin is generally drift covered
- it is widest in embayments and narrows toward headlands where the backing cliff is best seen
- abandoned stacks occur on its surface
- its distribution is largely confined to the area outside that of local glaciation in Lewis; a few remnants within the latter area are severely ice-modified.

#### *5.26.1.2 Till and peat deposits*

At different locations, the shore platform is overlain by till and an organic rich deposit, which is best viewed at the eroding section at Toa Galson (palaeoenvironment site NB 453 603). Here, a peaty deposit interbedded with sands, overlies the rock platform. The peat is in turn overlain by head and

raised beach gravels. Radiocarbon and pollen samples were taken of this deposit which indicated the development of the vegetation from treeless, open grassland to an acid heath grassland (Sutherland and Walker 1984). The radiocarbon dates of greater than 39000 to 47150 BP (SRR-2365) show that this peat and the underlying rock platform are older than is possible to date by radiocarbon, perhaps relating to an early Devensian interstadial, the Ipswichian interglacial or even earlier. However, the pollen spectra is different from the interstadial from Tolsta Head (see section 4.2.26) and St. Kilda (Sutherland et al. 1984), so the peat represents a phase prior to the Middle Devensian not covered chronologically by these sites.

#### 5.26.1.3 *Head*

At various locations, such as Toa Galson, the raised shore platform is overlain by head deposits which themselves are in general overlain by raised beach gravels and till.

#### 5.26.1.4 *Raised beach deposits*

These form an important stratigraphic marker at a number of locations within the area (von Weymarn 1974, Peacock 1984) and can be overlain, underlain and interdigitated by till and head deposits. For example, these deposits overlie till at Cladach na Luinge (NB 465611), are interbedded at South Galson (NB 431591), and are overlain by head and soliflucted till between North Galson (NB 438595) and Breivig (NB 413582) (Gordon 1993a, p415).

#### 5.26.1.5 *Various deposits of glacially derived material*

Overlying the raised beach gravels are a number of different stratigraphic members ranging from head to soliflucted till and multiple drift deposits around Swainbost (palaeoenvironment site NB 502 637) and Dell. These consist of a complex succession of interbedded tills, sands, gravels, laminated clays and silts some of which contain marine molluscan assemblages. No detailed stratigraphical studies have been undertaken, though the marine molluscan assemblages have been investigated. Etheridge (1876) produced a faunal list of arctic and northern affinity, which Baden Powell assigned to the top member of the general tri-partite succession he proposed (1938). These shells have subsequently been dated by both radiocarbon and amino acid analysis indicating that these shell beds date from the Early and Middle Devensian (Gordon 1993a, p417).

**5.26.2 *Wider interpretation of the sequence***

Gordon (1993a, p420) summarised the possible chronological sequence of this area as follows;

1. Raised shore platform of pre-Devensian age
2. Till (pre-dating the raised beach deposits) of pre or possible Early Devensian age
3. Organic deposits, possible interglacial (pre-dating the raised beach deposits)
4. Periglacial deposits
5. Raised beach deposits (pre-Late Devensian)
6. Late Devensian features, including till limits, shelly multiple drift sequences and ice-free areas with associated periglacial deposits.

When the vegetation and faunal analyses and the wider geomorphology are considered within this relatively coherent chronological framework, the north-west coast of Lewis becomes extremely important to the consideration of Late Quaternary environments of Scotland. One of the most important features to come from this research is the realisation that the very existence and character of some of these landforms owes much to their position outwith the maximum extent of the Devensian ice-sheet 18000 years ago. Hence, the presence of this ice-free area at this time means re-assessment is needed for modelling of the last ice-sheet and the resulting palaeoclimatic reconstructions.

**5.26.3 *Implications for coastal erosion***

The very complexity of this suite of landforms and stratigraphic sections raises a number of points in relation to the assessment and presentation of coastal geomorphology within what is essence an assessment of the perceived threat from coastal erosion to the archaeology and built heritage. Within this report, the geomorphology in the area outlined above has been described by the preceding general overview and by the map sheets following the normal convention of graphically displaying the erosion/geomorphic units with key palaeoenvironmental sites, such as Toa Galson (palaeoenvironment site NB 453 603), located as individual elements. It can be seen that the foreshore and hinterland geomorphology have been described by the stratigraphic member immediately visible or just underlying the surface soil.

This convention has been followed for two reasons; firstly this fitted in with the assessment methodology of the rest of the survey but more importantly, the top member directly related to the

erodibility of the underlying substrate/matrix on which the archaeology sat. Therefore, none of the stretches of raised beach gravels have been noted by the assessment methodology, only the overlying tills and soliflucted head deposits on which the archaeological sites are overlying and hence threatened if this top member is eroding. Unfortunately, this means the vast majority of the complexity of the area is lost in the presentation.

Superficially, this appears as a criticism of both the methodology outlined by Historic Scotland (1996) and also the field methodology proposed but what has resulted is a user-friendly compilation of complex data, with the presentation of the salient features of the erosion regimes within the top-most units of the geomorphic landscape. This highlights the two key factors to which Ashmore (1994) alluded; that the intention to analyse the geomorphology within the survey was not to provide detailed evidence of the geomorphology *per se* but rather it was to allow the effective analysis and assessment of the erosion regimes observed within the erosion/geomorphic units and to address more site-specific issues of the visibility, preservation and management of the individual sites in the coastal zone.

#### 5.26.4 Overview of cultural heritage

##### 5.26.4.1 Number of monuments

Scheduled	- 1	[5341]
Recorded in the NMRS	- 10	[NB35SE 37, NB35SE 25, NB35SW 26, NB35SE 36, NB35SE 34, NB35SE 11, NB35SE 31, NB35SE 10, NB35NE 04, NB35NE 07]
Others	- 26	
<b>Total</b>	<b>- 36</b>	

##### 5.26.4.2 Number of site state occurrences

Eroding (A)	- 0
Eroding/stable (B)	- 1
Stable (C)	- 35

##### 5.26.4.3 Number of response occurrences

Nil	- 33
Monitor, (Baseline survey)	- 2
Detailed survey	- 0
Sample	- 0
Find site location	- 1



**5.26.6 Description of cultural heritage**

This map sheet covers the township Shader, it is characterised by low eroding edges of less than 5 metres above rock cut platforms backed by good grazing ground and crofts. While some of the sites here are of uncertain date, most are believed to be of the post-medieval, pre-crofting and crofting periods. The NMRS lists three steadings and field systems (NB35SE 36, NB35SE 37 and NB35SE 34), two sheilings (NB35SE 25 and NB35NE 07 though the former has been re-interpreted as a horizontal mill) by the recording surveyors and the crofting settlement of Shader (NB 35NE 04).

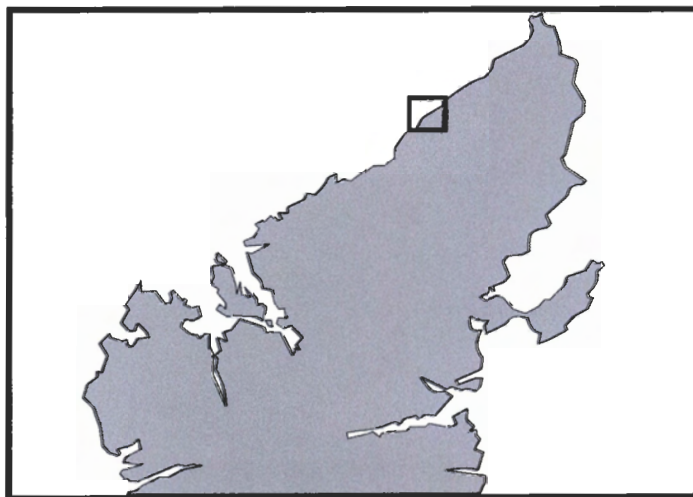
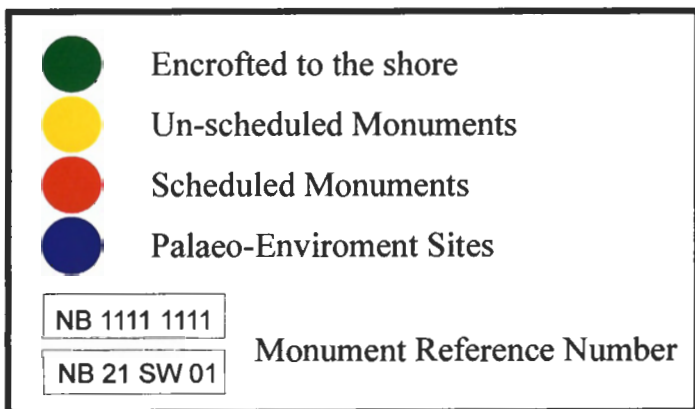
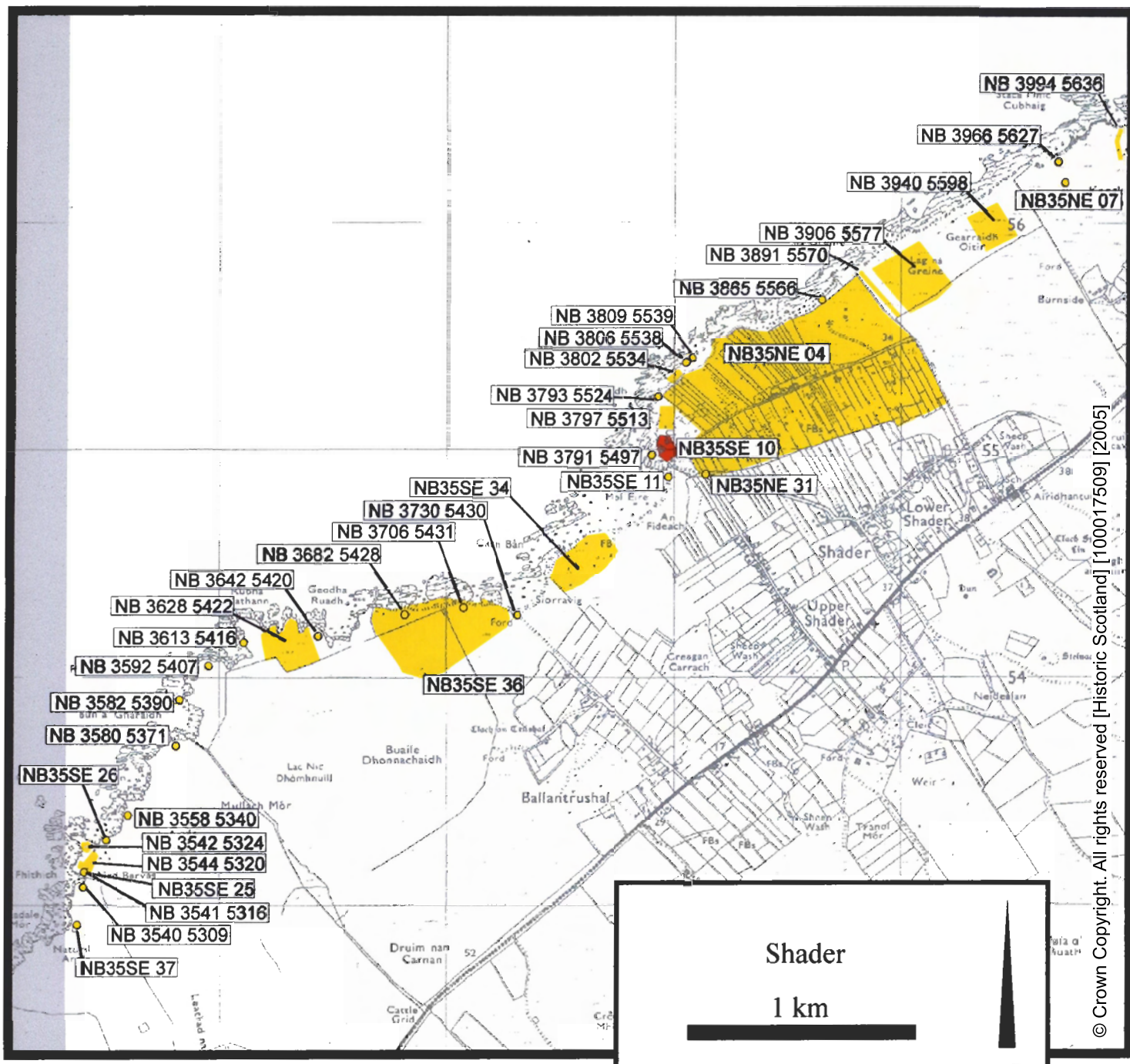
Of the sites of unknown date several are of note. There are three cellular complexes of unknown date (NB 3540 5390, NB 3613 5416 and NB 3809 5539), of these the first consists of more than 5 turf cells and the last is a single turf cell. Also of uncertain date is a cist (NB 3966 5627) which is situated on the Knock Hanga to the north of Shader.

One Scheduled Ancient Monument is recorded on this map sheet (number 5341 - NB35SE 10), this is the Teampul Pheadair at Shader.

**5.26.6 Gazetteer of cultural heritage**

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB35SE 37	Meadale Mor	Possible Farm steading		C	C	Post Medieval	Nil
NB 3540 5309	Meadale Mor	Cellular Complex, 5+ turf built		C	C	Unknown	Nil
NB35SE 25	Aird Barvas	Sheilings (possible)		C	C	Unknown	Nil
NB 3541 5316	Aird Barvas	Stone Alignment		C	C	Unknown	Nil
NB 3542 5324	Aird Barvas	Settlement, 4 rectilinear structures		C	C	Pre Clearance	Nil
NB 3544 5320	Aird Barvas	Cultivation, Square Cut		C	C	Pre Clearance	Nil
NB35SE 26	Aird Barvas	Mill, Horizontal (Listed in NMRS as a sheiling)		C	C	Pre Clearance	Nil
NB 3558 5340	Aird Barvas	Dyke, Stone and Turf		C	C	Pre Clearance	Nil
NB 3580 5371	Aird Barvas	Cairn		C	C	Post Medieval	Nil
NB 3582 5390	Aird Barvas	Cairn		B	B	Modern	Nil
NB 3592 5407	Rubha Leathann	Settlement, including turf cells		B	C	Unknown	Monitor (?)
NB 3613 5416	Rubha Leathann	Cellular Complex		C	C	Unknown	Nil
NB 3628 5422	Rubha Leathann	Field System		C	C	Pre Clearance	Nil
NB 3642 5420	Geodha Ruadh	Enclosure, Curvilinear, Turf and stone		C	C	Unknown	Nil

**COASTAL EROSION ASSESSMENT(LEWIS)**  
**MAP SHEET NB 35 52/NB 40 57**



**COASTAL EROSION ASSESSMENT (LEWIS)**

NB35SE 36	Siorravig	Farmstead		C	C	Unknown	Nil
NB 3682 5428	Siorravig	Stone Alignment		C	C	Unknown	Nil
NB 3706 5431	Siorravig	Stone Alignment		C	C	Unknown	Nil
NB 3730 5430	Siorravig	Enclosure, Rectilinear, Drystone		F	C	Post Medieval	Nil
NB35SE 34	Mol Eire	Field System		F	C	Post Medieval	Nil
NB35SE 11	Mol Eire		Midden, Kitchen	F	C	Prehistoric	Find site location
NB35SE 31	Mol Eire	Building		C	C	Unknown	Nil
NB35SE 10	Teampull Pheadair	Ruined Church		C	C	Medieval	Nil
NB 3791 5497	Mol Eire	Enclosure, Rectilinear, Drystone		C	C	Post Medieval	Nil
NB 3797 5513	Cuivatotar	Field System		C	C	Post Medieval	Nil
NB 3793 5524	Cuivatotar	Enclosure, Habitational, Rectilinear, Turf and stone		C	C	Unknown	Nil
NB35NE 04	Cuivatotar	Field System, modern settlement, Shader		C	C	Crofting	Nil
NB 3802 5534	Cuivatotar	Blackhouses		C	C	Post Medieval	Nil
NB 3806 5538	Cuivatotar	Enclosure, Rectilinear, Turf and stone		C	C	Unknown	Nil
NB 3809 5539	Cuivatotar	Cell		C	C	Unknown	Nil
NB 3865 5566	Cuivatotar	Enclosure, Curvilinear, Drystone		C	C	Unknown	Nil
NB 3891 5570	Shader	Dyke, Stone and Turf		C	C	Unknown	Nil
NB 3906 5577	Shader	Cultivation, Rigging		C	C	Pre Clearance	Nil
NB 3940 5598	Shader	Cultivation, Rigging		C	C	Pre Clearance	Nil
NB 3966 5627	Borve	Burial Cist		C	C	Unknown	Monitor
NB35NE 07	Borve	Sheiling		C	C	Unknown	Nil
NB 3994 5636	Borve	Track		C	C	Crofting	Nil

**5.25.7 Overview of erosion**

This section consists of three zones of general erosion including;

- the eroding/stable shingle low cliff and rock platform from Meadale Mor to Geodha Ruadh (NB 200 to NB 202)
- the eroding/depositing shingle low rock platform and shingle beach to Mol Eire (NB 203)
- the eroding/stable low cliff and rock platform past Shader to Borve (NB 204 to NB 206)

The first zone consists of low rock platform and shingle foreshore, which shows some signs of erosion including small-scale cliff slips and shingle deposited beyond the foreshore, presumably by storm action.

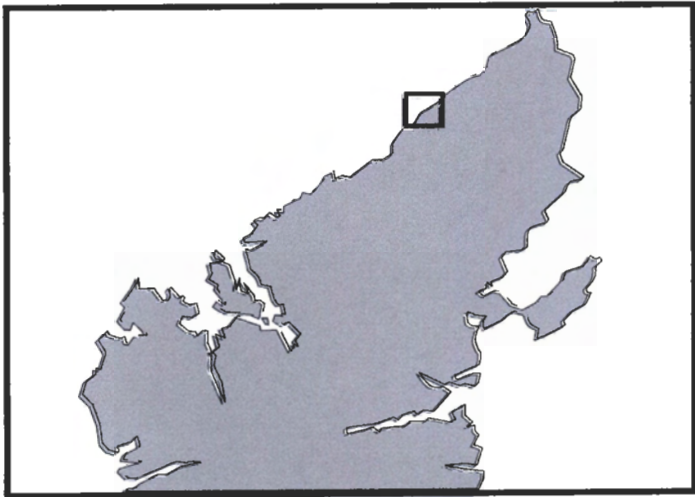
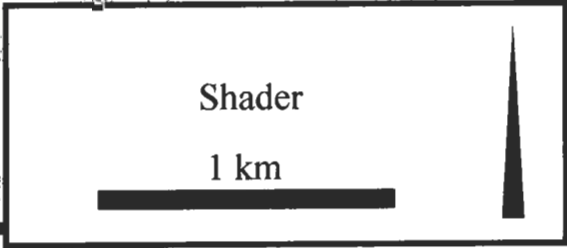
The next zone (NB 203), exhibits a similar configuration of low rock platform and shingle, but with a greater concentration of shingle which shows signs of both erosion and deposition along the coastal edge. The deposition is especially marked at Mol Eire, with shingle piled against the land edge but there are also signs of shingle thrown far beyond the coast edge during severe storms.

The final zone consists of low cliffs with little shingle, which begin to show signs of the deep stratified sections of till, glacial sands and gravels, and marine deposits described by 5.26.1. These 'soft' cliffs increasingly show signs of erosion, with cliff slips and a continuous eroding edge of at least 3 m. high, which as Brampton and Ramsay (1995, p31) pointed out would be particularly susceptible to erosion during storms.

**5.26.8 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 200	NB 351 527	B-Eroding/ Stable	Stac na Faoileig	Mainly Rock Platform	Glacial sand and Gravel	Gneiss	352.432	Low edge < 5m.
NB 201	NB 355 533	B-Eroding/ Stable	Aird Barvas	Mainly Rock Platform	Glacial sand and Gravel	Gneiss	1805.390	Shingle / storm bank
NB 202	NB 361 541	B-Eroding/ Stable	Rubha Leathann	Mainly Rock Platform	Glacial sand and Gravel	Gneiss	1378.570	Low edge < 5m.
NB 203	NB 372 544	F-Eroding/ Depositing	Mol Eire	Mainly Sand	Glacial sand and Gravel	Gneiss	1917.427	Shingle / storm bank
NB 204	NB 381 553	B-Eroding/ Stable	Cuivatotar	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	1453.785	Low edge < 5m.
NB 205	NB 391 560	C-Stable	Shader	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	917.731	Low edge < 5m.
NB 206	NB 398 564	B-Eroding/ Stable	Borve	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	849.724	Low edge < 5m.



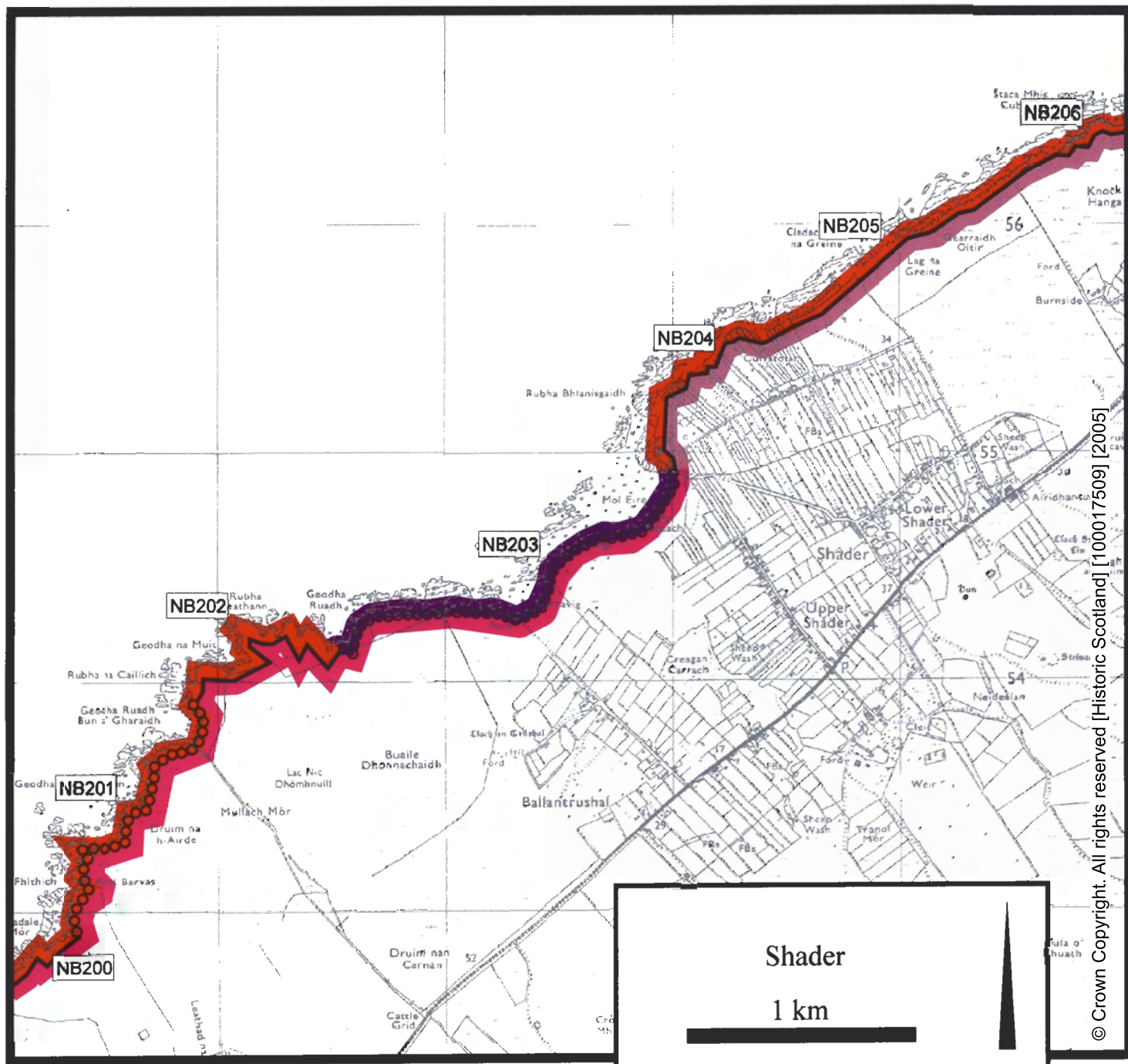
**MAP SHEET NB 35 52/NB 40 57**

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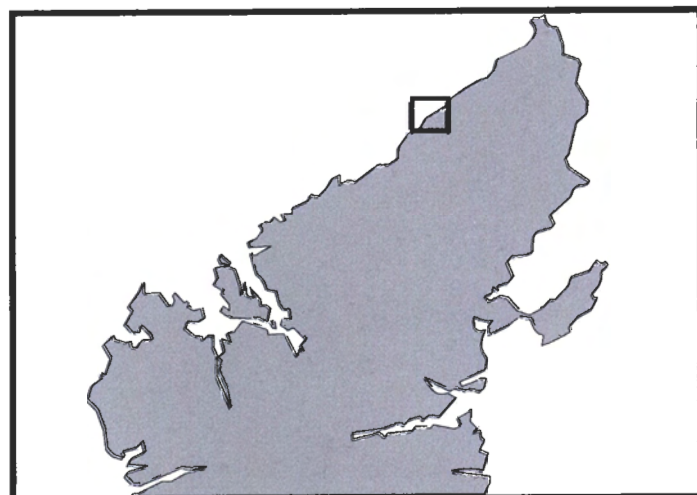
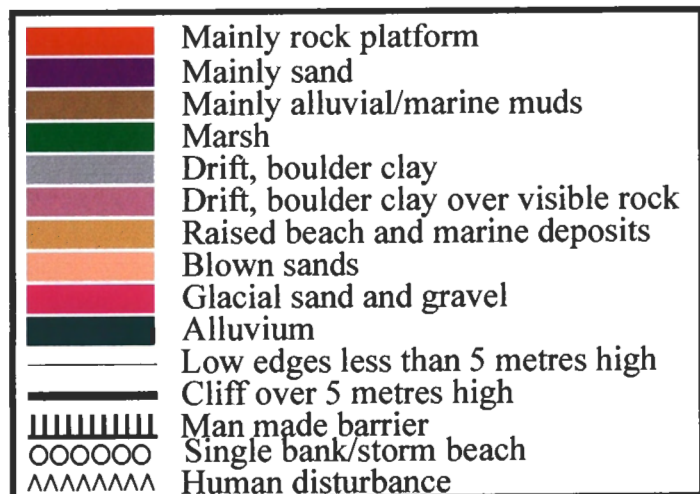
**5.26.9** *Overview of coastal geomorphology*

The geomorphology of this section seems to consist of two parts, the first half up to Mol Eire made up of a shingle upper beach with a low rock platform and the low softer till cliffs and rock platform of the second half. The till cliffs of the second half start to show the complex stratigraphic sequence described in section 5.26.1.

**COASTAL EROSION ASSESSMENT (LEWIS)  
MAP SHEET NB 35 52/NB 40 57**



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## 5.27 MAP SHEET NB 40 56/NB 45 60, BORVE TO GALSON

## 5.27.1 Overview of cultural heritage

## 5.27.1.1 Number of monuments

Scheduled	- 1	[1669]
Recorded in the NMRS	- 14	[NB45NW 52, NB45NW 55, NB45NW 14, NB45NW 04, NB45SW 05, NB45NW 46, NB45NW 31, NB45NW 59, NB45NW 01, NB45NW 02.01&02, NB45NW 20, NB45NW 60, NB45NW 03, NB45NW 63]
Others	- 53	
<b>Total</b>	<b>- 67</b>	

## 5.27.1.2 Number of site state occurrences

Eroding (A)	- 25
Eroding/stable (B)	- 10
Stable (C)	- 32

## 5.27.1.3 Number of response occurrences

Nil	- 26
Monitor, (Baseline survey)	- 39
Detailed survey	- 6
Sample	- 1
Excavate	- 5
Find site location	- 1

## 5.27.2 Description of cultural heritage

This map sheet covers the townships of Melbost Borge, South Galson and North Galson. This part of the coastline is characterised by low eroding faces of less than 5 metres behind a rock cut platform and backed by good grazing and croft land.

Of the sites recorded here most are of uncertain date, the large majority of the sites of interest being found in a short stretch of eroding coastline between South and North Galson. This eroding face is up to 5 metres high and displays a wide variety of prehistoric monuments in section including cists (NB 4254 5887 and NB45NW 02.01&02), a possible wheelhouse (NB 4374 5943), other structures including a possible polyventral structure similar to those seen at Bostadh (NB 4365 5942) and several middens (NB 4374 5943 and NB 4365 5942). Also in the vicinity of Galson are a series of cairns (NB 4254 5886, 8 in all) several of which may be burials.

As with other stretches of the north-west coast of Lewis the NMRS has recently recorded field systems and townships from the Ordnance Survey, First Edition maps (as part of FESP). These sites include the townships of Melbost Borge and North Galson (NB 45NW 46 and NB45NW 58), two “farmsteads” (NB 45NW 52 and NB45NW 31) and two field systems (NB45NW 55 and NB45NW 59).

This map sheet includes one Scheduled Ancient Monument (number 1669) that of Dun Borge (NB45NW 04). Peat growth in the area of this site is deep (in the land between Melbost Borge and South Galson) and while Dun Borge is situated well behind the eroding edge (which is 200 metres to the north) fragments of any associated landscape would only be seen the shore. Fragments of fieldwalls may be seen in this area (NB 4177 5827).

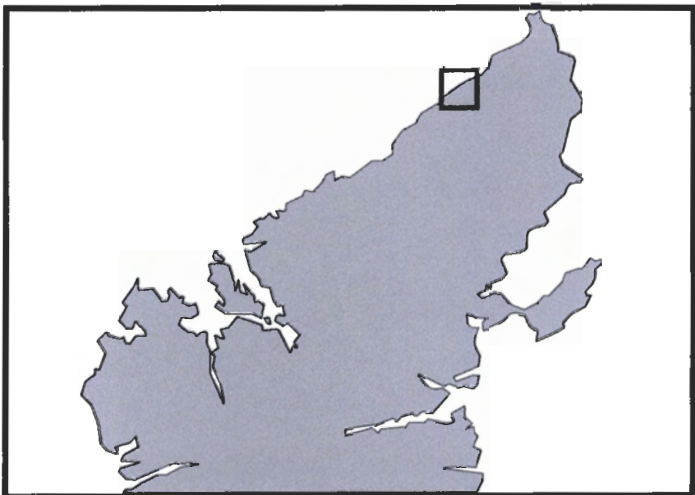
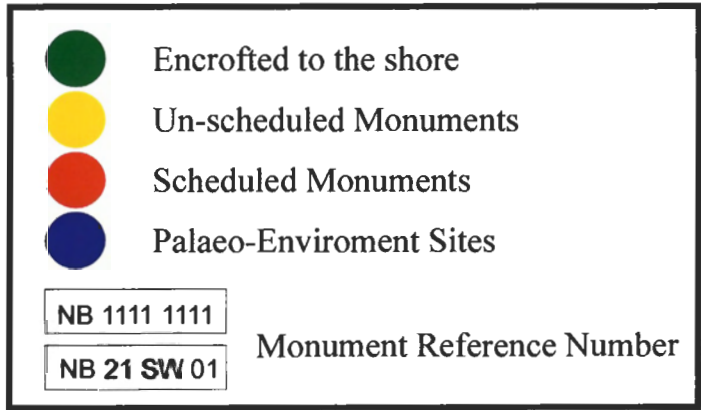
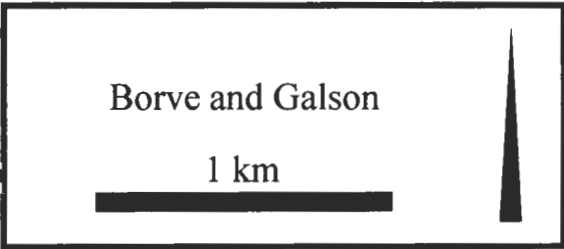
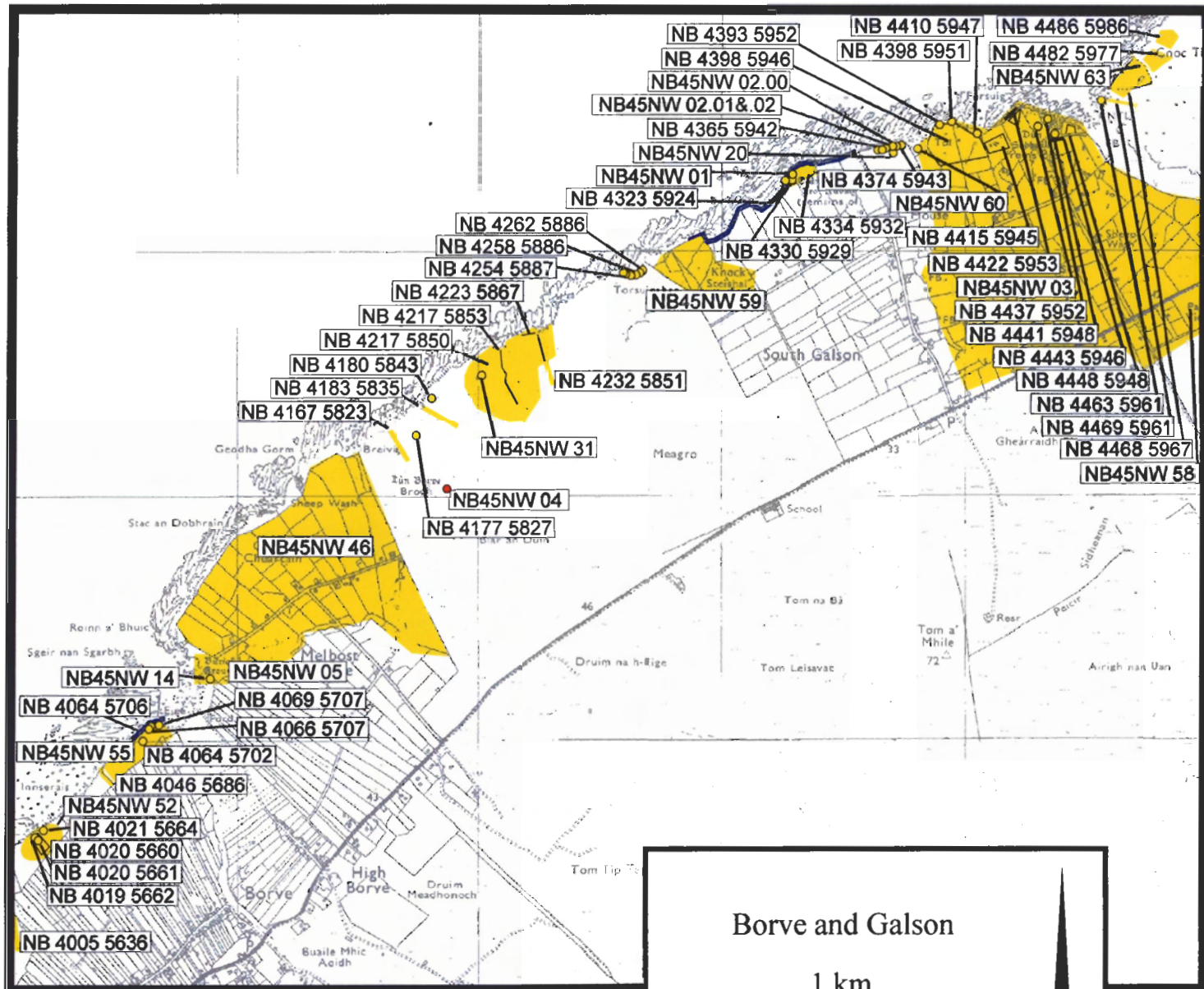
Other sites of interest on this map sheet include the site of the Teampull Bluigid, the site of the Teampull nan Cro’ (NB45NW 05 and NB45NW 01) and the site of the Dun Sobhuill, a CARH (NB45NW 03).

### 5.27.3 *Gazetteer of cultural heritage*

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB 4005 5636	Borge	Dyke, Drystone		B	B	Post Medieval	Nil
NB 4019 5662	Borge	Enclosure, Habitational, Rectilinear, Drystone		C	C	Unknown	Nil
NB 4020 5661	Borge	Enclosure, Habitational, Rectilinear, Drystone		C	C	Unknown	Nil
NB45NW 52	Borge	Township		C	C	Post Medieval	Nil
NB 4020 5660	Borge	Settlement		C	C	Unknown	Nil
NB 4021 5664	Borge	Enclosure, Rectilinear, Drystone		B	B	Unknown	Nil
NB45NW 55	Borge	Farmstead		B	B	Post Medieval	Monitor
NB 4046 5686	Borge	Dyke, Drystone		C	C	Crofting	Nil
NB 4064 5702	Borge	Settlement Mound		C	C	Unknown	Monitor
NB 4066 5707	Borge	Enclosure, Rectilinear, Turf and stone		A	A	Pre Clearance	Monitor
NB 4066 5707a	Borge	Enclosure, Curvilinear, Drystone		A	A	Modern	Nil
NB 4069 5707b	Borge	Enclosure, Habitational, Curvilinear, Stone and earth	Bone, Animal	A	A	Post Medieval	Monitor
NB 4069 5707c	Borge	Enclosure, Habitational, Curvilinear, Stone and earth		A	A	Post Medieval	Monitor

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MAP SHEET NB 40 56/NB 45 60**

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# COASTAL EROSION ASSESSMENT (LEWIS)

NB45NW 14	Melbost Borge	position of corn mill (lost)		B	B	Post Medieval	Find site location
NB45NW 05	Melbost Borge	Teampull Bluigid		B	B	Unknown	Monitor
NB45NW 46	Melbost Borge	Settlement, modern township		B	B	Modern	Nil
NB 4167 5823	Melbost Borge	Dyke, Stone and Turf		C	C	Prehistoric	Monitor
NB 4177 5827	Melbost Borge	Possible hut platform		C	C	Unknown	Nil
B45NW 04	Borge	Dun Borge, CARH		C	C	Prehistoric	Nil
NB 4183 5835	Melbost Borge	Dyke, Stone and Turf		A	A	Prehistoric	Monitor
NB 4180 5843	Melbost Borge	Cell		C	C	Unknown	Nil
NB45NW 31	Sgeir an Uaibhreich	Enclosure, Habitational, Curvilinear, Stone and earth (2x)		C	C	Unknown	Nil
NB 4217 5850	Sgeir an Uaibhreich	Cultivation, Rigging		B	B	Unknown	Monitor
NB 4217 5853	Sgeir an Uaibhreich	Dyke, Stone and Turf		C	C	Unknown	Nil
NB 4223 5867	Sgeir an Uaibhreich	Dyke, Stone and Turf		A	A	Unknown	Monitor
NB 4232 5851	Sgeir an Uaibhreich	Ditch and turf dyke		C	C	Unknown	Nil
NB 4254 5887a	Galson	Burial Cist		C	C	Unknown	Nil
NB 4254 5887b	Galson	possible clearance cairn		C	C	Unknown	Nil
NB 4254 5887c	Galson	possible clearance cairn		A	A	Unknown	Monitor
NB 4258 5886	Galson	possible clearance cairn		C	C	Unknown	Nil
NB 4262 5886a	Galson	possible clearance cairn		C	C	Unknown	Nil
NB 4262 5886b	Galson	Burial Cairn		C	C	Unknown	Nil
NB 4262 5886c	Galson	Cairn		A	A	Unknown	Monitor
NB 4262 5886d	Galson	Cairn		C	C	Unknown	Monitor
NB45NW 59	Galson	Field System		A	A	Pre Clearance	Monitor
NB 4330 5929	Galson	Cemetery building		E	C	Post Medieval	Monitor
NB 4334 5932	Galson	Galson Cemetery		C	C	Post Medieval	Monitor
NB 4330 5929	Galson	Cemetery building		E	C	Modern	Monitor
NB 4365 5942a	Galson		Midden, Shell	A	A	Unknown	Monitor, sample
NB45NW 01	Teampull nan Cro' Naomh	Chapel, Teampull nan Cro'		E	C	Post Medieval	Monitor
NB45NW02.00	Galson	Settlement	Ceramic/pottery	A	A	Prehistoric	Monitor, survey, excavate
NB 4365 5942b	Galson	Structure in section		A	A	Prehistoric	Monitor, survey, excavate
NB 4365 5942c	Galson	Structure in section	Midden, Kitchen	A	A	Prehistoric	Monitor, survey, excavate
NB45NW02.01 & 02	Galson	Burial Cists	Ceramic/pottery	A	A	Iron age	Monitor
NB45NW 20	Galson		Find spot, bronze pin	A	A	Prehistoric	Monitor
NB45NW 60	Galson	Horizontal Mill		B	C	Post medieval	Survey

## COASTAL EROSION ASSESSMENT (LEWIS)

NB 4374 5943a	Galson	Possible wheelhouse	Midden, Kitchen	A	A	Prehistoric	Monitor, survey, excavate
NB 4374 5943b	Galson		Midden, Kitchen	A	A	Prehistoric	Monitor, survey, excavate
NB 4393 5952	Galson	Dyke, Stone and Turf		A	A	Unknown	Monitor
NB 4398 5951	Galson	Cell, 3x turf		A	A	Unknown	Monitor
NB 4398 5946	Galson	Dyke, Drystone		A	A	Post Medieval	Nil
NB 4410 5947	Galson	Dyke, Drystone		B	C	Unknown	Monitor
NB 4415 5945	Galson	Settlement and field system		C	C	Pre Clearance	Nil
NB 4422 5953a	Galson	Dyke, Drystone		B	B	Unknown	Monitor
NB 4422 5953b	Galson	Settlement		C	C	Pre Clearance	Nil
NB45NW 03	Dun Sobhuill	CARH, remains of Dun Sobhuill		C	C	Prehistoric	Nil
NB 4437 5952	Galson	Enclosure, Habitational, Rectilinear, Turf and stone		A	A	Unknown	Monitor
NB 4443 5946	Galson	Dyke, Drystone		C	C	Unknown	Nil
NB 4441 5948	Galson	Wall in section		A	A	Unknown	Monitor
NB 4448 5948	Galson	Blackhouse		C	C	Pre Clearance	Nil
NB 4463 5961a	Galson	Dyke, Stone and Turf		A	A	Unknown	Monitor
NB 4463 5961b	Galson	Enclosure, Curvilinear, Turf and stone		B	C	Unknown	Monitor
NB 4469 5961	Galson	Dyke, Stone and Turf		B	B	Unknown	Monitor
NB 4468 5967	Galson	Settlement		B	C	Unknown	Monitor
NB45NW 63	Galson	Dyke, Drystone		B	A	Unknown	Monitor
NB 4482 5977	Galson	Cultivation, Rigging		A	A	Pre Clearance	Monitor
NB 4486 5986	Galson	Settlement		B	B	Unknown	Monitor

### 5.27.4 Gazetteer of palaeo-environment sites

Label	Locale	Site Type	Matrix State	Site State	Recommendations
NB 4064 5706	Borve	possible palaeosol beneath fluvioglacial sands.	A	A	Monitor
NB 4323 5924	Galson	Raised beach, marine deposits and glacially derived deposits.	A	A	Monitor

### 5.27.5 Overview of erosion

The erosion regime of this section is almost exclusively dominated by the erosion of the low 'soft' unconsolidated cliffs of the deposits described in section 5.26.1. There are two concentrations of archaeological sites, at Melbost Borve and Galson which are undergoing active erosion. Indeed the

multiple palaeosols within the eroding face at South Galson contain a wealth of prehistoric archaeological sites which are being actively destroyed. Hence, the entire of this section, with the two severe erosion focuses at Melbost Borve and South Galson, needs regular monitoring, survey and possible selective excavation.

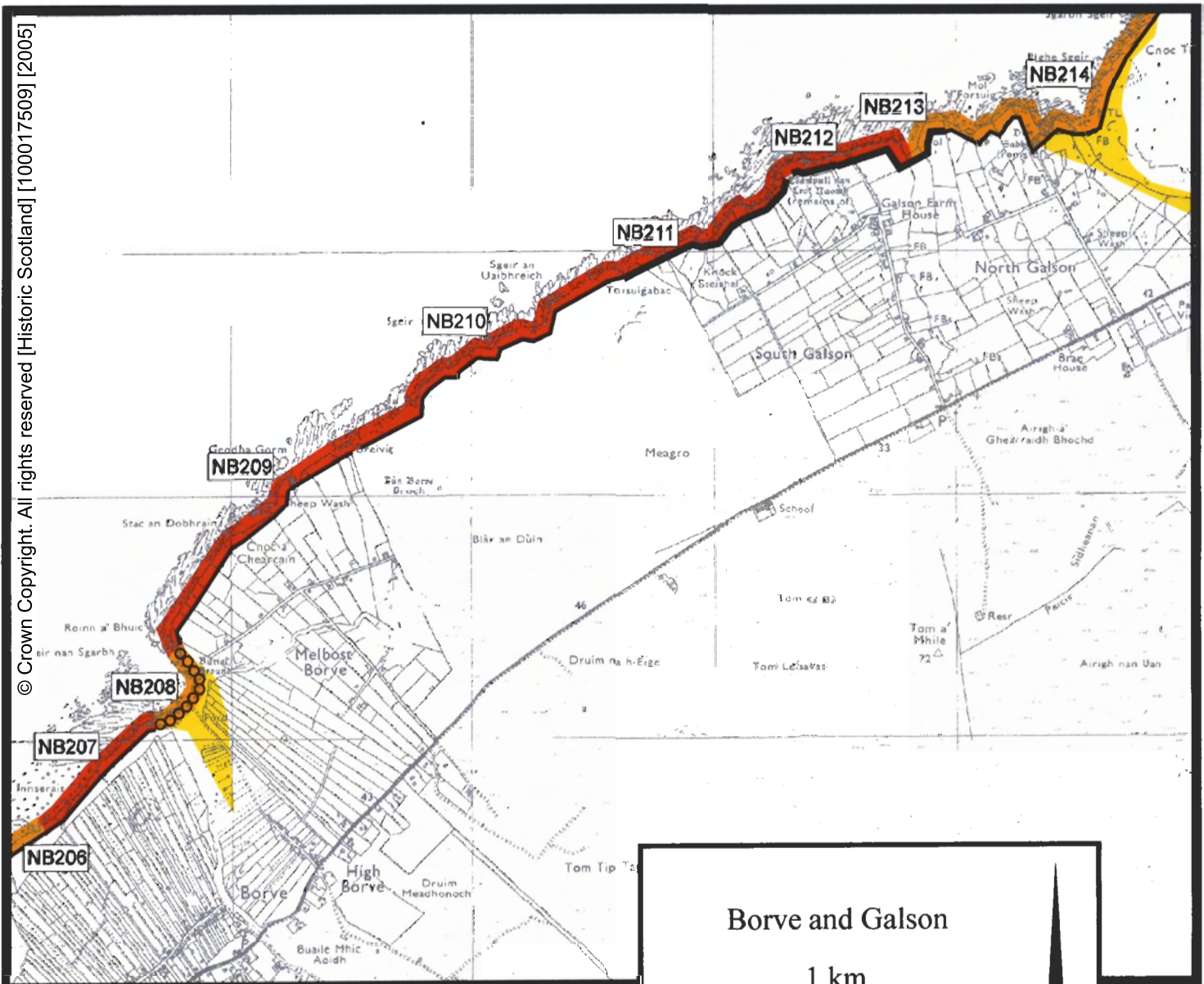
**5.27.6 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 206	NB 398 564	B-Eroding/ Stable	Borve	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	849.724	Low edge < 5m.
NB 207	NB 404 568	A-Eroding	Borve	Mainly Rock Platform	Glacial sand and Gravel / Marine deposits	Gneiss	684.290	Low edge < 5m.
NB 208	NB 408 571	B-Eroding/ Stable	Borve	Mainly Rock Platform	Glacial sand and Gravel / Marine deposits	Gneiss	350.000	Shingle / storm bank
NB 209	NB 418 582	A-Eroding	Borve	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	900.000	Low edge < 5m
NB 210	NB 423 587	A-Eroding	Melbost Borve to Galson	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	479.153	Low edge < 5m.
NB 211	NB 428 590	A-Eroding	Galson	Mainly Rock Platform	Marine deposits	Gneiss	797.495	Cliff over 5m.
NB 212	NB 433 593	A-Eroding	Galson	Mainly Sand	Wind Blown Sand	Gneiss	578.935	Cliff over 5m.
NB 213	NB 439 595	B-Eroding/ Stable	Galson	Mainly Rock Platform	Glacial sand and Gravel	Gneiss	232.713	Cliff over 5m.
NB 214	NB 445 596	B-Eroding/ Stable	Galson	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	1081.775	Low edge < 5m.



**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 40 56/NB 45 60**

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Borge and Galson

1 km

NA001

Cell number



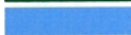
Eroding



Eroding - Stable



Stable



Stable - Depositing



Depositing



Depositing and Eroding



Low edges less than 5 metres high



Cliff over 5 metres high



Man made barrier



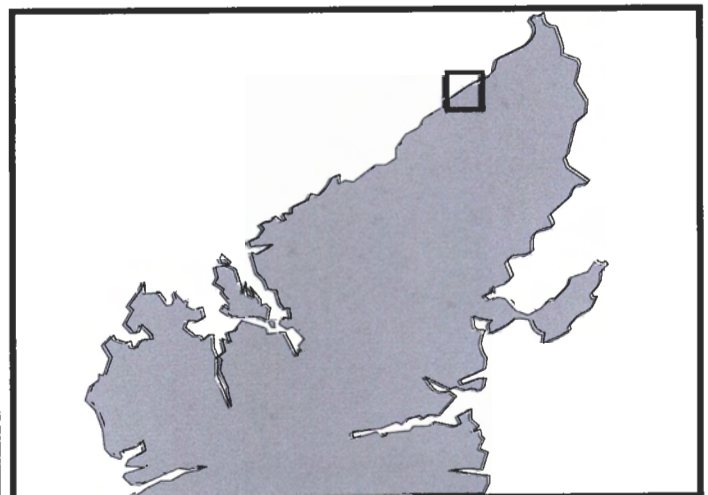
Single bank/storm beach



Human disturbance



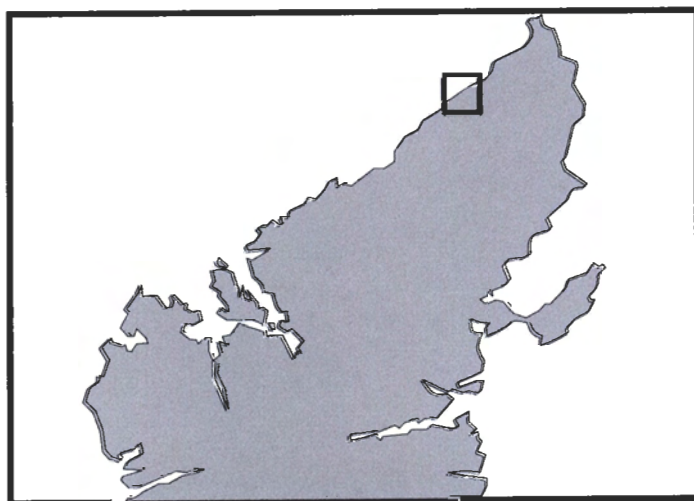
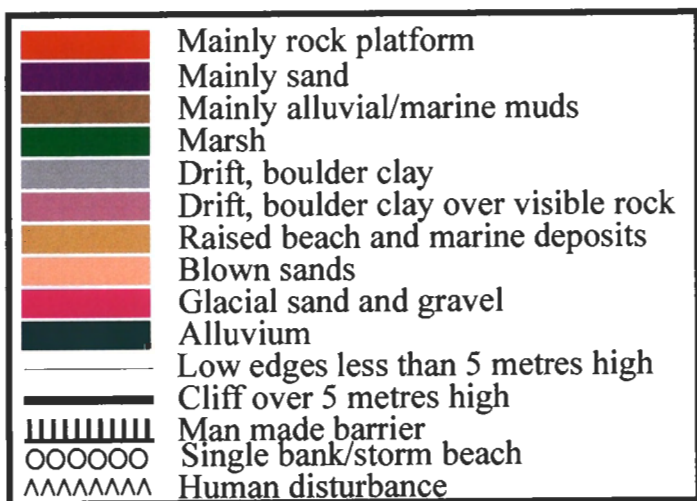
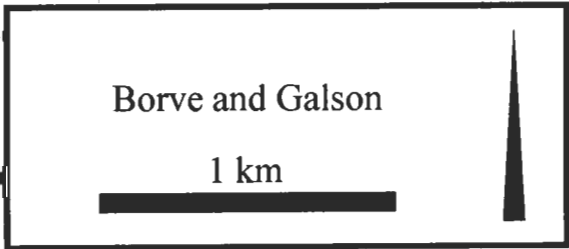
Land below 10 metres



**5.27.7 Coastal geomorphology**

The geomorphology of this section is dominated by the low till cliffs, which are comprised of till and glacial sands and gravels and in some sections raised beach deposits. These are best seen at South Galson (palaeo-environment site NB 422 587) with a number of other locations also containing discontinuous fragments (see figure 3).

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In the immediate vicinity of Dun Mara are recorded a cellular complex and some cairns (NB 4944 6309 and NB 4951 6310), both of these sites are believed to be prehistoric. The NMRS records one township and two field systems (NB46SE 21, NB46SE48 and NB46SE 49). Other field systems have also been recorded during this survey and are provisionally believed to be post medieval, these include NB 4557 6020, NB 4589 6043 and NB 4694 6145.

### 5.28.3 Gazetteer of cultural heritage

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB 4496 6009	Sgarbh Sgeir	Field System		C	C	Pre Clearance	Nil
NB 4524 6028	Toa Galson	Promontory Enclosure		B	B	Unknown	Monitor, survey (?)
NB 4554 6020	Geodh' a' Gharaidh	Dyke, Stone and Turf		C	C	Pre Clearance	Nil
NB 4557 6036	Geodh' a' Gharaidh	Field System		B	C	Pre Clearance	Monitor (?)
NB 4589 6043	Geodh' a' Gharaidh	Field System		B	C	Pre Clearance	Monitor (?)
NB 4630 6067	Geodh' a' Gharaidh	Field System		A	B	Pre Clearance	Monitor (?)
NB46SE 25	Geodh' a' Gharaidh	Possible Sheiling		A	B	Pre Clearance	Nil
NB 4677 6140	Toa Dibadale	Promontory Enclosure		A	A	Unknown	Monitor, survey (?)
NB 4689 6148a	Toa Dibadale	Enclosure, Rectilinear, Turf and stone		C	C	Unknown	Nil
NB 4689 6148b	Toa Dibadale	Cell		C	C	Unknown	Nil
NB 4685 6149	Toa Dibadale	Promontory Enclosure		B	B	Prehistoric	Monitor, survey (?)
NB 4694 6145	Toa Dibadale	Field System		C	C	Pre Clearance	Nil
NB 4702 6152	Toa Dibadale	Promontory Enclosure		A	A	Unknown	Monitor, survey (?)
NB46SE 18	Toa Dibadale	Mill, Horizontal		C	C	Pre Clearance	Nil
NB 4709 6174	Toa Dibadale	Field System		A	B	Pre Clearance	Monitor (?)
NB 4722 6188	Toa Dibadale	Cairn		C	C	Unknown	Nil
NB46SE 19	Dunasbroc	Wall enclosing a stack		A	A	Unknown	Monitor
NB46SE 21	Baile na Crois	Township		C	C	Crofting	Monitor
NB 4736 6186	Toa Dibadale	Dyke, Drystone		C	C	Post Medieval	Nil
NB 4802 6247	Sgeir Coillt	Dyke, Stone and Turf		B	B	Unknown	Monitor (?)
NB46SE 23	Sgeir Coillt	Field System		B	B	Pre Clearance	Monitor (?)
NB46SE 47	Airmistean	Enclosure		B	B	Unknown	Monitor, survey
NB46SE 50	Airmistean	Dyke, Drystone		C	C	Crofting	Nil



**5.28     *MAP SHEET NB 44 60/NB 50 64, SOUTH DELL, NORTH DELL AND CROSS***

**5.28.1     *Overview of cultural heritage***

**5.28.1.1     *Number of monuments***

Scheduled	- 1	[5352]
Recorded in the NMRS	- 12	[NB46SE 25, NB46SE 18, NB46SE 19, NB46SE 21, NB46SE 23, NB46SE 47, NB46SE 50, NB46SE 06, NB46SE 13, NB46SE 48, NB46SE 05, NB46SE 49]
Others	- 27	
<b>Total</b>	<b>- 39</b>	

**5.28.1.2     *Number of site state occurrences***

Eroding (A)	- 10
Eroding/stable (B)	- 11
Stable (C)	- 17

**5.28.1.3     *Number of response occurrences***

Nil	- 12
Monitor, (Baseline survey)	- 26
Detailed survey	- 8
Sample	- 0

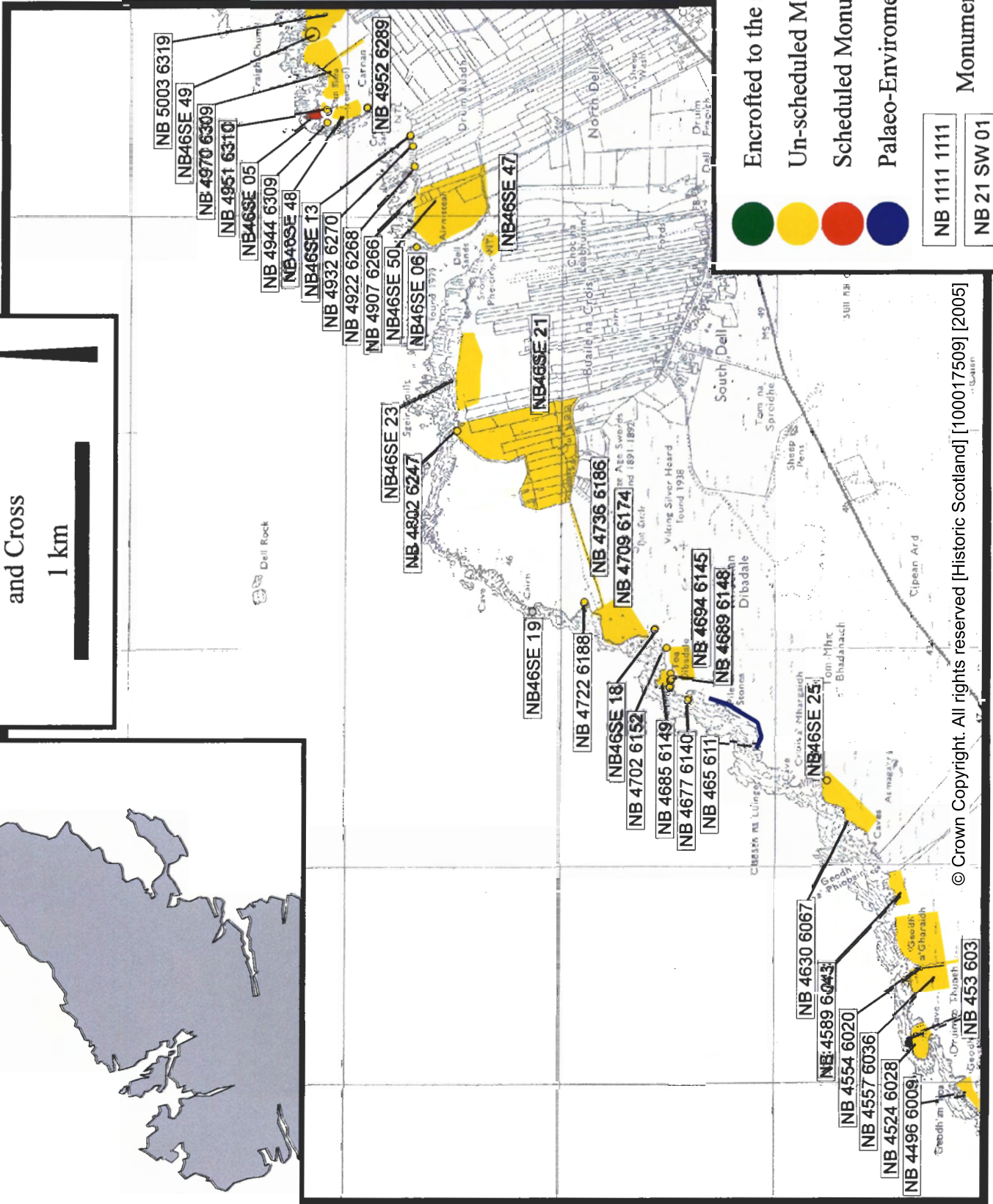
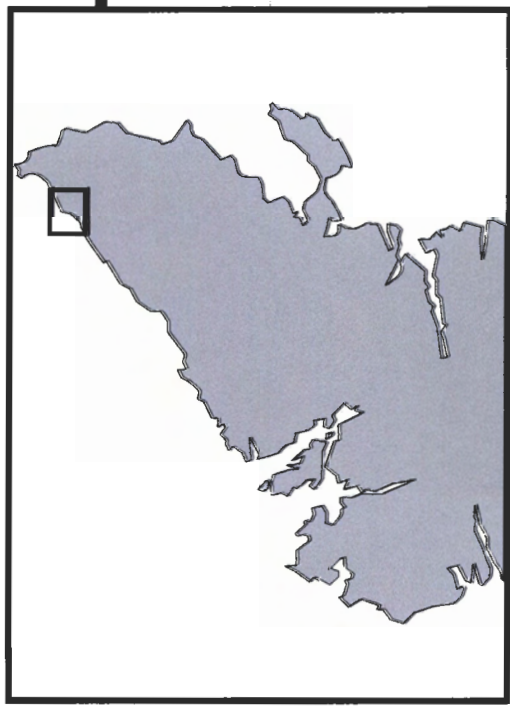
**5.28.2     *Description of cultural heritage***

This map sheet covers the townships of South Dell, North Dell and Cross. The southern half of the maps is dominated by sea cliffs higher than 5.0 metres backed by rough grazing moorland. The northern half of the map is characterised by low eroding edges less than 5.0 metres and backed by the townships listed above.

Six promontory enclosures (NB 4524 6028, NB 4677 6140, NB 4685 6149, NB46SE 19, NB 4932 6270 and NB46SE 05) dominate this area. Of these all are of an area of 1 hectare or less, with the exception of NB 4524 6028, a site known Druim a Thuath, which has an enclosed area of between 2 and 3 hectares. Of the remaining promontory sites two are of note and have been recorded previously in the NMRS, the first (NB46SE 19) is actually a stack with an enclosing wall, and the second (NB46SE 05) is the site known as Dun Mara. This site is a Scheduled Ancient Monument (number 5352) and behind its extensive enclosing bank and ditch is an extremely large oval shaped structure with obvious secondary activity. In recent years it appears that this site has begun to suffer heavy erosion due to wave action, this is particularly noticeable when the site is compared to photographs taken during the 1979 coastal erosion survey (Cowie 1997).

**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 44 60/NB 50 64**

South Dell, North Dell  
and Cross  
1 km



- Encrofted to the shore
- Un-scheduled Monuments
- Scheduled Monuments
- Palaeo-Environment Sites

Monument Reference Number

NB 1111 1111

NB 21 SW 01



# COASTAL EROSION ASSESSMENT (LEWIS)

NB46SE 06	Dun Airnisteann	Site of castle	Ceramic/pottery, Iron Age	B	C	Prehistoric	Monitor
NB 4907 6266	Airnisteann	Cultivation, Rigging		B	B	Post Medieval	Nil
NB 4922 6268	Airnisteann	Cairn		B	C	Unknown	Nil
NB 4932 6270	Cross sands	Promontory Enclosure		B	B	Unknown	Monitor, survey (?)
NB46SE 13	Cross sands		Ceramic/pottery	B	B	Prehistoric	Monitor area
NB 4952 6289	Cross	Stone Alignment		A	A	Unknown	Monitor (?)
NB46SE 48	Cross	Cultivation, Rigging		A	A	Pre Clearance	Monitor (?)
NB 4944 6309	Cross	Cellular Complex		A	C	Prehistoric	Monitor
NB 4951 6310a	Dun Mara	Cairns		C	C	Prehistoric	Monitor
NB 4951 6310b	Dun Mara	Cultivation, Rigging		A	A	Pre Clearance	Monitor (?)
NB46SE 05	Dun Mara	Promontory Enclosure		A	A	Prehistoric	Monitor, survey (?)
NB 4970 6309a	Cross	Dyke, Turf		A	A	Unknown	Monitor (?)
NB 4970 6309b	Cross	Dyke, Turf		A	A	Unknown	Monitor (?)
NB 4970 6309c	Cross	Cultivation, Rigging		A	A	Pre Clearance	Monitor (?)
NB46SE 49	Swainebost	Enclosure, Curvilinear, Turf and stone and cell in one corner		A	C	Unknown	Monitor, survey
NB 5003 6319	Swainebost	Cultivation, Rigging		A	A	Pre Clearance	Monitor (?)

## 5.28.4 Gazetteer of palaeo-environment sites

Label	Locale	Site Type	Matrix State	Site State	Recommendations
NB 453 603	Toa Galson	Raised beach deposits, glacially derived deposits	A	A	Monitor
NB 465 611	South Dell	Raised Beach	A	A	Monitor

#### 5.28.5 Overview of Erosion cell

This section can be split into two general zones of erosion; the generally eroding low rock platform and till cliffs from Toa Galson to Dell sands (NB 215 to NB 217) and the small coves and machair from Dell Sands to Traigh Chumil (NB 218 to NB 221).

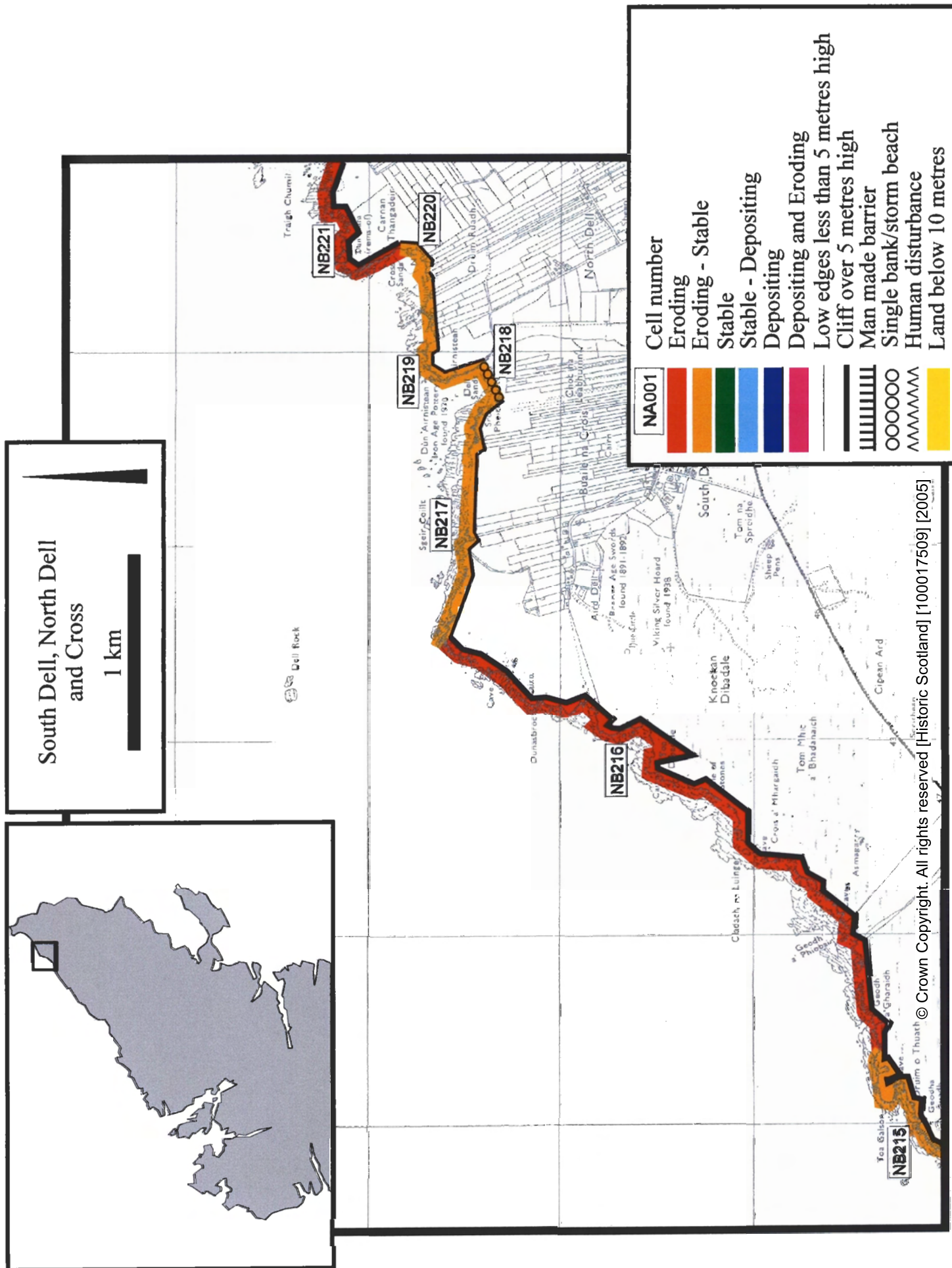
The first zone represents the continuation of the eroding till cliffs from map sheet NB 40 56/ NB 45 60. Within the section are a number of sites experiencing active erosion including the palaeo-environmental sites of Toa Galson (palaeo-environment site NB 453 603) and an extended fragment of raised beach deposits (palaeo-environment site NB 465 611) and the prehistoric promontory enclosure of NB 4524 6028; because of this, periodic monitoring of this zone is recommended.

The second zone consists of small sandy coves, such as Dell Sands and Cross Sands, separated by further till cliffs generally covered in wind blown sand. Dell Sands consists of a sandy lower and upper beach with a shingle ridge backed by an expansive machair land from here to Eoropie. There are few signs of widespread erosion, though there are a few areas of limited wind deflation of the machair. Cross Sands is similar in form to Dell Sands, with sandy lower and upper beach with a shingle ridge backed by the machair plain. Again, there are few signs of erosion, though some of the machair edge has experienced undercutting in the past. Very few sites were noted at these beaches, but due to the dynamic nature of the machair system which controls archaeological visibility and the position of the beaches within the wider framework of a generally eroding zone, it seems appropriate to recommend further regular monitoring. The till cliffs separating the beaches are experiencing erosion, especially the stretch north of Cross Sands (NB 221), with cliff slips and discontinuous stretches of eroding sands and gravels. These cliffs have acted as focuses for past settlement, with the margins of the substantial prehistoric monuments of Dun Airnistean (NB46SE 06) and Dun Mara (NB46SE 05) under threat from cliff erosion. Hence, this zone needs further regular monitoring

**5.28.6 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 215	NB 451 602	B-Eroding/ Stable	Toa Galson	Mainly Rock Platform	Glacial sand and Gravel	Gneiss	1056.333	Cliff over 5m.
NB 216	NB 466 612	A-Eroding	Dell	Mainly Rock Platform	Glacial sand and Gravel / Marine deposits	Gneiss	4187.254	Cliff over 5m.
NB 217	NB 481 624	B-Eroding/ Stable	Sgeir Coillt	Mainly Rock Platform	Glacial sand and Gravel	Gneiss	1279.517	Low edge < 5m.
NB 218	NB 489 623	B-Eroding/ Stable	Dell Sands	Mainly Sand	Wind Blown Sand	Meta-sediment	539.230	Shingle / storm bank
NB 219	NB 490 626	B-Eroding/ Stable	Airmistean	Mainly Rock Platform	Wind Blown Sand	Meta-sediment	859.725	Low edge < 5m.
NB 220	NB 494 627	B-Eroding/ Stable	Cross Sands	Mainly Sand	Wind Blown Sand	Meta-sediment	400.655	Low edge < 5 m.
NB 221	NB 495 631	A-Eroding	Carnan Thangadeir	Mainly Rock Platform	Glacial sand and Gravel	Meta-sediment	946.181	Cliff over 5 m.

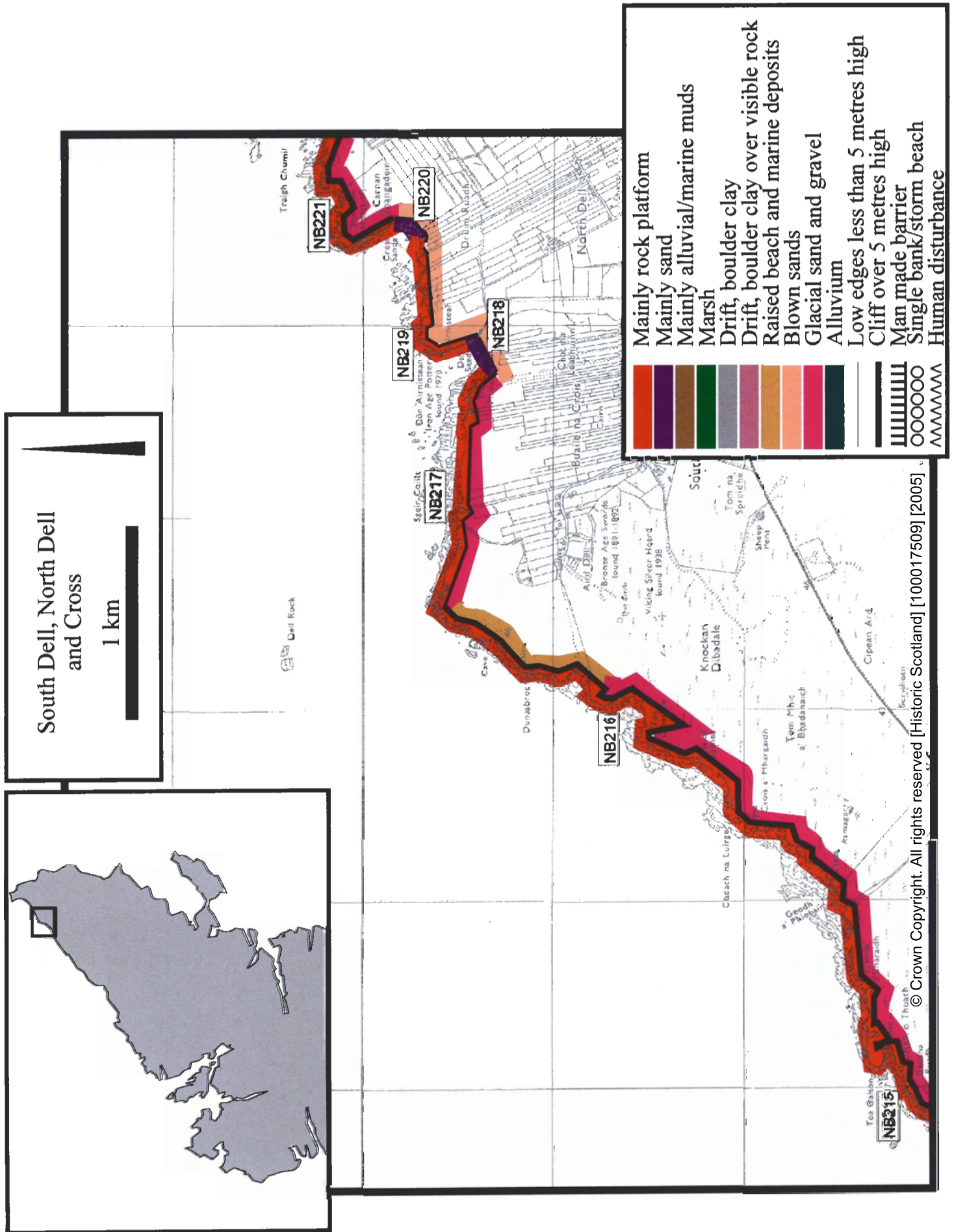
**COASTAL EROSION ASSESSMENT(LEWIS)**  
**MAP SHEET NB 44 60/NB 50 64**



5.28.7 *Overview of coastal geomorphology*

The geomorphology of this section is once again dominated by the low till cliffs of till, glacial sands and gravels and marine deposits. Located within this section are the palaeo-environmental sites of Toa Galson (palaeo-environment site NB 453 603) and the extended fragment of raised beach at Cladach na Luinge (palaeo-environment site NB 465 611) (see section 5.26.1) as well as the two pocket beaches of Dell Sands and Cross Sands. Up until Dell Sands the underlying rock consists of Lewisian Gneiss before changing to Metasediments of the Lewisian complex.

**COASTAL EROSION ASSESSMENT(LEWIS)**  
**MAP SHEET NB 44 60/NB 50 64**





**5.29 MAP SHEET NB 50 63/NB 55 67, THE BUTT OF LEWIS**

**5.29.1 Overview of cultural heritage**

**5.29.1.1 Number of monuments**

Scheduled	- 2	[5878 and 5356]
Recorded in the NMRS	- 18	[NB56SW 14, NB56SW 03, NB56NW 19, NB56NW 04, NB56NW 06, NB56NW 08, NB56NW 11, NB56NW 10, NB56NW 16, NB56NW 12, NB56NW 15, NB56NW 13, NB56NW 14, NB56NW 01, NB56SW 21, NB56SW 28, NB56SW 16, NB56SW 29]
Others	- 46	
<b>Total</b>	<b>- 64</b>	

**5.29.1.2 Number of site state occurrences**

Eroding (A)	- 29
Eroding/stable (B)	- 21
Stable (C)	- 14

**5.29.1.3 Number of response occurrences**

Nil	- 30
Monitor, (Baseline survey)	- 37
Detailed survey	- 9
Sample	- 1
Excavate	- 2

**5.29.2 Description of cultural heritage**

This map sheet covers the townships at the Butt of Lewis, Eoropie and Port of Ness. On the west coast of this stretch are a series of sandy beaches backed by machair systems. To the north of Eoropie around the Butt of Lewis and on the east coast these beaches are replaced by high sea cliffs of more than 5.0 metres high, backed by a mixture of good grazing and rough pasture.

In the machair systems of Swainbost and Eoropie on the west coast of the Butt are a series of eroding sites which are considered of interest. These include NB56SW 14 where structures are eroding out of the dunes due to aeolian erosion. These structures are ill defined but large quantities of artefacts have been recovered and observed, including more than 80 furnace bases of varying sizes and hand made ceramics with a square rim section. As yet no date has been agreed upon for this site but it is possible that it may date to a time between the late prehistoric and the post-medieval period. Elsewhere in the machair other sites include middens (NB 5017 6348), cells (NB 5067 6394 and NB 5106 6523) and a promontory enclosure (NB 5082 6415).

This small stretch of the west coast of Lewis is also notable for a particularly high number of ecclesiastical sites, including Teampull Thomais (NB56SE 03) situated within a promontory enclosure and the Teampulls Pheadair, Mholuidh and Ronaidh (all of which fall out with the boundaries of this survey being situated slightly inland of the shore). At Cunadal, immediately west of Eoropie is a promontory enclosure (NB 5123 6564) the enclosing wall of which consists of turf built cells. Within this enclosure are more cells and a single turf and stone rectilinear structure. This feature is backed by an extensive multi-period field system (NB 5130 6563) and is also believed to be ecclesiastical (or monastic) in nature.

Around the Butt of Lewis and on the east coast there is also a series of sites that are believed to be prehistoric in origin. These include three promontory enclosures (NB56NW 04 (Scheduled Ancient Monument number 5878), NB 5152 6629 and NB56NW 01 (Scheduled Ancient Monument number 5356)) and cairns (NB 5310 6563, NB 5072 6580, NB 5158 6625 and NB 5188 6641) of which only the last is believed firmly to be prehistoric as it appears to be chambered. Two cellular complexes (NB 5212 6641 and NB 5336 6501) have also been recorded.

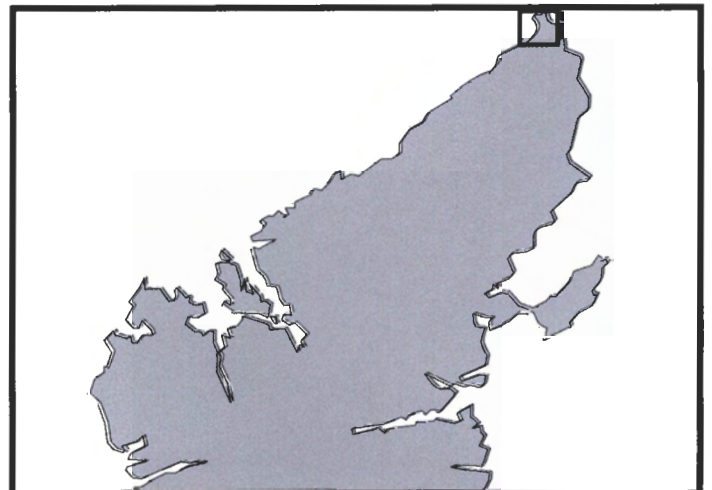
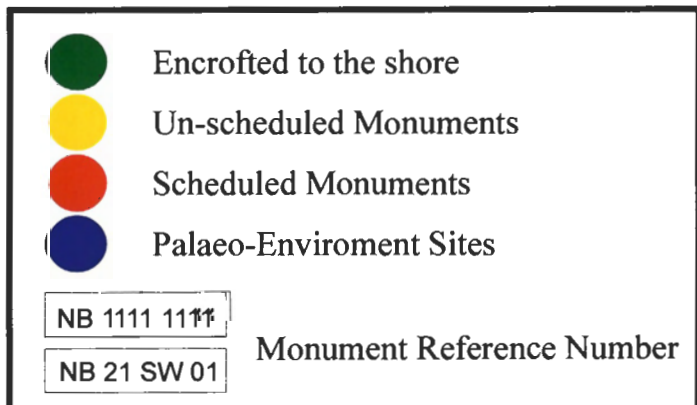
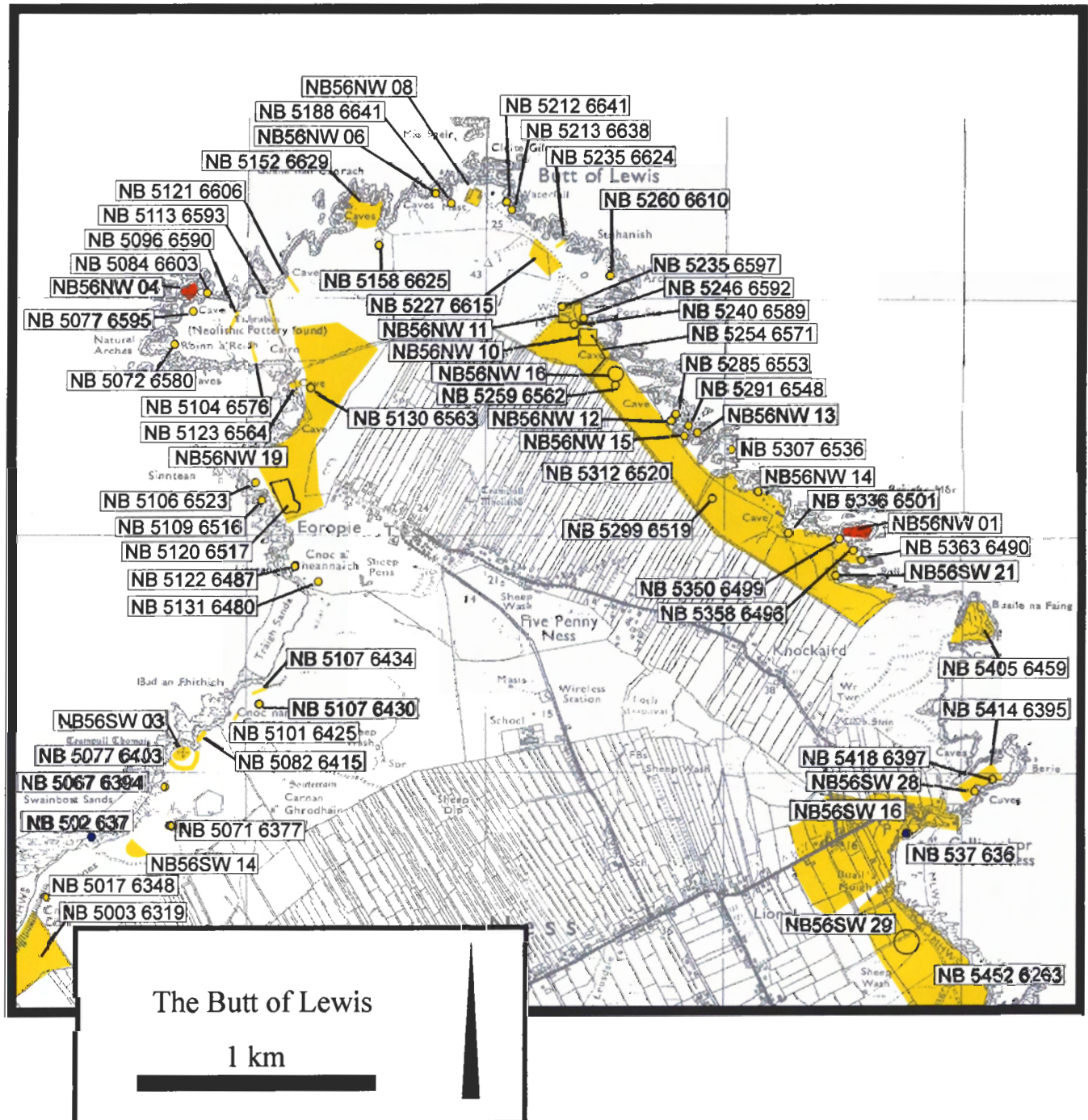
Many of the remaining sites on this map sheet have their origins in the post medieval, pre-crofting and crofting phases of settlement, these include the township of Port of Ness (NB56SW 16) and farm steadings at Eoropie and Port of Ness (NB56NW 14 and NB56SW 28).

# COASTAL EROSION ASSESSMENT (LEWIS)

## 5.29.3 Gazetteer of cultural heritage

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB 5003 6319	Swainbost	Cultivation, Rigging		A	A	Pre Clearance	Monitor (?)
NB56SW 14	Swainbost	Stone alignment	Metal furnace bases, slag, pot and shell	A	B	Medieval	Monitor, survey, excavate
NB 5017 6348	Swainbost		Midden, Shell	A	A	Unknown	Monitor, sample (?)
NB 5071 6377	Swainbost	Standing Stone		C	C	Unknown	Nil
NB 5067 6394	Swainbost	Cell		A	A	Unknown	Monitor
NB56SW 03	Teampull Thomais	Enclosure, Rectilinear, Turf and stone Teampull Thomais		A	B	Medieval	Monitor
NB 5077 6403	Swainebost	Dyke, Turf and ditch		A	A	Prehistoric	Monitor
NB 5082 6415	Swainebost	Promontory Enclosure		A	A	Prehistoric	Monitor, survey (?)
NB 5101 6425	Traigh Sanda	Stone Alignment		A	C	Unknown	Monitor
NB 5107 6430	Traigh Sanda	Cairns and cist		A	A	Prehistoric	Monitor
NB 5131 6480	Traigh Sanda	Cairn		C	C	Unknown	Nil
NB 5107 6434	Traigh Sanda	Dyke, Turf, promontory enclosure		A	A	Prehistoric	Monitor, survey (?)
NB 5122 6487	Traigh Sanda	Enclosure, Rectilinear, Turf and stone		A	C	Medieval	Monitor
NB 5120 6517	Eoropie	Enclosure, Rectilinear, Turf and stone		A	C	Unknown	Monitor (?)
NB 5109 6516	Eoropie	Promontory Enclosure with cellular structures		A	A	Prehistoric	Monitor, survey, excavate (?)
NB 5106 6523	Eoropie	Cellular Complex		A	A	Prehistoric	Monitor
NB 5123 6564	Eoropie	Promontory Enclosure and multi-cellular structures		A	A	Prehistoric	Monitor, survey (?)
NB 5130 6563	Eoropie	Cairn		C	C	Unknown	Nil
NB56NW 19	Eoropie	Cultivation, Rigging		A	A	Pre Clearance	Monitor (?)
NB 5104 6576	Eoropie	Dyke, Turf		B	B	Unknown	Nil
NB 5072 6580	Eoropie	Cairns, 3x		A	C	Modern	Nil
NB 5084 6603	Eoropie	Enclosure, Rectilinear, Turf and stone		A	A	Prehistoric	Monitor
NB 5077 6595	Eoropie	Cairn		C	C	Unknown	Nil
NB56NW 04	Luchruban	Wall		A	A	Prehistoric	Monitor
NB 5096 6590	Eoropie	Dyke, Turf		B	B	Unknown	Monitor (?)
NB 5113 6593	Eoropie	Dyke, Stone and Turf		A	A	Unknown	Monitor (?)
NB 5121 6606	Eoropie	Stone Alignment		A	B	Post Medieval	Nil
NB 5152 6629	Eoropie	Promontory Enclosure		A	A	Prehistoric	Monitor, survey (?)
NB 5158 6625	Eoropie	Cairn		A	A	Prehistoric	Monitor
NB56NW 06	Eoropie	Sheiling		A	B	Unknown	Monitor
NB 5188 6641	Eoropie	Cairn, possibly chambered		C	C	Prehistoric	Nil
NB56NW 08	Butt of Lewis	Lighthouse		C	C	Modern	Nil

**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 50 63/NB 55 67**



# COASTAL EROSION ASSESSMENT (LEWIS)

NB 5212 6641	Butt of Lewis	Cellular structures		A	B	Unknown	Monitor
NB 5213 6638	Butt of Lewis	Cairn		A	B	Modern	Nil
NB 5235 6624	Butt of Lewis	Ditch and road		A	B	Modern	Nil
NB 5227 6615	Butt of Lewis	Field System		B	B	Crofting	Nil
NB 5260 6610	Butt of Lewis	Stone Alignment, eroding out of face		A	A	Post Medieval	Monitor (?)
NB 5235 6597	Port Sto	Road		A	A	Modern	Nil
NB56NW 11	Port Sto	Buildings		B	C	Crofting?	Nil
NB 5240 6589	Port Sto	Stone Alignment		A	B	Modern	Nil
NB56NW 10	Port Sto	Farmstead		A	B	Pre- Crofting	Monitor
NB 5246 6592	Port Sto	Stone Alignment		B	B	Unknown	Monitor (?)
NB56NW 16	Port Sto	Enclosure		B	B	Unknown	Monitor
NB 5254 6571	Port Sto	Dyke, Stone and Turf		B	B	Post Medieval	Nil
NB 5307 6536	Cladach an Eilein	Cairn		A	B	Unknown	Nil
NB 5299 6519	Knockaird	Dyke, Stone and Turf		A	A	Crofting	Nil
NB 5259 6562	Knockaird	Stone Alignment		A	B	Post Medieval	Nil
NB 5285 6553	Braighe Beag	Cairn		A	A	Unknown	Monitor
NB56NW 12	Braighe Beag	Building		C	C	Unknown	Nil
NB56NW 15	Braighe Beag	Enclosure		C	C	Unknown	Nil
NB 5291 6548	Braighe Beag	Cairn		A	A	Modern	Nil
NB56NW 13	Braighe Beag	Sheilings		A	A	Unknown	Monitor, survey
NB 5336 6501	Knockaird	Cellular Complex		A	A	Unknown	Monitor
NB56NW 14	Knockaird	Enclosure, Rectilinear, Turf and stone		A	A	Post Medieval	Monitor (?)
NB 5358 6496	Poll Eistean	Cairns		A	B	Modern	Nil
NB56NW 01	Dun Eistean	Promontory Enclosure and Dun		A	A	Prehistoric	Monitor, survey (?)
NB 5350 6499	Poll Eistean	Cairns		A	A	Unknown	Monitor (?)
NB56SW 21	Poll Eistean	Enclosure		A	A	Unknown	Monitor, survey
NB 5363 6490	Poll Eistean	Cairn		A	B	Post Medieval	Nil
NB 5312 6520	Knockaird	Field System		A	B	Post Medieval	Nil
NB 5405 6459	Buaile na Faing	Dyke, Turf		A	A	Prehistoric	Monitor
NB 5418 6397	Port of Ness	Enclosure, Habitational, Curvilinear, Turf and stone		B	C	Post Medieval	Nil
NB56SW 28	Port of Ness	Enclosure, Habitational, Curvilinear, Turf and stone, farmstead		B	C	Post Medieval	Nil
NB 5414 6395	Port of Ness	Field System		B	A	Post Medieval	Monitor (?)
NB56SW 16	Port of Ness	Harbour, township		C	C	Modern	Nil
NB56SW 29	Port of Ness	Farmstead		C	C	Pre- Crofting	Nil
NB 5452 6263	Eorodale and Skigersta to	Field System		B	B	Crofting	Nil



#### **5.29.4 Gazetteer of palaeo-environment sites**

Label	Locale	Site Type	Matrix State	Site State	Recommendations
NB 502 637	Swainbost	Late devensian multiple drift deposits	A	A	Monitor
NB 537 636	Port of Ness	Complex sequence of tills, sands and gravels	A	A	Monitor

#### **5.29.5 Overview of erosion**

This section can be split into three general zones of erosion including;

- the generally eroding till cliffs, sand and machair from Traigh Chumil to Traigh Sanda (NB 222 to NB 226)
- the generally eroding high cliffs from Eoropie to Port of Ness (NB 227 to NB 232)
- the eroding/stable sand and till cliffs of Port of Ness (NB 233)

The first zone represents the continuation of the till cliffs interspersed by sandy beaches and backed by a wide machair land. These ‘soft’ deposits of till cliffs and sand display many signs of active marine, aeolian and animal erosion (see Ramsay and Brampton 1995, p29-30) which are eroding the archaeological sites within this zone (e.g. NB56SW 14). Traigh Chumil (NB 222) consists of a sand and shingle beach backed by till cliffs of some 20 m. which are experiencing active slumping and erosion.

North of this the cliffs reduce in height until the sandy beach of Swainbost Sands is reached. The upper beach consists of a shingle ridge backing onto the flat low-lying machair, the edge of which shows signs of active wave undercutting during storms. A further stretch of eroding till cliff is then followed until the wide sand beach and shingle ridge of Traigh Sanda is reached. This displays signs of both erosion, with wave undercutting and sand deflation hollows, and sand accretion over the storm ridge and the formation of embryonic dunes within the discontinuous dune system. Indeed, much of the machair backing this zone displays signs of both erosion and deposition resulting in changeable archaeological visibility as well as erosion to the archaeology and so this zone deserves further regular monitoring.



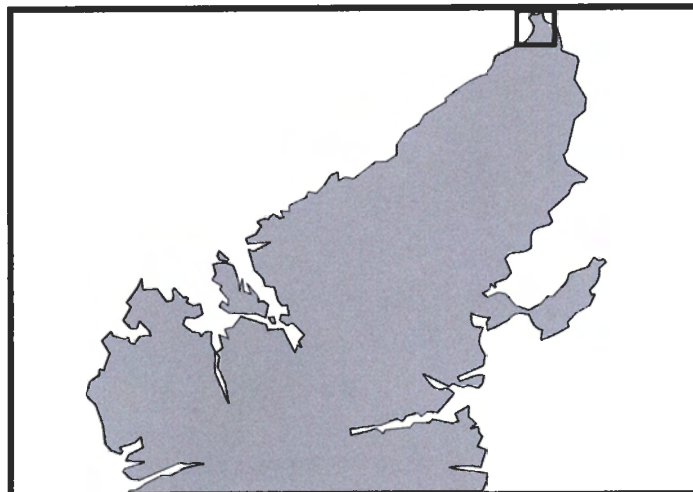
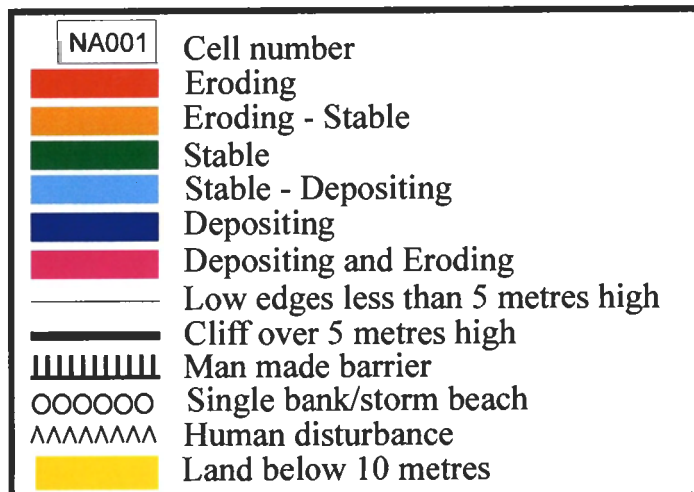
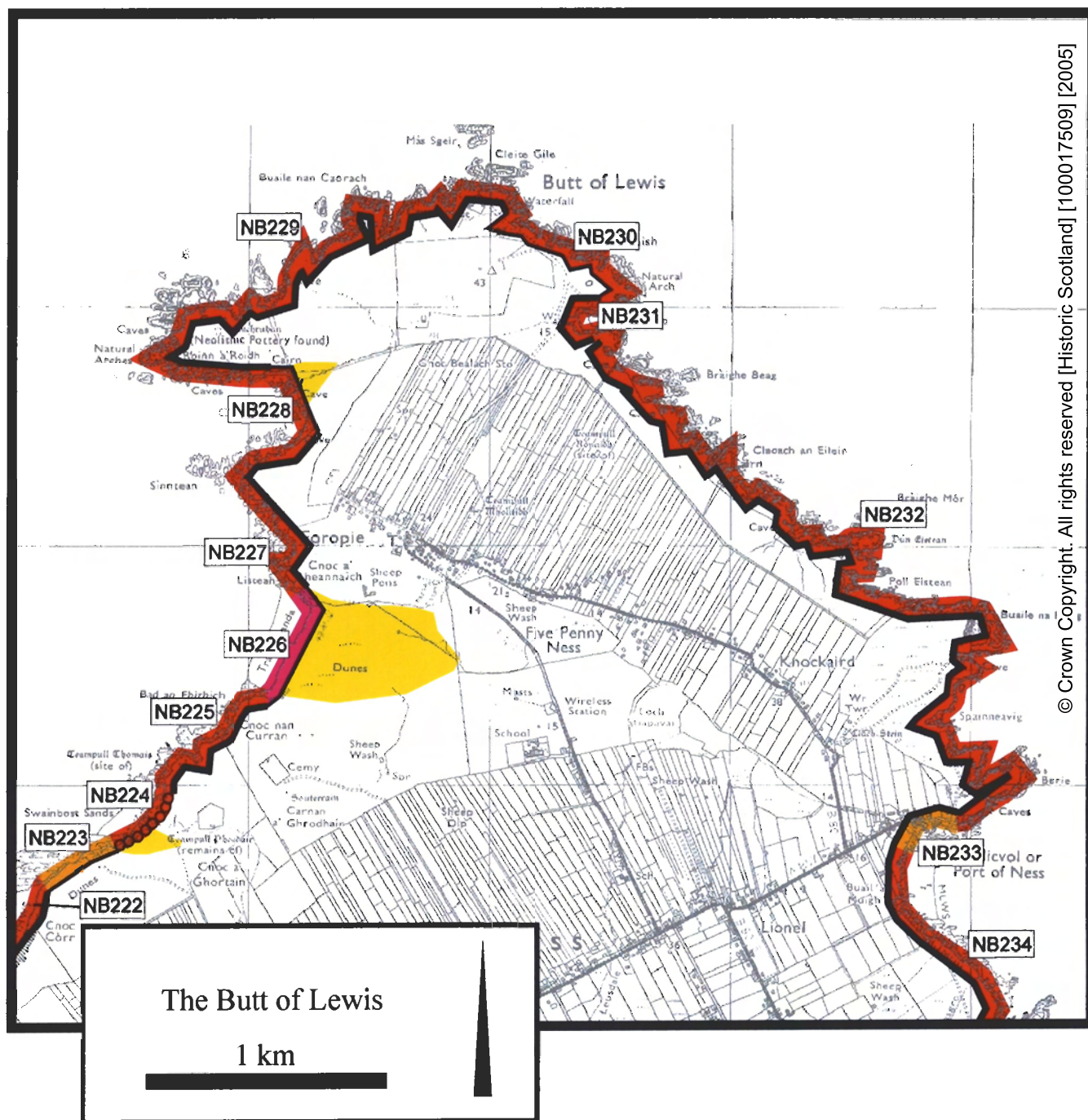
The next zone consists of high cliffs heading round the Butt of Lewis which display signs of erosion with block removal and areas of slumping. This incised cliff line results in a number of promontories and stacks being formed which have been the focus for past settlement (e.g. NB 5109 6516); because of this periodic monitoring of the sites identified would be appropriate.

The final zone consists of the 300 m. long beach at the Port of Ness which is comprised of a sandy lower and upper beach backed by further till cliffs. At the time of visit there were few signs of active erosion, with small-scale slumping and active erosion scars on the till cliff face but Ramsay and Brampton (1995, p28) noted that the cliffs were eroding a relatively high percentage of the time. Hence, SNH have initiated a monitoring programme following fears by local inhabitants over the rate of cliff recession. It would seem sensible to involve an element of archaeological monitoring within this programme.

#### **5.29.6 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 222	NB 500 633	A-Eroding	Traigh Chumil	Mainly Sand	Wind Blown Sand	Meta-sediment	483.508	Cliff over 5 m.
NB 223	NB 503 637	B-Eroding/ Stable	Swainebost	Mainly Rock Platform	Wind Blown Sand	Meta-sediment	389.251	Low edge < 5 m.
NB 224	NB 505 638	A-Eroding	Swainebost	Mainly Sand	Wind Blown Sand	Meta-sediment	435.363	Storm / shingle ridge
NB 225	NB 508 642	A-Eroding	Cnoc nan Curran	Mainly Rock Platform	Wind Blown Sand	Meta-sediment	720.049	Cliff over 5 m.
NB 226	NB 512 645	F-Eroding/ Depositing	Traigh Sanda	Mainly Sand	Wind Blown Sand	Meta-sediment	418.494	Low edge < 5 m.
NB 227	NB 511 651	A-Eroding	Eoropie	Mainly Rock Platform	Wind Blown Sand	Meta-sediment	980.000	Cliff over 5 m.
NB 228	NB 511 656	A-Eroding	Eoropie	Mainly Rock Platform	Drift, Boulder clay over visible rock	Meta-sediment	250.000	Low edge < 5 m.
NB 229	NB 515 661	A-Eroding	Butt of Lewis	Mainly Rock Platform	Glacial sand and Gravel / Marine deposits	Meta-sediment	4029.221	Cliff over 5 m.
NB 230	NB 530 655	A-Eroding	Butt of Lewis	Mainly Rock Platform	Drift, Boulder clay over visible rock	Meta-sediment	850.00	Low edge < 5 m.
NB 231	NB 523 659	A-Eroding	Port Sto	Mainly Sand	Wind Blown Sand	Meta-sediment	191.187	Cliff over 5 m.
NB 232	NB 534 649	A-Eroding	Knockaird	Mainly Rock Platform	Drift, Boulder clay over visible rock	Meta-sediment	6513.599	Cliff over 5 m.

**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 50 63/NB 55 67**



NB 233	NB 538 636	B-Eroding/ Stable	Port of Ness	Mainly Sand	Wind Blown Sand	Meta- sediment	593.958	Cliff over 5m.
NB 234	NB 545 627	A-Eroding	Eorodale	Mainly Rock Platform	Drift, Boulder clay over visible rock	Meta- sediment	2646.077	Cliff over 5m.

#### **5.29.7 Overview of coastal geomorphology**

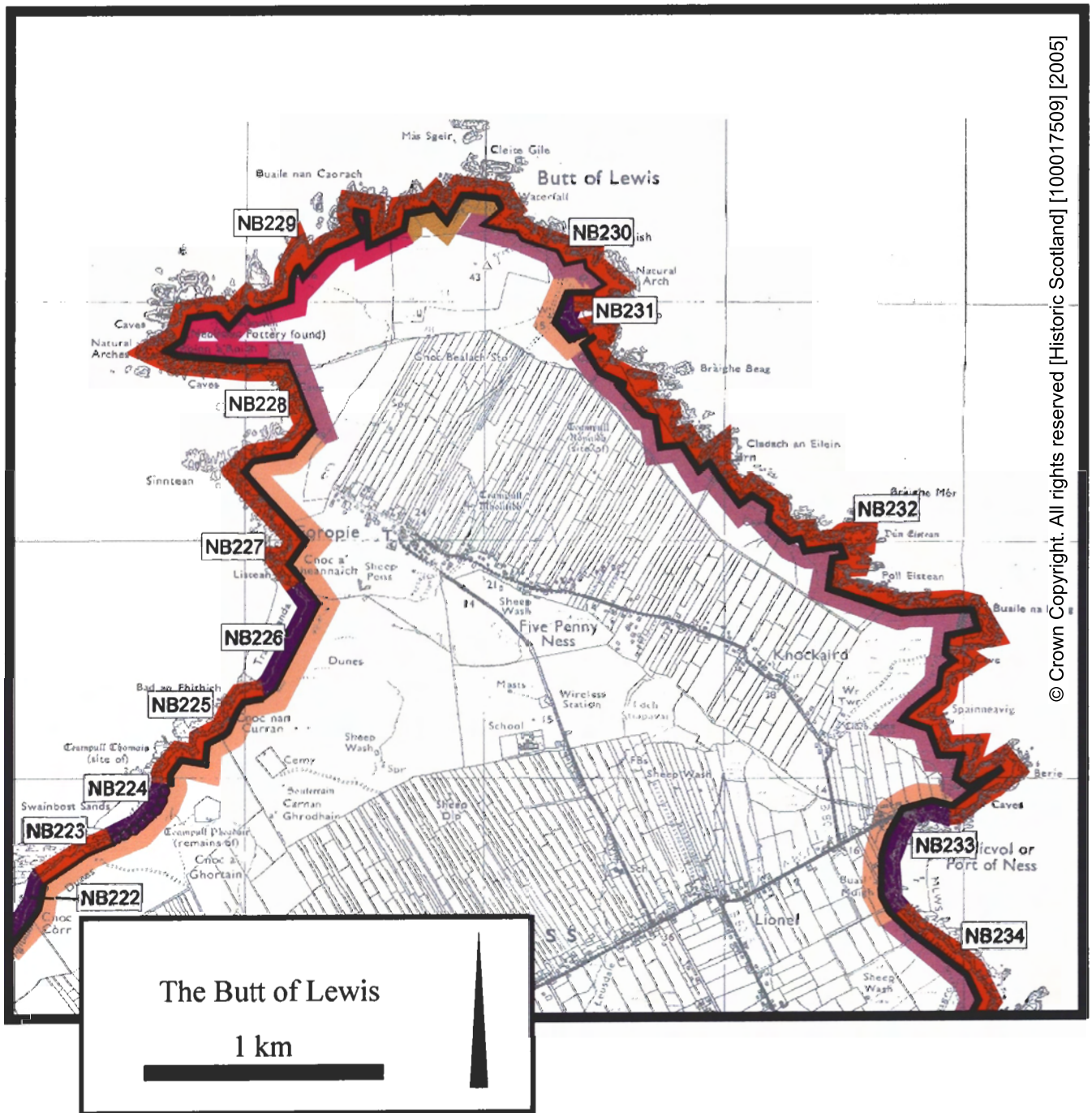
The descriptions of the geomorphology will follow the breakdown of the section into the general erosion zones above. The first zone marks the continuation of the sand and shingle beaches separated by till cliff and almost all the coastline backed by extensive machair land and discontinuous dune systems. The eroding till cliffs contain fragments of the raised beach and the multiple drift deposits described in section 5.26.1, with the underlying basement geology composed of Metasediments of the Lewisian complex.

This basement geology also underlies the following zone, which may account for its incised profile and erosive regime. Metasediments are not only slightly softer than the metamorphic Lewisian Gneiss but also contain jointing along lines of structural weakness which results in the incised profile. The basement rock is underlain by glacially derived material which is evident in many of the erosion scars throughout the zone.

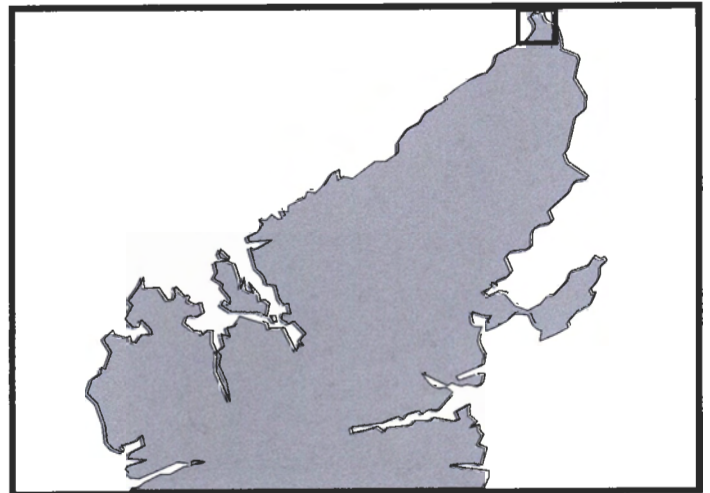
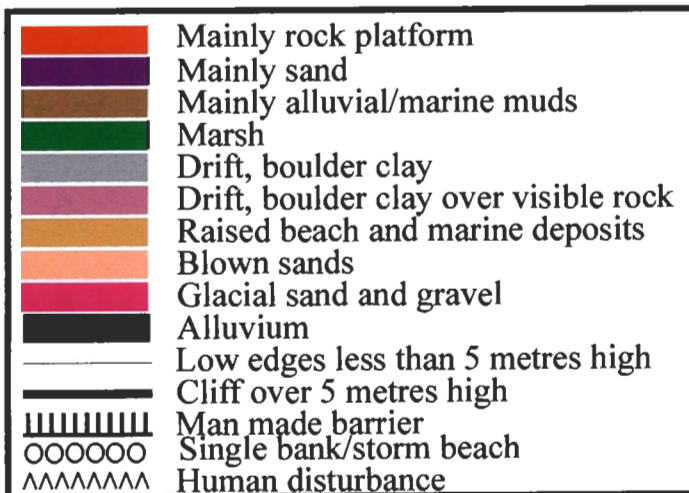
The final zone reverts to the sandy beach backed by till cliffs at Port of Ness. The till cliffs (palaeo-environment site NB 537 636) show a complex sequence of interbedded shelly tills, sands, silts and gravels which have been correlated with the Late Devensian multiple drift deposits at Swainbost (Gordon 1993b, p422). Future sedimentological and palaeo-environmental analyses undertaken on this site will provide important information on the palaeo-environmental reconstruction and glacial dynamics of the Late Devensian.



**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 50 63/NB 55 67**



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**5.30 MAP SHEET NB 54 60/NB 58 66, PORT OF NESS TO PORT ALASDAIR****5.30.1 Overview of cultural heritage****5.30.1.1 Number of monuments**

Scheduled	- 0	
Recorded in the NMRS	- 2	[NB56SW 13 and NB56SW 44]
Others	- 8	
<b>Total</b>	<b>- 10</b>	

**5.30.1.2 Number of site state occurrences**

Eroding (A)	- 3
Eroding/stable (B)	- 3
Stable (C)	- 4

**5.30.1.3 Number of response occurrences**

Nil	- 7
Monitor, (Baseline survey)	- 3
Detailed survey	- 3
Sample	- 0

**5.30.2 Description of cultural heritage**

This map sheet covers the township of Skigersta to the south-east of the Butt of Lewis, and is characterised by high cliffs of more than 5.0 metres backed by very rough peat moorland. Much of the coastline of eastern Lewis between this point and the Townships of Tolsta (12 kilometres to the south) is dominated by uninhabited high cliffs topped with deep flowing peat that obscures any early settlement.

Of the sites on this map most are related to pre-crofting and crofting settlement. Only three sites are worthy of note here, and all are promontory enclosures. The first of these is Dun Eorodale (NB56SW 13), recorded as a settlement and promontory "fort" and standing on a bulbous stack or promontory that is no longer linked to the shore. *Circa* 2 kilometres to the south of this is the promontory of Cabha, (NB 5552 6180). This site is a multivalate enclosure constructed in several phases. A further 1.5 kilometres to the south of this is a third site at Meall Geal (NB 5624 6075). This site is univalate with the enclosing wall crossing a very narrow neck of land. Within the enclosure are a series of structures that may represent two rectilinear and two circular buildings. Of these sites NB56SW 13 is the largest enclosing between 3 and 4 hectares, the other two enclose between 2 and 3 hectares. All three sites are suffering constant coastal erosion.



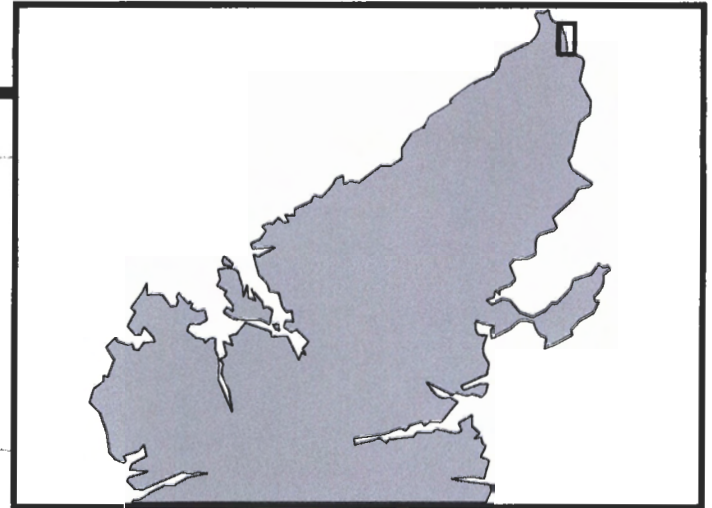
**5.30.3 Gazetteer of cultural heritage**

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB 5452 6263	Eorodale and Skigersta to	Field System		B	B	Crofting	Nil
NB56SW 13	Dun Eorodale	Settlement 'promontory' fort		A	A	Prehistoric	Monitor, survey (?)
NB 5453 6274	Aird Skeginess	Stone Alignment		B	B	Pre Clearance	Nil
NB 5483 6264	Aird Skeginess	Cairn		B	C	Modern	Nil
NB56SW 44	Skigersta	Sheilings (possible)		C	C	Post Medieval	Nil
NB 5501 6235	Skigersta	Cairns		B	C	Post Medieval	Nil
NB 5496 6183	Port Skigersta	Settlement, blackhouse		B	B	Post Medieval	Nil
NB 5547 6164	Cadha	Dyke, Stone and Turf		B	C	Post Medieval	Nil
NB 5552 6180	Cadha	Promontory Enclosure, multivalate		A	A	Prehistoric	Monitor, survey (?)
NB 5624 6075	Meall Geal	Promontory Enclosure		A	A	Prehistoric	Monitor, survey (?)

**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 54 60/NB 58 66**

Port of Ness

1 km

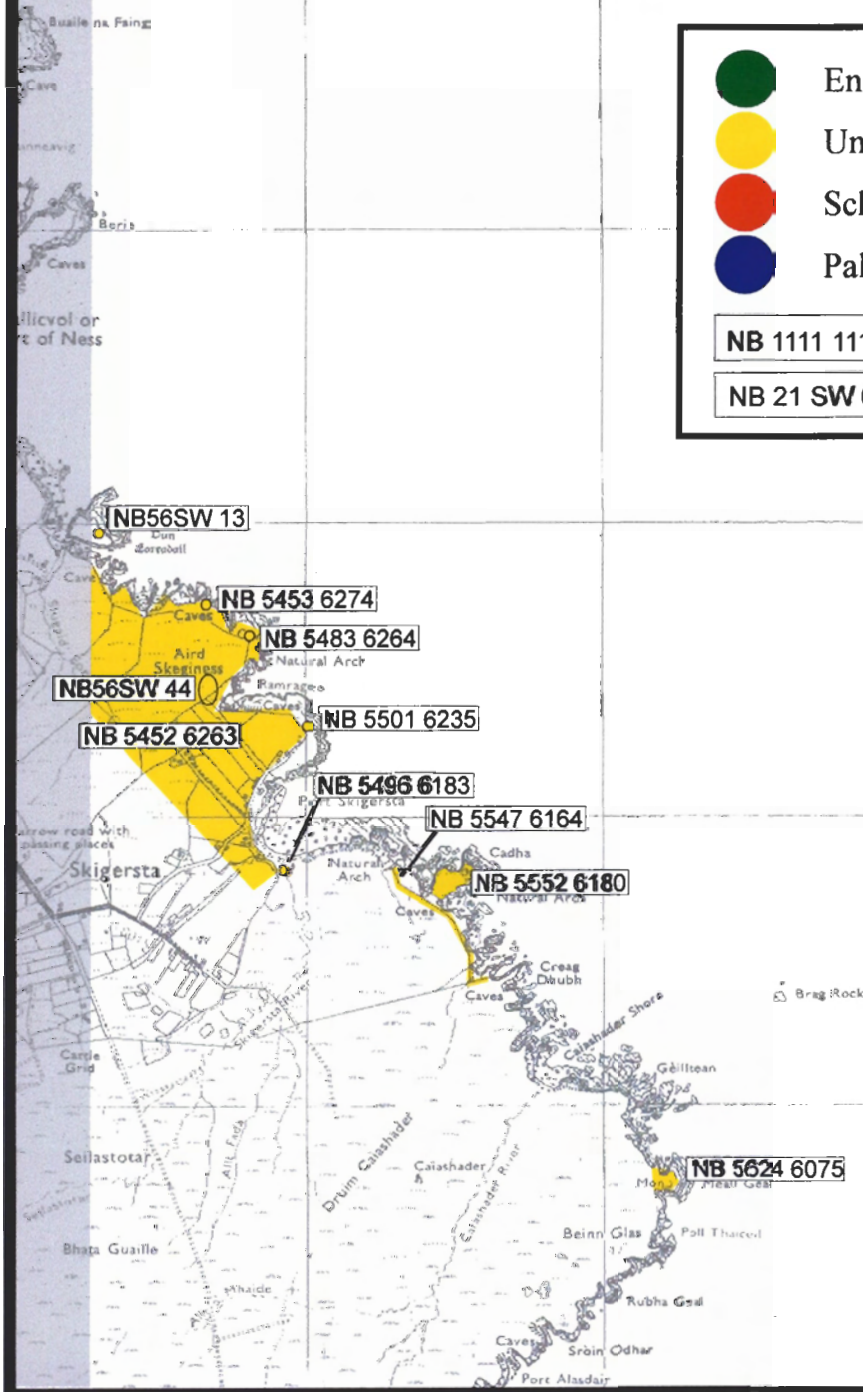


- Encrofted to the shore
- Un-scheduled Monuments
- Scheduled Monuments
- Palaeo-Environment Sites

NB 1111 1111

NB 21 SW 01

Monument Reference Number



#### **5.30.4 Overview Erosion cells**

This section is dominated by generally eroding high cliffs interrupted by the sand and shingle beaches of Port Skigersta and Caiashader Shore. The incised cliff line results in a number of promontories and stacks being formed, some of which have been utilised for prehistoric settlement (e.g. NB 5624 6075). These individual sites deserve periodic site-specific monitoring .

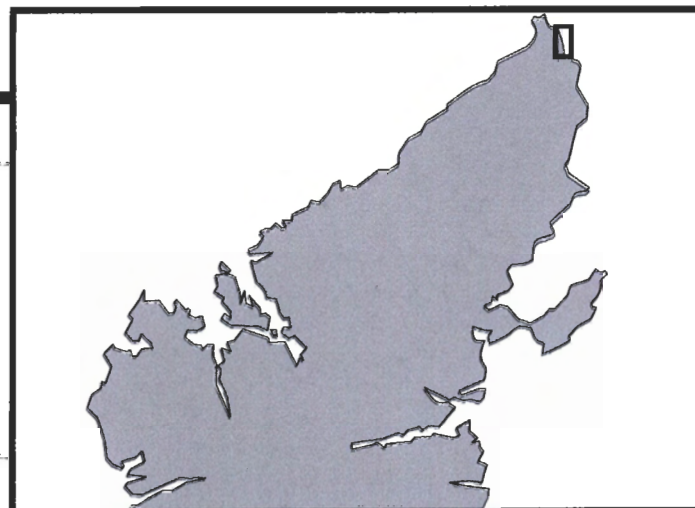
#### **5.30.5 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 235	NB 555 616	A-Eroding	Skigersta	Mainly Rock Platform	Drift, Boulder clay over visible rock	Meta-sediment	1788.475	Cliff over 5m.
NB 236	NB 549 619	B-Eroding/ Stable	Port Skigersta	Mainly Sand	Drift, Boulder clay over visible rock	Anorthosite	588.537	Shingle / storm bank
NB 237	NB 555 615	A-Eroding	Caiashader Shore	Mainly Rock Platform	Drift, Boulder clay over visible rock	Meta-sediment	1200.00	Cliff over 5m
NB 237a	NB 558 611	A-Eroding	Caiashader Shore	Mainly Sand	Drift, Boulder clay over visible rock	Meta-sediment	262.048	Shingle / storm bank
NB 238	NB 560 605	A-Eroding	Beinn Glas	Mainly Rock Platform	Drift, Boulder clay over visible rock	Anorthosite	2226.281	Cliff over 5m.

**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 54 60/NB 58 66**

The Butt of Lewis

1 km



NA001

Cell number



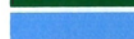
Eroding



Eroding - Stable



Stable



Stable - Depositing



Depositing



Depositing and Eroding



Low edges less than 5 metres high



Cliff over 5 metres high



Man made barrier



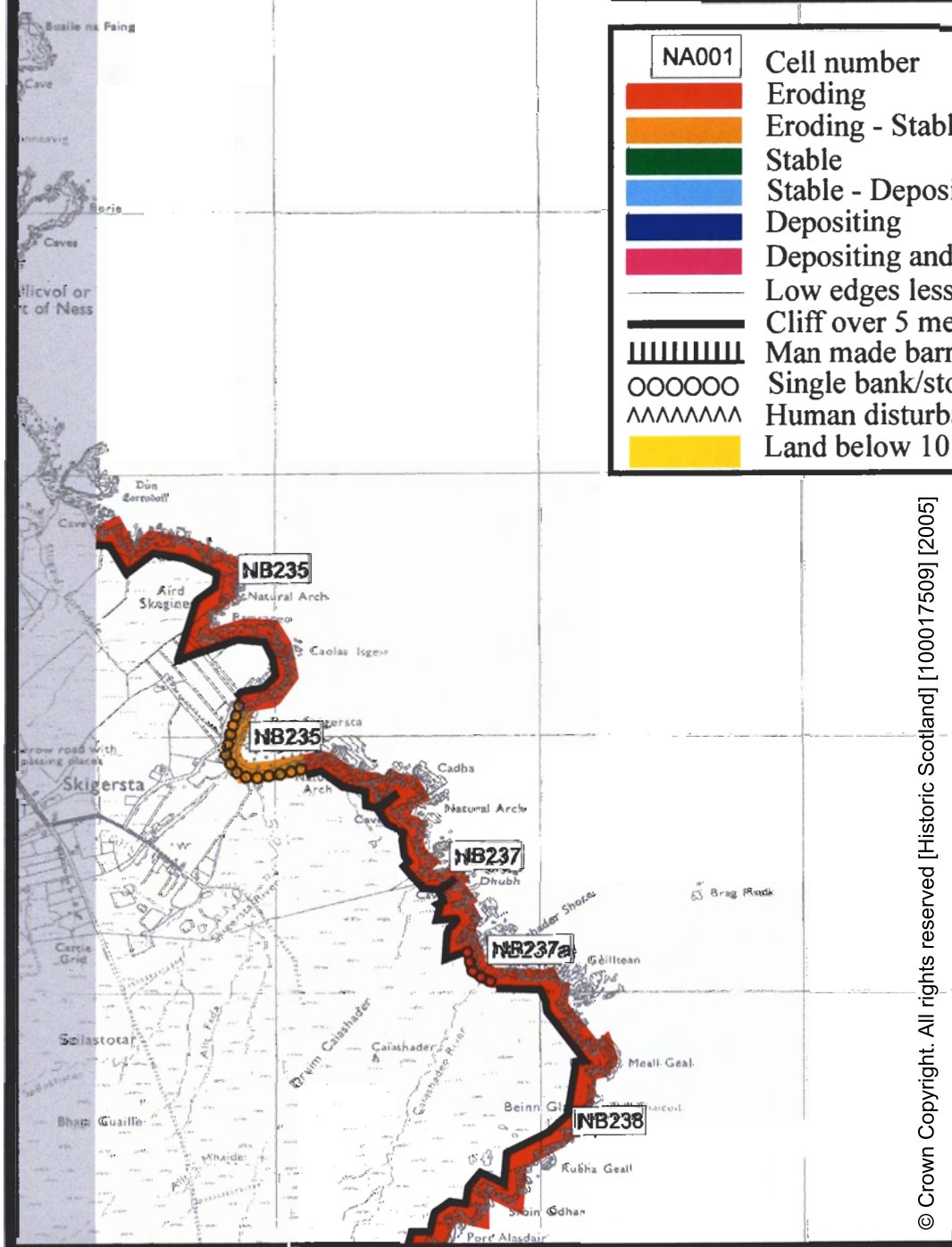
Single bank/storm beach



Human disturbance



Land below 10 metres



5.30.6 *Overview of coastal geomorphology*

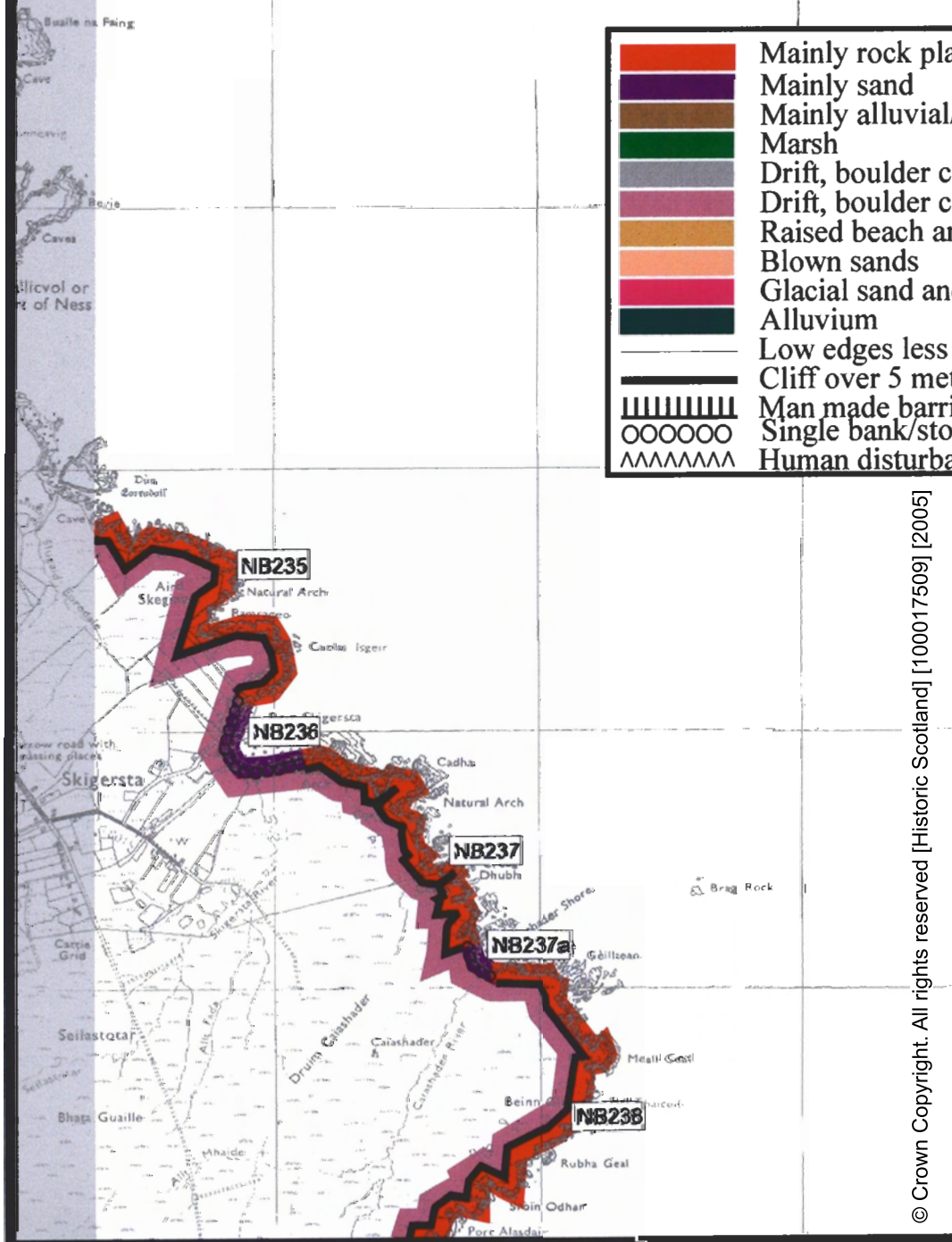
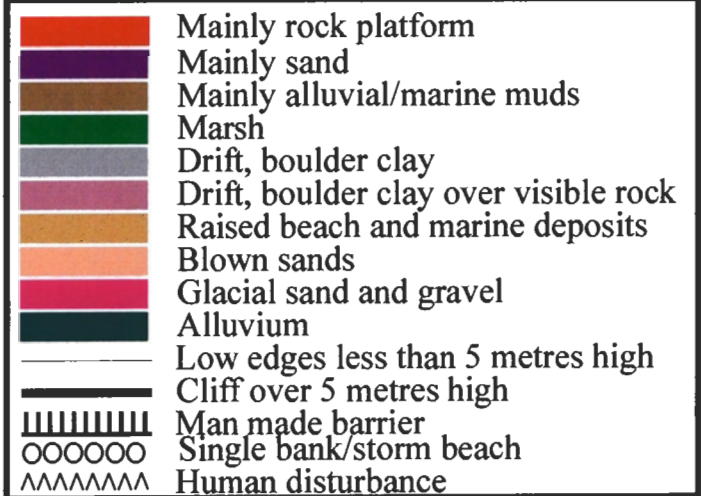
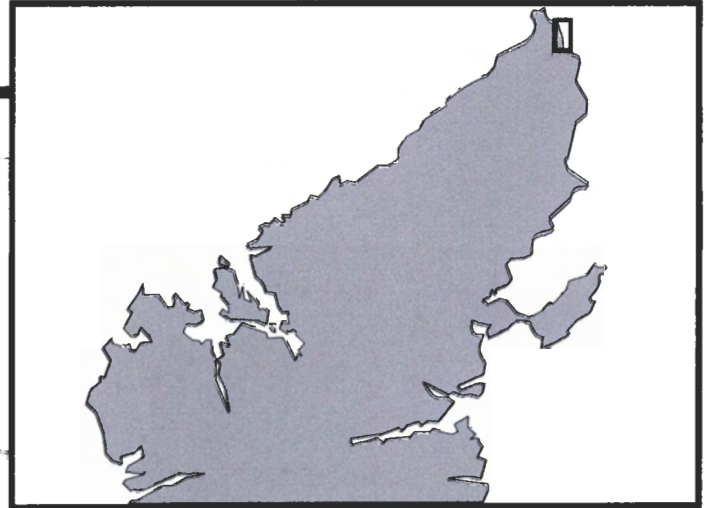
The high cliffs of this section are comprised of Lewisian complex Anorthosite and Metasediments which are slightly softer than Lewisian metamorphic Gneiss and also contain jointing which may account for the high level of selective erosion and incision within this stretch. Port Skigersta consists of a sand lower beach and intertidal zone, backed by a shingle ridge and croft lands underlain by glacially derived and *in situ* weathered material. Caiashader Shore is similar in form to Port Skigersta, though smaller and consequently less sand and shingle. Both coves display signs of erosion, such as wave undercutting and erosion of the shingle ridge/land interface, though Port Skigersta seems to be more protected because of the greater concentration of shingle within the beach deposits.



**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 54 60/NB 58 66**

The Butt of Lewis

1 km







## 5.31 MAP SHEET NB 54 54/ NB 57 60, CELLAR HEAD

## 5.31.1 Overview of cultural heritage

## 5.31.1.1 Number of monuments

Scheduled	- 1	[5328]
Recorded in the NMRS	- 5	[NB55NE 11, NB55NE 01, NB55NE 10, NB55SE 01, NB55SE 03]
Others	- 9	
<b>Total</b>	<b>- 14</b>	

## 5.31.1.2 Number of site state occurrences

Eroding (A)	- 6
Eroding/stable (B)	- 2
Stable (C)	- 6

## 5.31.1.3 Number of response occurrences

Nil	- 8
Monitor, (Baseline survey)	- 6
Detailed survey	- 2
Sample	- 0

## 5.31.2 Description of cultural heritage

This map sheet covers an uninhabited stretch of the east coast of the Isle of Lewis that includes Cellar Head. This stretch of coastline is totally dominated by high sea cliffs of more than 5.0 metres backed by moorland that consists of deep flowing uncut peat. Most of the sites on this map sheet date to the post-medieval and pre-crofting settlement phases (NB 5603 5763, NB55NE 11 and NB55NE 10). There are two settlements that may represent farmsteads of medieval or earlier date (NB 5534 5431 and NB55SE 03) though it cannot be ruled out that these sites are actually extensive sheiling settlements.

Two sites here are believed to be prehistoric in origin, these are Dun Bilascleiter (NB55NE 01) and a cellular complex immediately to its south (NB 5602 5766). Dun Bilascleiter is a Scheduled Ancient Monument (number 5328) and consists of a CARH situated on a promontory undergoing active coastal erosion.

**5.31.3 Gazetteer of cultural heritage**

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB 5545 5950	Cuiashader	Cairn		A	A	Unknown	Monitor
NB55NE 11	Bilascleitir	Sheilings, possible		C	C	Unknown	Nil
NB 5602 5766	Bilascleitir	Cellular Complex		A	A	Prehistoric	Monitor, survey
NB55NE 01	Dun Bilascleitir	CARH, possible galleried dun		A	A	Prehistoric	Monitor, survey
NB 5603 5763	Bilascleitir	Enclosure, Habitational,		A	A	Post Medieval	Nil
NB 5602 5756	Bilascleitir	Enclosure, Habitational,		A	B	Post Medieval	Nil
NB 5614 5749	Bilascleitir	Enclosure, Rectilinear		A	C	Post Medieval	Nil
NB 5597 5727	Bilascleitir	Cairn		A	C	Post Medieval	Nil
NB 5591 5725	Bilascleitir	Enclosure, possible vertical mill.		A	A	Post Medieval	Nil
NB55NE 10	Dibadale	Sheilings, possible		A	A	Unknown	Monitor
NB55SE 01	Dibadale	Enclosure, Rectilinear, Turf and stone		C	C	Pre Clearance	Nil
NB 5537 5438	Dibadale	Mill, Horizontal		A	C	Post Medieval	Monitor (?)
NB 5534 5431	Dibadale	Enclosure, Rectilinear, Turf and stone, possible sheiling		A	B	Pre Clearance	Monitor
NB55SE 03	Quilatotar	Enclosure, Habitational, Rectilinear, Drystone		C	C	Pre Clearance	Nil

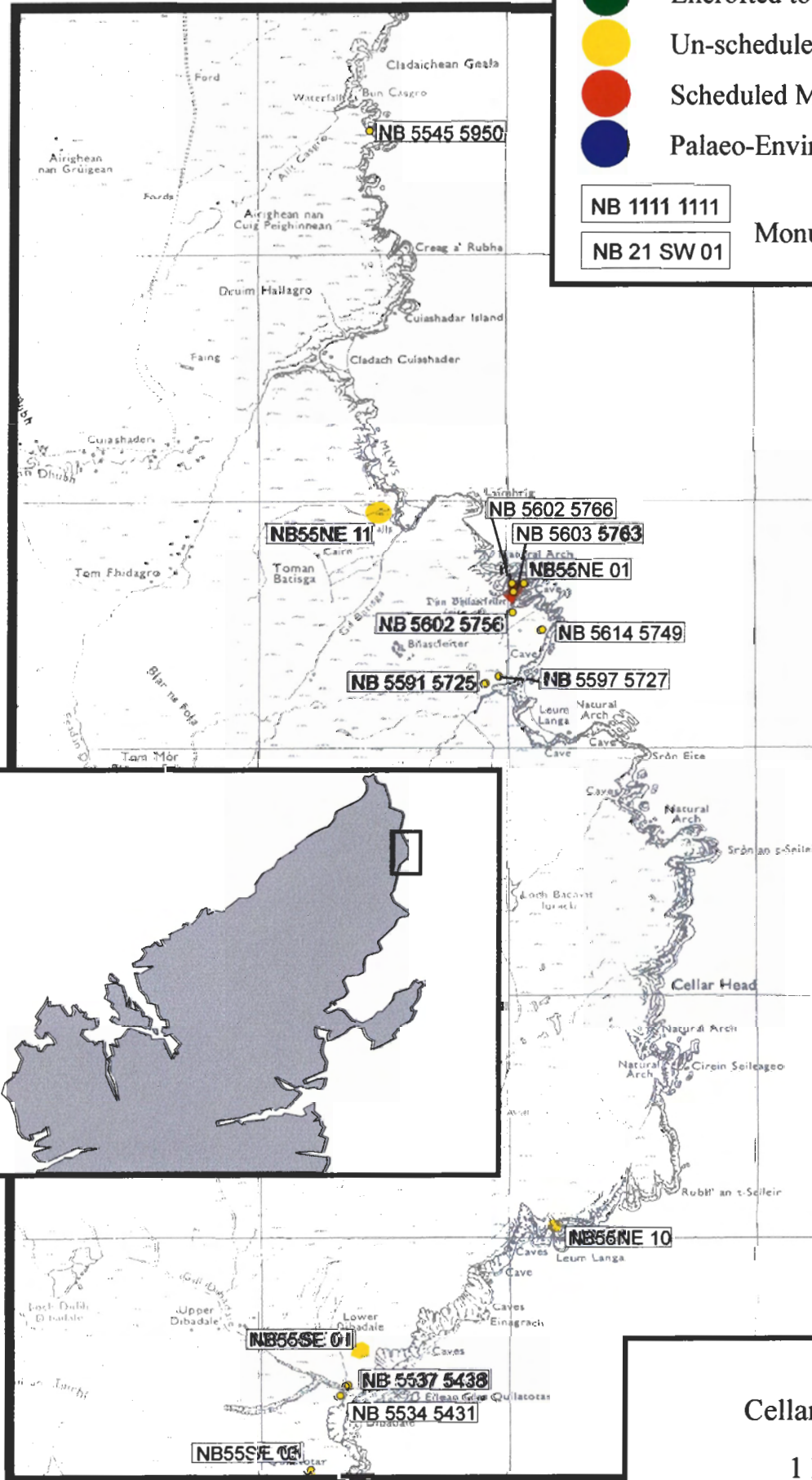
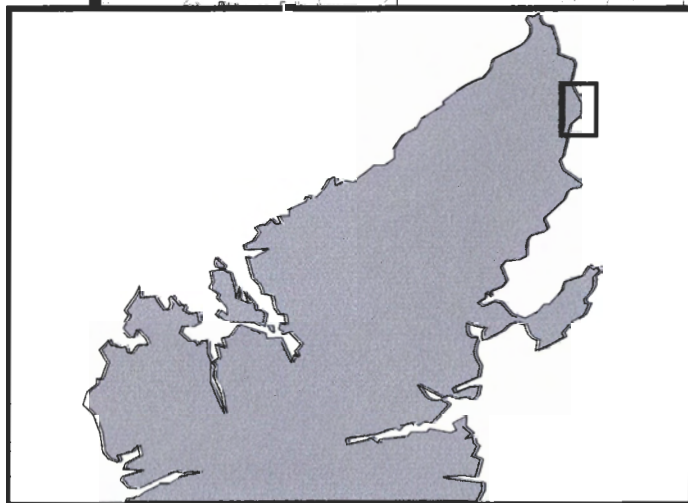
# COASTAL EROSION ASSESSMENT(LEWIS) MAP SHEET NB 54 54/NB 57 60

- Encrofted to the shore
- Un-scheduled Monuments
- Scheduled Monuments
- Palaeo-Enviroment Sites

NB 1111 1111

NB 21 SW 01

Monument Reference Number



Cellar Head

1 km

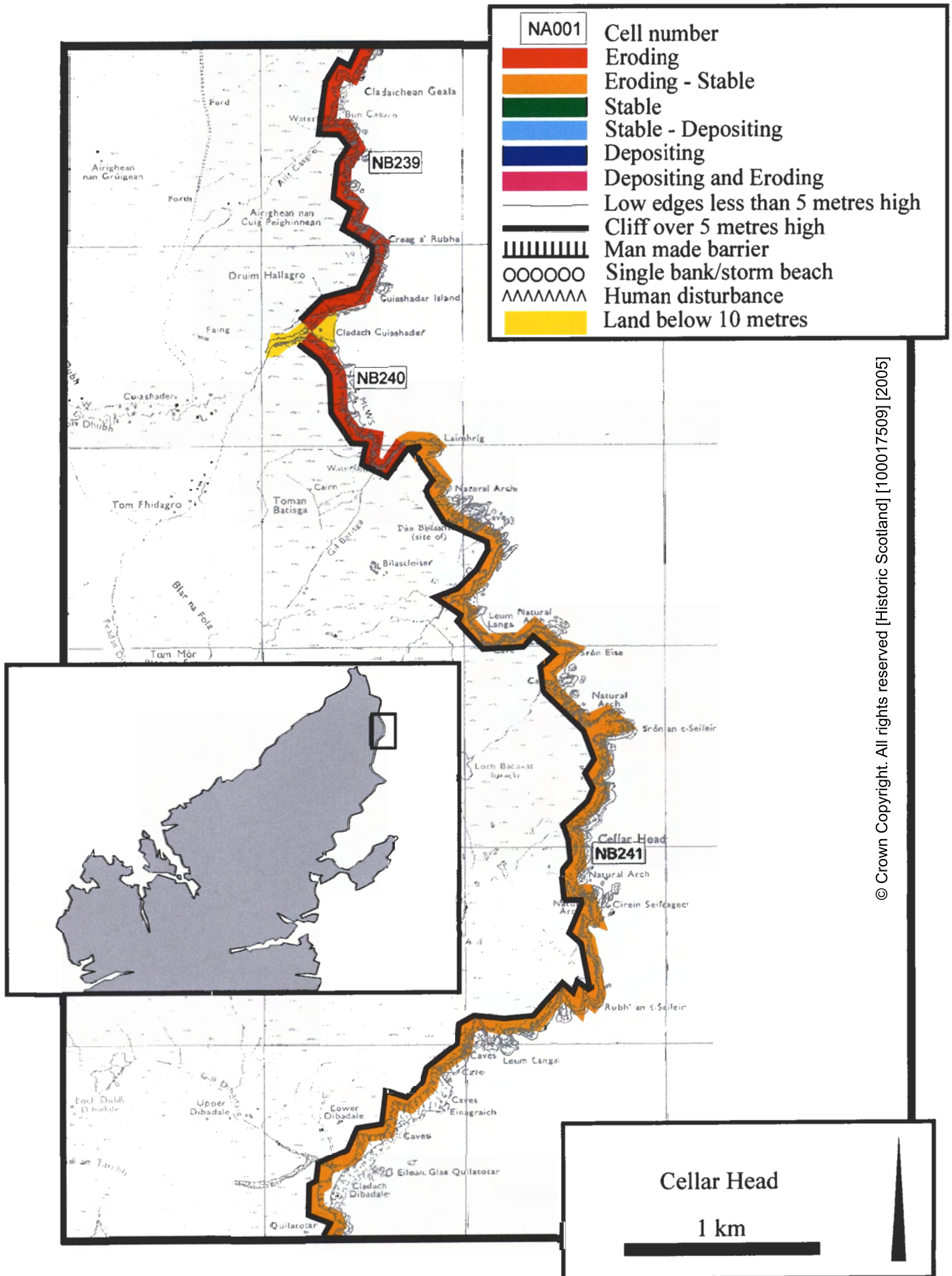
#### 5.31.4 Overview of erosion

The erosion regime in this section can be split into two zones; the northern stretch of generally eroding high cliff from Port Alisdair to Laimbrig (NB 239 to NB 240) and the southern stretch of eroding/stable high cliff to Dibadale (NB 241). The northern stretch shows signs of active erosion with block and columnal falls of the rock platform and eroding scars and sections in the sand around Cuishader. The southern section however seems to be more stable with less evidence of recent cliff erosion, despite the generally incised profile of the coastline.

#### 5.31.5 Gazetteer of geomorphic cells

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 239	NB 554 592	A-Eroding	Cuishader	Mainly Rock Platform	Drift, Boulder clay over visible rock	Anorthosite	2745.762	Cliff over 5m.
NB 240	NB 554 581	A-Eroding	Cuishader	Mainly Sand	Drift, Boulder clay	Meta-sediment	1325.612	Cliff over 5m.
NB 241	NB 561 558	B-Eroding/ Stable	Dibadale	Mainly Rock Platform	Glacial sand and Gravel	Gneiss	9015.084	Cliff over 5m.

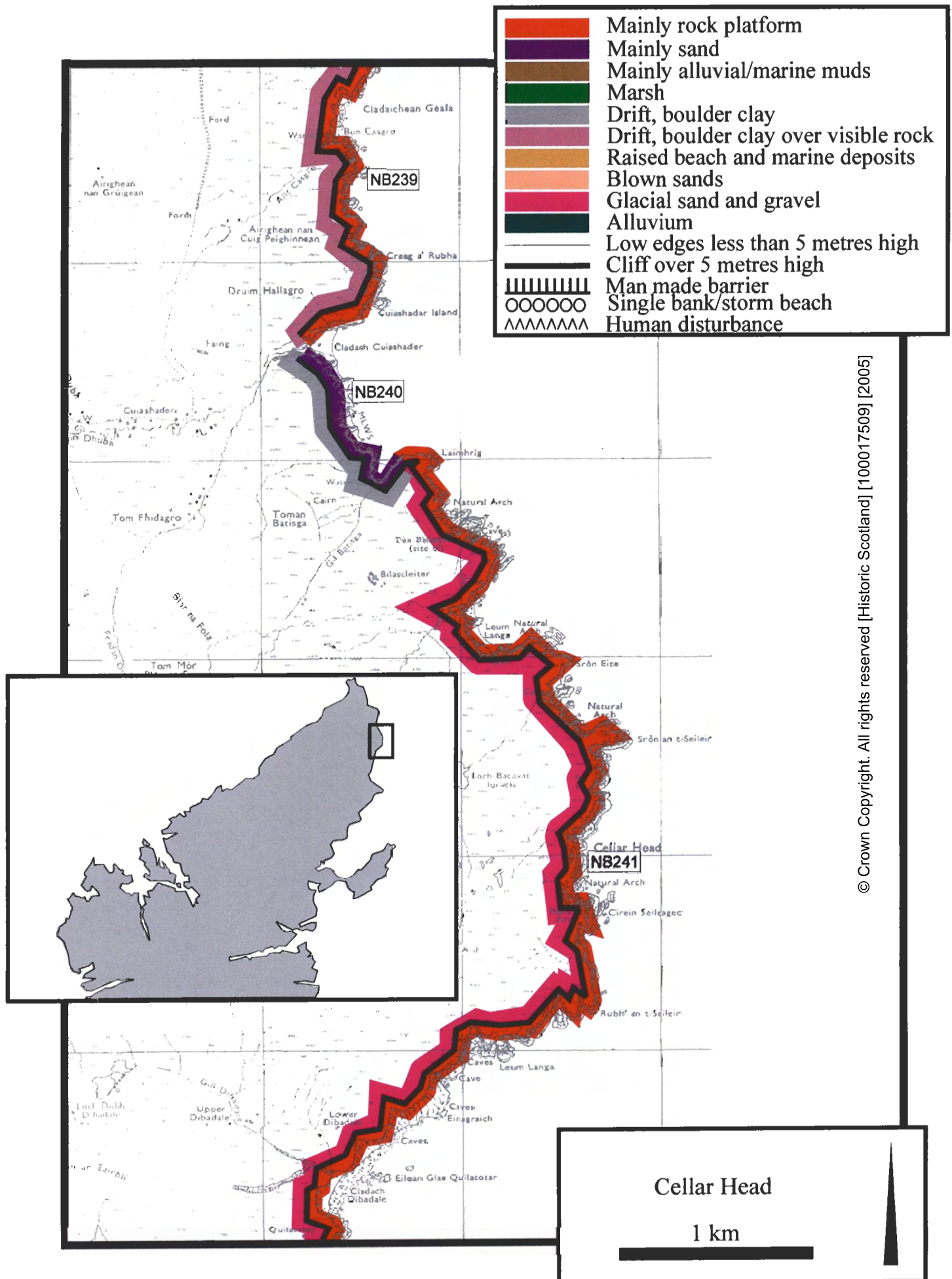
**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 54 54/NB 57 60**





5.31.6 *Overview of coastal geomorphology*

This section is dominated by high cliffs. The basement geology changes from Lewisian complex Anorthosites (NB 239) and Metasediments (NB 240) to Lewisian Gneiss at approximately the point at which the northern and southern general erosion zones merge which may suggest a factor for the differing observed erosion regimes within the section. The overall basement rock is generally overlain by sporadic shallow deposits of glacially derived substrate and *in situ* weathered material.

**MAP SHEET NB 54 54/NB 57 60**



**5.32 MAP SHEET NB 53 48/NB 57 54, TOLSTA**

**5.32.1 Overview of cultural heritage**

**5.32.1.1 Number of monuments**

Scheduled	- 1	[5250]
Recorded in the NMRS	- 8	[NB55SW 04, NB55SW 01, NB55SW 06, NB55SW 23, NB55SW 24, NB55NW 02, NB55NW 01, NB55NW 04]
Others	- 31	
<b>Total</b>	<b>- 39</b>	

**5.32.1.2 Number of site state occurrences**

Eroding (A)	- 1
Eroding/stable (B)	- 31
Stable (C)	- 7

**5.32.1.3 Number of response occurrences**

Nil	- 23
Monitor, (Baseline survey)	- 15
Detailed survey	- 2
Sample	- 0
Find site location	- 1

**5.32.2 Description of cultural heritage**

This map sheet is dominated by two distinctly separate terrain types. In the north high sea cliffs of more than 5.0 metres are backed by deep flowing uncut peat. In the south is the sandy beach of New Tolsta, backed by dunes and the township of New Tolsta.

The majority of the sites recorded here relate to the post-medieval, pre-crofting and crofting phases of settlement. Examples of this include seven rectilinear habitation enclosures (NB 5355 5013, NB 5348 4997 (x2), NB 5366 4952, NB 5372 4949, NB 5375 4948 and NB 5368 4945). Also recorded are 4 curvilinear habitation enclosures of uncertain date (NB 5351 5009, NB 5337 4991, NB 5349 5006 and NB 5372 4949).

On the high cliffs to the north are 6 sites that are thought to be prehistoric, these include two settlement mounds (NB 5428 5184 and NB5390 5120) of uncertain date, and two cairns (NB55SW 04 and NB 5415 5143) both of which are thought to be burials (though the former is recorded in the NMRS as a possible sheiling). Finally in this group is the site ), a circular mound called Dun Othail (NB55SW 06, and a promontory enclosure (NB 5355 5013) situated immediately to the north of the bay at New Tolsta and enclosing less than 1 hectare.

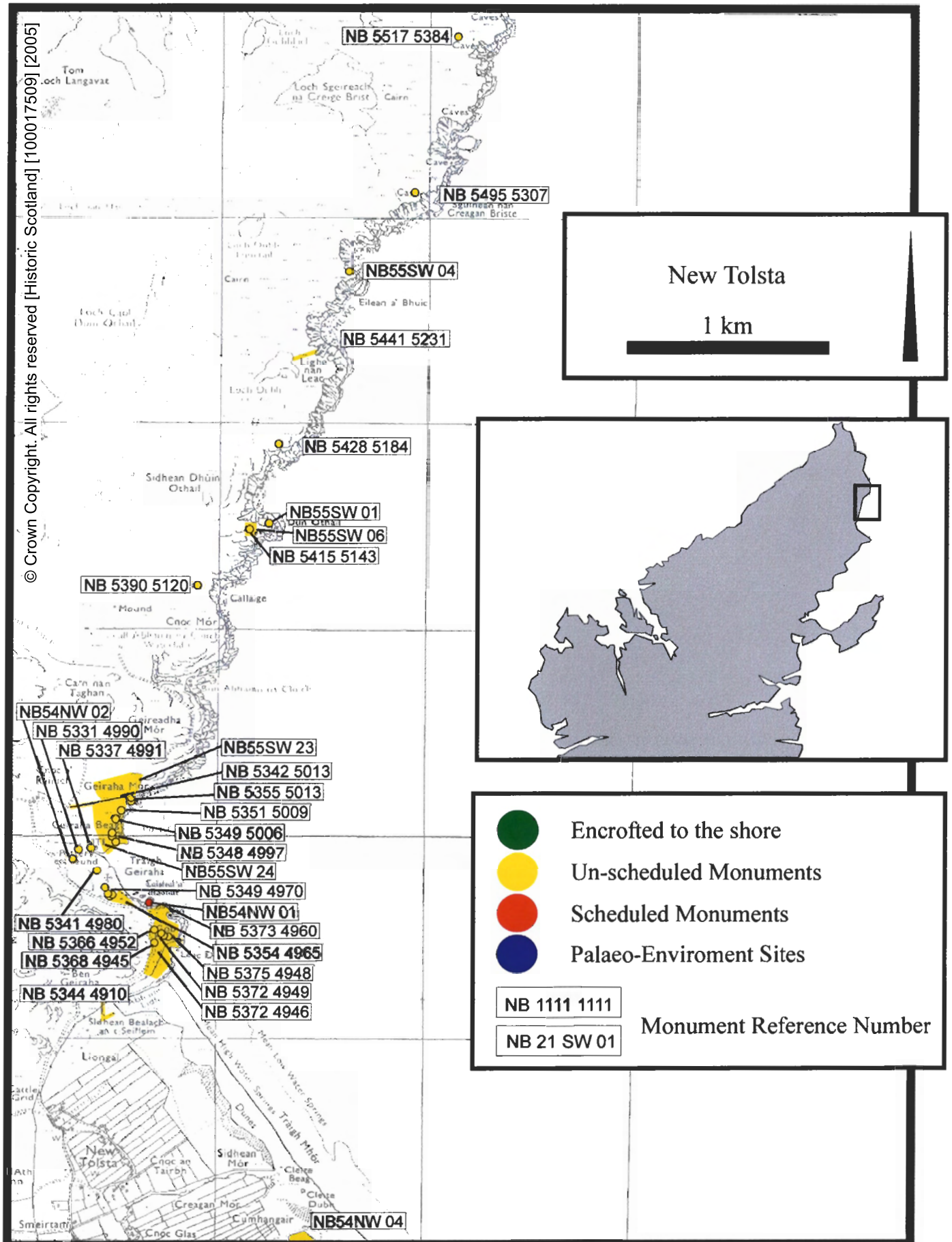
The dune system at New Tolsta is relatively stable and unlike similar terrain on the west of Lewis is not eroding to reveal vast numbers of sites. Very few sites are recorded as actively eroding in the dunes, these include a structure (NB 5349 4970) and a wall (NB 5341 4980). Site NB54NW 02 is a pottery scatter recorded as eroding, but is now not visible possibly due to being recovered with sand.

There is one Scheduled Ancient Monument, Caisteal a' Mhorair (NB54NW 01 - number 5250) which survives as a stack edged with a stone wall. Immediately adjacent to this is a promontory enclosure of *circa* 1 hectare in size (NB 5373 4960).

### 5.32.3 Gazetteer of cultural heritage

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB 5517 5384	Quilatotar	Mill, Horizontal		B	C	Pre Clearance	Monitor (?)
NB 5495 5307	Sguinean nan Creagan Briste	Cairn		C	C	Unknown	Nil
NB55SW 04	Sguinean nan Creagan Briste	Cairn, possible chambered, (recorded by NMRS as a sheiling)		B	C	Prehistoric	Monitor
NB 5441 5231	Lighe nan Leac	Dyke, Turf		B	B	Unknown	Monitor (?)
NB 5428 5184	Lighe nan Leac	Settlement Mound		C	C	Unknown	Nil
NB55SW 01	Dun Othail	Circular mound		B	B	Prehistoric	Monitor
NB 5415 5143	Dun Othail	Burial Cairn		B	C	Neolithic	Monitor
NB55SW 06	Dun Othail	Sheiling		B	C	Post Medieval	Nil
NB 5390 5120	Traigh Geiraha	Settlement Mound		C	C	Unknown	Nil
NB55SW 23	Traigh Geiraha	Cultivation, Rigging, township		B	B	Pre Clearance	Nil
NB 5342 5013	Traigh Geiraha	Dyke, Stone and Turf		B	B	Crofting	Nil
NB 5355 5013a	Traigh Geiraha	Promontory Enclosure		B	B	Unknown	Monitor, survey (?)
NB 5355 5013b	Traigh Geiraha	Enclosure, Habitational, Rectilinear, Drystone		B	B	Crofting	Nil
NB 5351 5009	Traigh Geiraha	Enclosure, Habitational, Curvilinear, Turf and stone		B	B	Pre Clearance	Nil
NB 5349 5006	Traigh Geiraha	Enclosure, Habitational, Curvilinear, Turf and stone		B	B	Pre Clearance	Nil
NB55SW 24	Traigh Geiraha	Cultivation, Rigging		B	B	Pre Clearance	Nil
NB 5348 4997a	Traigh Geiraha	Enclosure, Habitational, Rectilinear, Turf and stone		B	B	Pre Clearance	Nil
NB 5348 4997b	Traigh Geiraha	Settlement		B	B	Pre Clearance	Nil
NB 5348 4997c	Traigh Geiraha	Enclosure, Habitational, Rectilinear, Drystone		B	B	Post Medieval	Nil

**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 53 48/NB 57 54**





**COASTAL EROSION ASSESSMENT (LEWIS)**

NB 5337 4991	Traigh Geiraha	Enclosure, Curvilinear, Turf and stone		D	B	Post Medieval	Nil
NB 5331 4990	Traigh Geiraha	Stone Alignment, stepping stones		B	B	Post Medieval	Nil
NB54NW 02	Traigh Geiraha	Pot scatter (lost		F	B	Unknown	Relocate
NB 5341 4980	Traigh Geiraha	Wall eroding from dune		B	B	Unknown	Monitor
NB 5349 4970a	Traigh Geiraha	Structure eroding from dune		A	A	Unknown	Monitor
NB 5349 4970b	Traigh Geiraha	Enclosure, Habitational, Rectilinear, Drystone		B	B	Unknown	Monitor
NB 5349 4970c	Traigh Geiraha	Stone Alignment		F	B	Unknown	Monitor
NB 5349 4970d	Traigh Geiraha	Settlement Mound		B	B	Unknown	Monitor
NB 5349 4970e	Traigh Geiraha	Dyke, Drystone		E	B	Unknown	Monitor
NB 5354 4965	Traigh Geiraha	Cultivation, Rigging		F	B	Pre Clearance	Monitor
NB54NW 01	Caisteal a' Mhorair	Stack enclosed by wall		B	B	Prehistoric	Monitor
NB 5373 4960	Gob Hais	Promontory Enclosure		B	B	Unknown	Monitor, survey (?)
NB 5366 4952	Gob Hais	Enclosure, Rectilinear, Stone and earth core, possible sheiling		B	B	Pre Clearance	Nil
NB 5372 4949a	Gob Hais	Enclosure, Habitational, Curvilinear, Turf and stone		B	B	Pre Clearance	Nil
NB 5372 4949b	Gob Hais	Enclosure, Habitational, Rectilinear, Turf and stone		B	B	Pre Clearance	Nil
NB 5375 4948	Gob Hais	Enclosure, Habitational, Rectilinear, Turf and stone		B	B	Pre Clearance	Nil
NB 5372 4946	Gob Hais	Field System		B	B	Pre Clearance	Nil
NB 5368 4945	Gob Hais	Enclosure, Habitational, Rectilinear, Turf and stone		B	B	Unknown	Nil
NB 5344 4910	Tolsta	Dyke, Stone and Turf		D	B	Post Medieval	Nil
NB54NW 04	Tolsta	Cemetery		B	B	Crofting	Nil

#### 5.32.4 *Overview of erosion*

This section can be split into four general zones of erosion including;

- the eroding/stable high cliffs from Dibadale to Traigh Geiraha (NB 241 to NB 243)
- the eroding and depositing sand and machair of Traigh Geiraha (NB 244)
- the stable headland of Gob Hais (NB 245)
- the generally depositing sandy beach, dune and machair system of Traigh Mhor at Tolsta (NB 246 to NB 247)

The first zone, which takes up over two-thirds of the section, represents the continuation of the eroding/stable high cliffs from the previous map sheet (see section 5.31.4). These eventually drop down into the sandy beach of Traigh Geiraha, backed by a small zone of dunes and more expansive, but topographically constrained, areas of machair. The zone displays signs of both limited erosion, with small-scale blowouts and eroding scars in semi-stable dunes, and more wide-spread deposition, with areas of embryonic dune formation and sand accretion against fence lines and bare rock. Ramsay and Brampton (1995, p27) remarked on the relative stability of the zone which was evident at the time of visit, but also highlighted the continued threat from human recreational use of the area and the high levels of rabbit activity. The machair has also produced some archaeological finds and sites including a prehistoric pottery scatter found earlier this century (NB54NW 02) and small scale structural remains eroding from the dunes located by this survey (NB 5341 4980 and sites centred on NB 5349 4970). Hence, this zone warrants regular monitoring.

The next zone represents the stable cliff line and headland of Gob Hais which separates the two beach and machair zones, and displays none of the erosion characteristics of much of the previous cliff line.

The final zone of Traigh Mhor consists of a long sandy lower beach immediately backed by a system of dunes which, though large, are in an early stage of development. Hence this zone represents one of the few zones in the study area of large-scale active deposition and accretion. However there are signs of limited erosion by grazing and rabbits within the dune system, which become more acute at the southern end of the section (NB 247) initiating limited blow outs and eroding scars in the sand. Again, Ramsay and Brampton (1995, p27) remarked on the relative stability of the zone which was

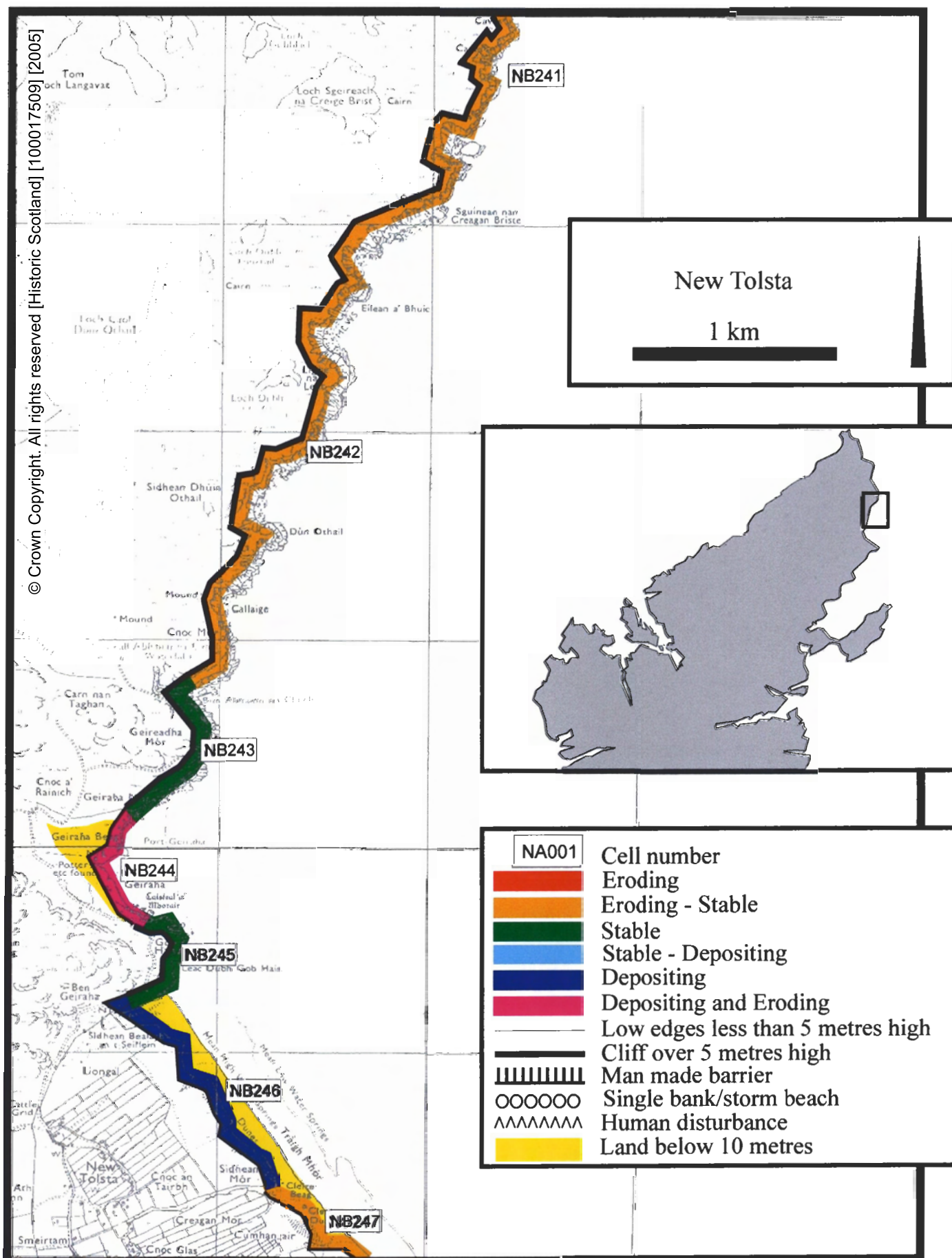
evident at the time of visit and also noted the relative erosion focus towards the southern end of the dunes. Hence, regular monitoring of the southern end of this zone is recommended, despite the relative lack of archaeology found to date.

#### **5.32.5 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 241	NB 561 558	B-Eroding/ Stable	Dibadale	Mainly Rock Platform	Glacial sand and Gravel	Gneiss	9015.084	Cliff over 5m.
NB 242	NB 546 525	B-Eroding/ Stable	Sguinean nan Creagan Briste	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	5539.046	Cliff over 5m.
NB 243	NB 538 504	C-Stable	Traigh Geiraha	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	744.822	Cliff over 5m.
NB 244	NB 534 499	F-Eroding/ Depositing	Traigh Geiraha	Mainly Sand	Wind Blown Sand	Gneiss	731.144	Low edge < 5m.
NB 245	NB 537 494	C-Stable	Gob Hais	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	935.258	Cliff over 5m.
NB 246	NB 538 488	E-Depositing	Tolsta	Mainly Sand	Wind Blown Sand	Gneiss	1269.310	Low edge < 5m.
NB 247	NB 543 481	B-Eroding/ Stable	Tolsta	Mainly Sand	Wind Blown Sand	Gneiss	415.471	Low edge < 5m.

**COASTAL EROSION ASSESSMENT (LEWIS)  
MAP SHEET NB 53 48/NB 57 54**

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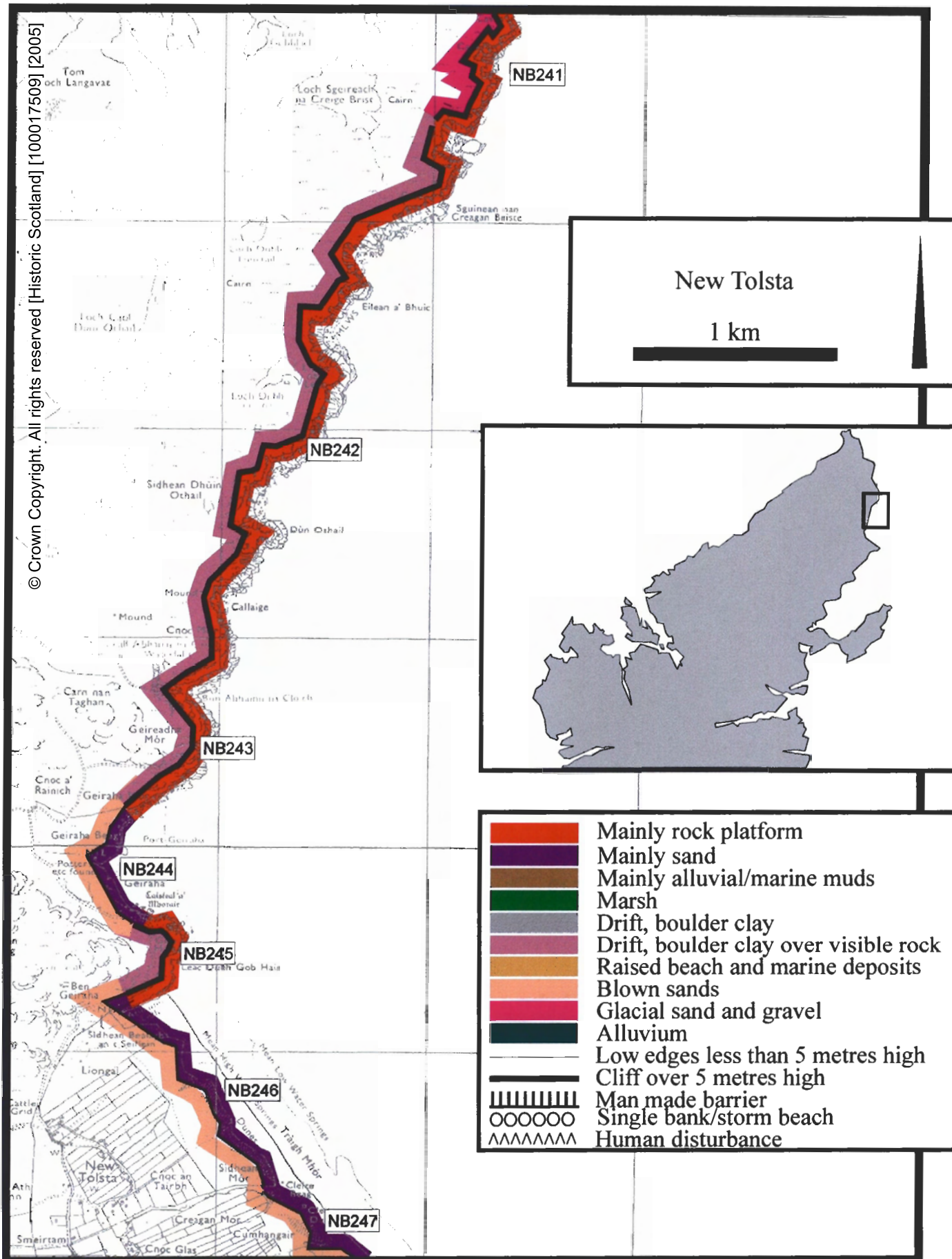


5.32.6 *Overview of coastal geomorphology*

The descriptions of the geomorphology will follow the breakdown of the section into the general erosion zones noted above. The first zone marks the continuation of the high cliffs of basement Lewisian Gneiss described in section 5.31.6. Traigh Geiraha consists of a gently sloping sand lower beach backed by a small zone of eroding and accreting dunes and a more widespread mature machair. Gob Hais consists of stable cliffs, presumably overlain with sporadic substrate of glacially derived and *in situ* weathered material. Traigh Mhor has a long gently sloping sandy lower and upper beach, backed by an accreting and developing dune system displaying embryonic, semi-stable and some stable dunes which are generally well-vegetated. Behind the dune system rises a steep machair zone.

**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 53 48/NB 57 54**

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5.33 MAP SHEET NB 52 44/NB 57 47, TOLSTA HEAD

5.33.1 Overview of cultural heritage

5.33.1.1 Number of monuments

Scheduled	- 0	
Recorded in the NMRS	- 4(5)	[NB54NW 04, NB54NW 27, NB54NE 01, NB54NE 02, (NB54NW 17)]
Others	- 30	
<b>Total</b>	<b>- 34</b>	

5.33.1.2 Number of site state occurrences

Eroding (A)	- 0
Eroding/stable (B)	- 7
Stable (C)	- 27

5.33.1.3 Number of response occurrences

Nil	- 29
Monitor, (Baseline survey)	- 7
Detailed survey	- 4
Sample	- 0

5.33.2 Description of cultural heritage

This map sheet covers the township of North Tolsta, the smaller settlement of Glen Tolsta and is characterised by high sea cliffs of more than 5.0 metres backed by rough grazing and moorland.

Almost all of the sites recorded date to the post medieval, pre-crofting and crofting phases of settlement. The NMRS records three sites of this period, these are the Tolsta cemetery (NB54NW 04), a large enclosure at North Tolsta (NB54NW 28) and sheilings to the south of North Tolsta (NB54NW 17).

Of the sites of unknown date four are of interest, including the promontory enclosure (NB 5519 4672), with bivalate construction enclosing between 1 and 2 hectares on the south side of Tolsta head and the promontory enclosure at Glen Tolsta (NB 5228 4435), a site of less than 1 hectare. Also of interest are a settlement mound (NB 5225 4434) and a curvilinear habitation enclosure (NB 5219 4440) both at Glen Tolsta.

One other site should be mentioned here, the enclosing walls (NB54NE 01) that cross the neck of Tolsta Head. As yet the authors have not visited this site (though a survey team has without

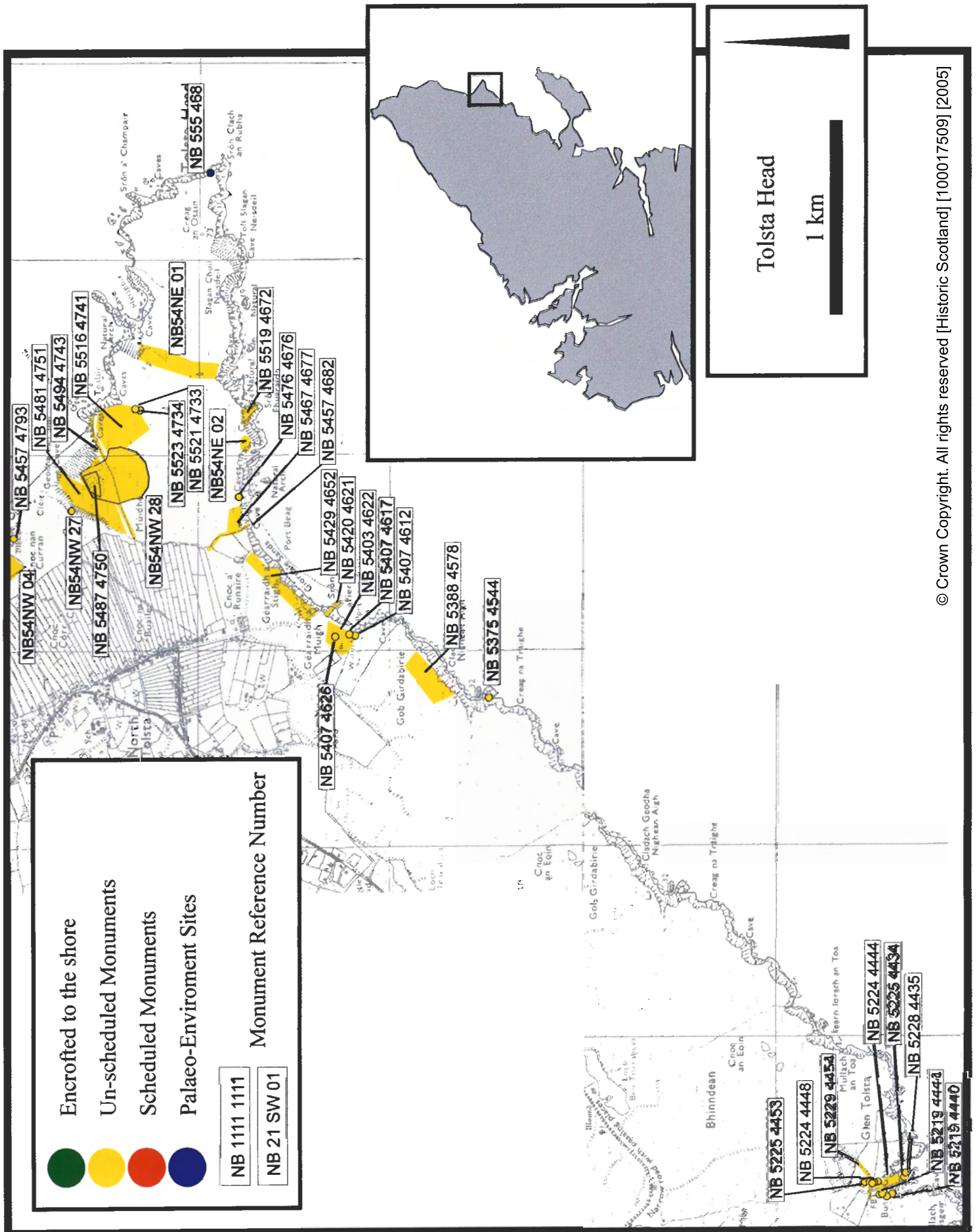
## COASTAL EROSION ASSESSMENT (LEWIS)

comment), it is possible that this site creates a large promontory enclosure of Tolsta Head, that would have an enclosed an area of over 70 hectares, easily the largest of this type in the Western Isles.

### 5.33.3 Gazetteer of cultural heritage

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB54NW 04	Tolsta	Cemetery		B	B	Crofting	Nil
NB 5457 4793	Tolsta	Settlement Mound	Bone, Animal	B	B	Unknown	Monitor
NB54NW 27	Tolsta	Building		B	B	Unknown	Monitor, survey
NB 5487 4750	Tolsta	Field System		C	C	Post Medieval	Nil
NB 5481 4751	Tolsta	Cultivation, Rigging		C	C	Post Medieval	Nil
NB 5494 4743	Tolsta	Dyke, Stone and Turf		C	C	Post Medieval	Nil
NB54NW 28	Tolsta	Enclosure, walls		C	C	Post Medieval	Nil
NB 5516 4741	Tolsta	Field System		C	C	Pre Clearance	Nil
NB 5521 4733	Tolsta	Enclosure, Habitational, Curvilinear, Turf and stone		C	C	Pre Clearance	Nil
NB 5523 4734	Tolsta	Enclosure, Habitational, Curvilinear, Turf and stone		C	C	Pre Clearance	Nil
NB54NE 01	Tolsta Head	Wall, promontory enclosure?		B	B	Unknown	Monitor, survey
NB 5519 4672	Tolsta Head	Promontory Enclosure, bi-vallate		C	C	Unknown	Monitor, survey (?)
NB54NE 02	Tolsta Head	Enclosure		C	C	Unknown	Monitor
NB 5476 4676	Tolsta	Settlement		C	C	Unknown	Nil
NB 5467 4677	Tolsta	Field System		C	C	Pre Clearance	Nil
NB 5457 4682	Tolsta	Dyke, Stone and Turf		B	B	Crofting	Nil
NB 5429 4652	Tolsta	Cultivation, Rigging		C	C	Pre Clearance	Nil
NB 5420 4621	Tolsta	Other		C	C	Modern	Nil
NB 5403 4622	Tolsta	Cultivation, Rigging		C	C	Pre Clearance	Nil
NB 5407 4626 (NB54NW 17?)	Tolsta	Enclosure, Rectilinear, Turf and stone		C	C	Pre Clearance	Nil
NB 5407 4617 (NB54NW 17?)	Tolsta	Enclosure, Rectilinear, Turf and stone		C	C	Pre Clearance	Nil
NB 5407 4612 (NB54NW 17?)	Tolsta	Enclosure, Rectilinear, Turf and stone		C	C	Pre Clearance	Nil
NB 5388 4578	Tolsta	Cultivation, Rigging		C	C	Pre Clearance	Nil
NB 5375 4544	Tolsta	Enclosure, Curvilinear, Turf		B	B	Unknown	Monitor
NB 5228 4435	Glen Tolsta	Promontory Enclosure		C	C	Unknown	Monitor, survey

**COASTAL EROSION ASSESSMENT (LEWIS)  
MAP SHEET NB 52 44/NB 57 48**



## COASTAL EROSION ASSESSMENT (LEWIS)

NB 5225 4434	Glen Tolsta	Settlement Mound		C	C	Unknown	Nil
NB 5224 4444	Glen Tolsta	Field System		C	C	Crofting	Nil
NB 5224 4448a	Glen Tolsta	Enclosure, Habitational, Rectilinear, Drystone		C	C	Crofting	Nil
NB 5224 4448b	Glen Tolsta	Blackhouse		C	C	Crofting	Nil
NB 5224 4448c	Glen Tolsta	Blackhouse		C	C	Crofting	Nil
NB 5225 4453	Glen Tolsta	Enclosure, Habitational, Rectilinear, Drystone		C	C	Modern	Nil
NB 5229 4454	Glen Tolsta	Trackway		C	C	Modern	Nil
NB 5219 4444a	Tolsta	Dyke		B	B	Unknown	Nil
NB 5219 4444b	Glen Tolsta	Enclosure, Curvilinear, Turf and stone		C	C	Post Medieval	Nil
NB 5219 4440a	Glen Tolsta	Blackhouse		C	C	Post Medieval	Nil
NB 5219 4440b	Glen Tolsta	Enclosure, Habitational, Curvilinear, Turf and stone		C	C	Post Medieval	Nil

### 5.33.4 Gazetteer of palaeo-environment sites

Label	Locale	Site Type	Matrix State	Site State	Recommendations
NB 555 468	Tolsta Head	middle Devensian inter stadial deposits	A	A	Monitor

#### 5.33.5 *Overview of erosion*

This section can be split into four general zones of erosion including;

- the remainder of the generally stable beach of Traigh Mhor (NB 248)
- the stable high cliffs of Tolsta Head (NB 249 to NB 250)
- the stable beach of Giordale Sands (NB 251)
- the stable high cliffs to Glen Tolsta (NB 252)

The first zone marks the continuation of the sand and machair zone of Traigh Mhor, with the final stretch generally stable, though there are signs of limited sand accretion within the final remnants of the dune system and the bare rock which back the beach.

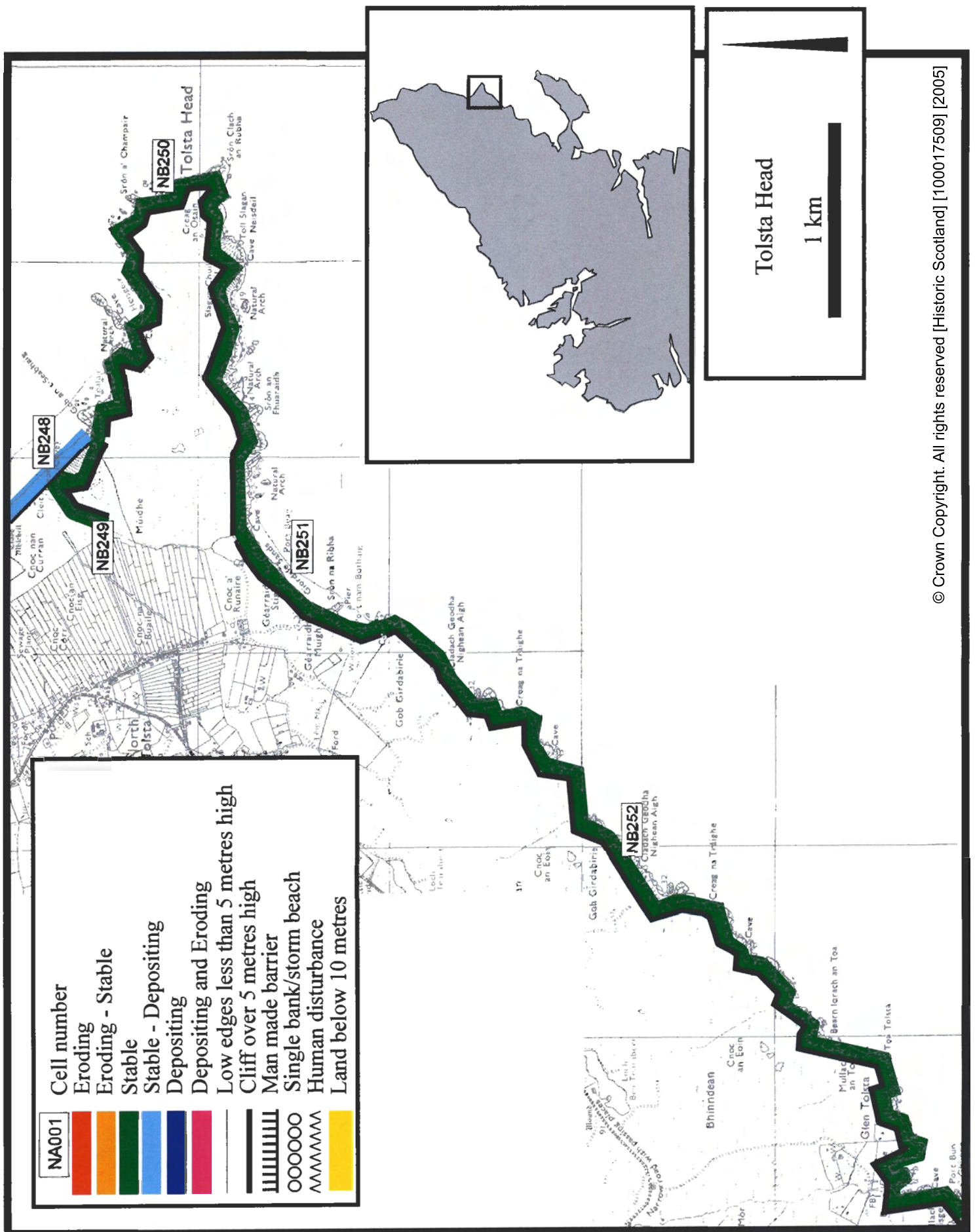
The next zone starts from behind the previous zone, with stable cliffs covered in stable machair. This is gradually replaced by the more common stable cliff line of eastern Lewis which continues round Tolsta head, above Giordale Sands and on to the end of the section at Glen Tolsta. The sandy beach of Giordale sands displayed neither signs of erosion or accretion, unlike the cliff slips noted by Ramsay and Brampton (1995, p26).



**5.33.6 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 248	NB 548 477	D-Stable/ Depositing	Tolsta	Mainly Sand	Wind Blown Sand	Gneiss	856.566	Low edge < 5m.
NB 249	NB 548 475	C-Stable	Tolsta	Mainly Rock Platform	Wind Blown Sand	Gneiss	784.986	Cliff over 5m.
NB 250	NB 554 469	C-Stable	Tolsta head	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	5481.974	Cliff over 5m.
NB 251	NB 543 463	C-Stable	Tolsta	Mainly Sand	Wind Blown Sand	Gneiss	998.117	Cliff over 5m.
NB 252	NB 537 454	C-Stable	Tolsta to Glen Tolsta	Mainly Rock Platform	Glacial sand and gravel	Gneiss	1967.576	Cliff over 5m.

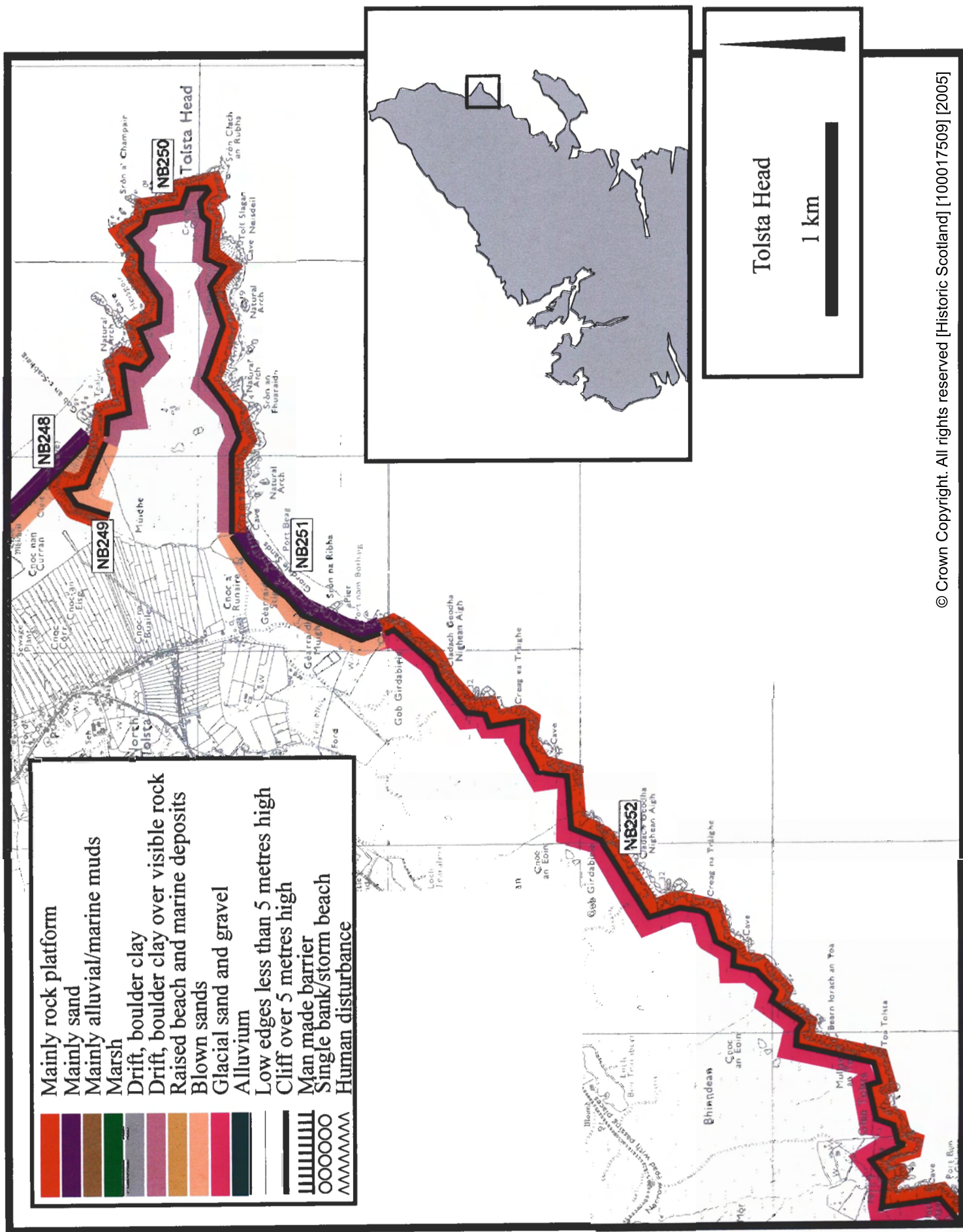
**COASTAL EROSION ASSESSMENT(LEWIS)**  
**MAP SHEET NB 52 44X/NB 57 48**



5.33.6 *Overview of coastal geomorphology*

Much of this section is covered by stable high cliffs of basement Lewisian Gneiss, with only the remainder of Traigh Mhor (see section 5.32.5) and Giordale Sands displaying stretches of mainly sand. The basement rock is generally overlain by deposits of glacially derived substrate and *in situ* weathered material. Deposits within the substrate overlying the rock platform at Tolsta Head (palaeo-environment site NB 557 468), have been logged and studied in detail by von Weymarn and Edwards (1973) and Birnie (1983) who identified organic lake detritus overlain by till. Palynological, plant macrofossil and diatom studies have been carried out on the lake sediments, which broadly indicate an environment similar to cool maritime analogues. A radiocarbon date from the uppermost detrital member of  $27,333 \pm 240$  bp (SRR-87), points to the environmental data relating to a Middle Devensian interstadial, which Gordon and Sutherland (1993, p423-5) on comparison with other sites of similar age concluded that "Tolsta Head remains the most important interstadial site of this age in Scotland."

**COASTAL EROSION ASSESSMENT(LEWIS)**  
**MAP SHEET NB 52 44X/NB 57 48**





## 5.34 MAP SHEET NB 48 40/NB 53 44, GLEN TOLSTA TO TRAIGH REBAC

## 5.34.1 Overview of cultural heritage

## 5.34.1.1 Number of monuments

Scheduled	- 3	[5343, 5701 and 5740]
Recorded in the NMRS	- 6	[NB54SW 01, NB54SW 03, NB54SW 01, NB44SE 04, NB44SE 03 and NB44SE 07]
Others	- 11	
<b>Total</b>	<b>- 17</b>	

## 5.34.1.2 Number of site state occurrences

Eroding (A)	- 4
Eroding/stable (B)	- 3
Stable (C)	- 9

## 5.34.1.3 Number of response occurrences

Nil	- 5
Monitor, (Baseline survey)	- 10
Detailed survey	- 5
Sample	- 1
Find site location	- 2

## 5.34.2 Description of cultural heritage

This map sheet covers the townships of Gress and Back and is characterised by high cliffs of more than 5.0 metres, to the north, backed by grazing land, and by Gress sands, backed by croft lands to the south.

Three of the sites recorded here are Scheduled Ancient Monuments (NB44SE 04 - number 5701, NB44SE 09 - number 5740 and NB44SE 03 - number 5343). Of these the first two are recorded as souterrains, though both sites are buried under the beach of Gress sands and could not be located during this survey. This site type is rare on Lewis occurring on only six other occasions (to the authors knowledge), five outwith the bounds of this survey and in three cases within proximity to ecclesiastical monuments (see NA92SE 02 at Mealista in immediate proximity to a chapel and a nunnery (NA92SE 01 and 03). It is also possible that other structures such as corbeled buildings and galleries of CARHs may be mistaken for such a site. (or *vice versa*)

The third scheduled site (NB44SE 03) is that of St Aula's Church which is situated immediately behind the beach in the dunes of Gress sands and is stable, warranting no further research at this time.

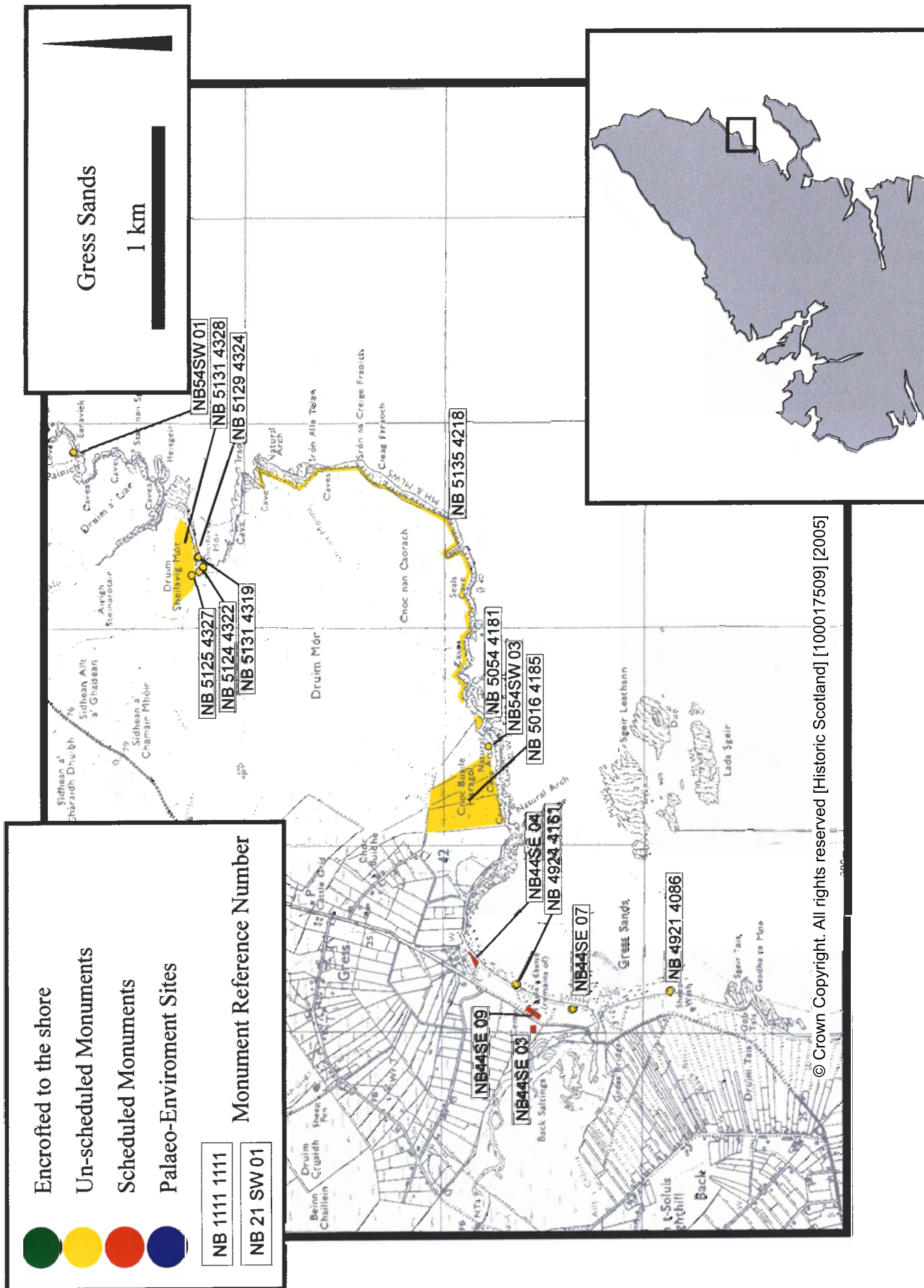


Elsewhere on this map sheet are two sites of interest that have been lost due to erosion. These are the possible CARH at Earavik (NB54SW 01) and a kitchen midden at Sron Ruadh (NB54SW 04).

### 5.34.3 Gazetteer of cultural heritage

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB54SW 01	Earavik	Possible CARH		B		Unknown	Find site location
NB 5131 4328	Sheilavig Mor	Cultivation, Rigging		A	C	Medieval	Monitor, survey (?)
NB 5129 4324	Tolsta	Enclosure, Habitational, Curvilinear, Stone and earth core		C	C	Medieval	Monitor, survey (?)
NB 5125 4327	Tolsta	Enclosure, Curvilinear, Turf and stone		C	C	Medieval	Monitor, survey (?)
NB 5124 4322a	Tolsta	Enclosure, Habitational, Curvilinear, Turf and stone		C	C	Medieval	Monitor, survey (?)
NB 5124 4322b	Tolsta	Enclosure, Habitational, Rectilinear, Turf and stone		C	C	Medieval	Monitor, survey (?)
NB 5131 4319	Sheilavig Mor	Stone Alignment		B	B	Unknown	Monitor (?)
NB 5135 4218	Druim Mor	Dyke, Turf		B	B	Unknown	Nil
NB 5054 4181	Coll	Field System		A	A	Post Medieval	Nil
NB 5016 4185	Coll	Field System		B	B	Crofting	Nil
NB54SW 03	Sron Ruadh		Midden, Kitchen	A	A	Unknown	Find site location
NB44SE 04	Gress	souterrain (buried)		B	C	Iron age	Monitor area
NB 4924 4161	Gress	Cairn		A	A	Unknown	Nil
NB44SE 03	St. Aula's Church, Gress	Church		C	C	Pre Clearance	Nil
NB44SE 09	Gress	souterrain (lost)		C	C	Iron age	Monitor area
NB44SE 07	Gress		Ceramic/pottery	C	C	Prehistoric	Monitor area
NB 4921 4086	Gress	Stone Alignment	Midden, Kitchen	A	A	Unknown	Monitor, sample (?)

**COASTAL EROSION ASSESSMENT(LEWIS)**  
**MAP SHEET NB 48 40/NB 53 44**





#### 5.34.4 Overview of erosion

This section can be split up into five general zones of erosion including;

- the stable cliffs south of Glen Tolsta (NB 253)
- the eroding gorge/inlet north of Sheilavig Mor (NB 254)
- the eroding/stable sand and shingle beach of Sheilavig Mor (NB 255)
- the generally eroding cliffs of Druim Mor (NB 256 to NB 257)
- the generally eroding sand and shingle beaches of Gress Sands and Traigh Rebac (NB 258 to NB 260)

The first zone represents the continuation of the stable cliffs from the previous map sheet (see section 5.33.4). The erosion regime then switches to that of severe erosion with the deeply incised gorge and resulting inlet north of Sheilavig Mor, with eroding upper cliff faces of up to 5 m. actively eroding. The cliffs then give way to the sand and shingle beach and limited machair of Sheilavig Mor. The zone is generally stable but has a number of signs of erosion including small-scale erosion scars from direct wave action beyond the shingle ridge and pockets of wind deflation. There is an abandoned village of curvilinear turf and stone buildings of possible Medieval or pre-Clearance date within the machair behind the beach. These presently show no signs of erosion but may be subsumed into any expanding wind deflation hollows. In principle, this zone should be regular monitored but the inaccessibility of the area may make this difficult.

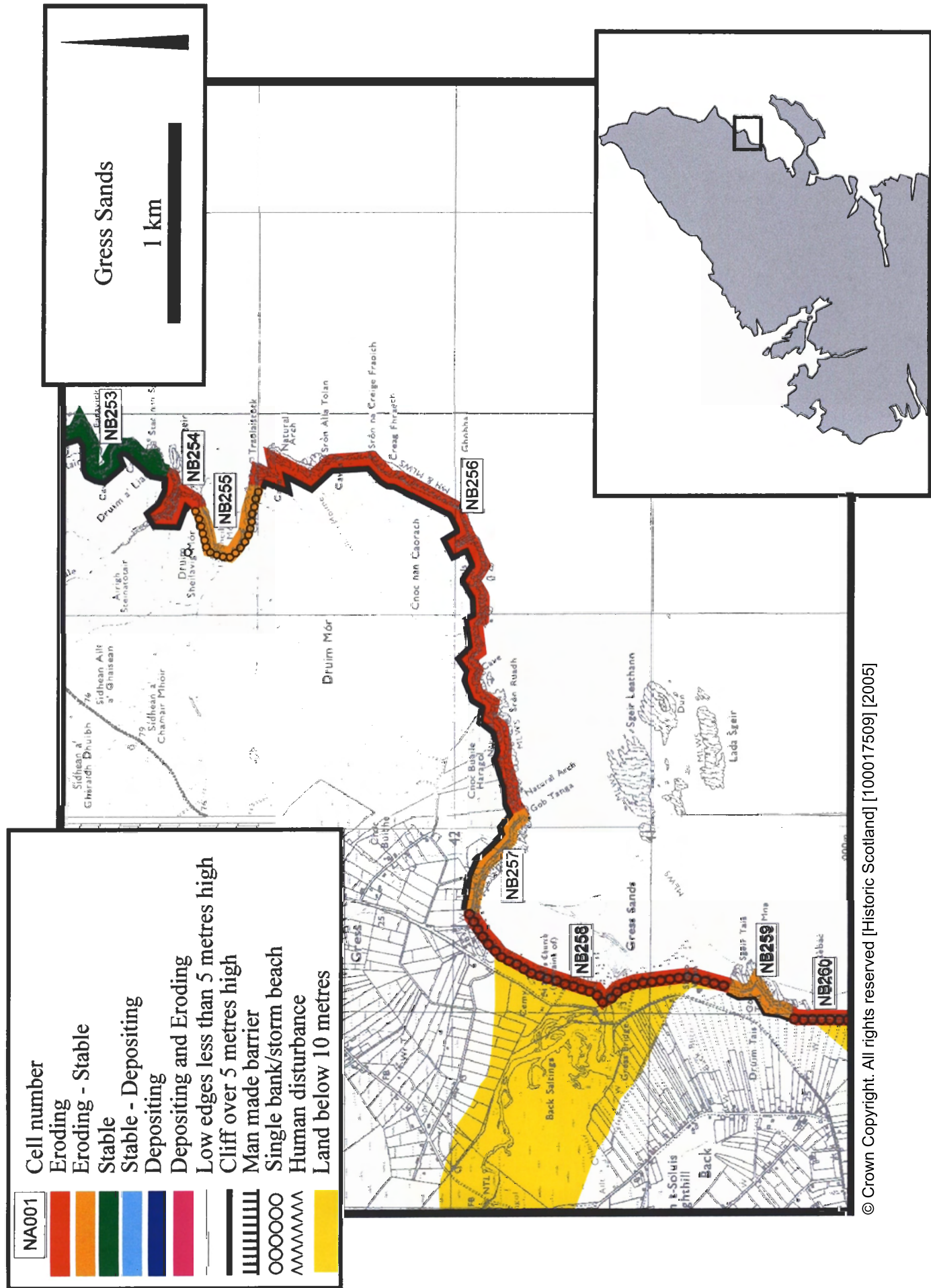
The next zone returns to eroding high cliff with cliff slips and block faulting visible. The final stretch of this zone becomes more stable, due to the its more sheltered aspect. The final zone consists of the sand and shingle beaches with a limited dune system backing Gress Sands before reaching the SSSI of Back Saltings. A number of erosion focuses, highlighted by Ramsay and Brampton (1995, pp 24-5) are still evident along the face of the dunes. At the northern end of Gress Sands human activity has initiated a blow out with active sand deflation occurring, whilst the dunes of the rest of the beach are being undercut and eroded by direct storm action, wind deflation and alluvial erosion from the Gress river. Traigh Rebac is more protected with a continuous shingle ridge but the till cliffs behind are still undergoing active erosion during storms. The archaeological sites discovered in the past,

some of them prehistoric (i.e. NB44SE 07), and the structural remains and midden discovered by the present survey (NB 4921 4086) highlight the need for this zone to be monitored regularly.

**5.34.5 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 253	NB 523 442	C-Stable	Glen Tolsta	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	3868.988	Cliff over 5 m.
NB 254	NB 515 433	A-Eroding	Sheilavig Mor	Mainly Rock Platform	Glacial sand and Gravel	New Red Sandstone	634.090	Cliff over 5 m.
NB 255	NB 514 430	B-Eroding/ Stable	Sheilavig Mor	Mainly Sand	Wind Blown Sand	New Red Sandstone	215.277	Shingle / storm bank
NB 256	NB 510 420	A-Eroding	Druim Mor	Mainly Rock Platform	Glacial sand and Gravel	New Red Sandstone	3196.062	Cliff over 5 m.
NB 257	NB 498 417	B-Eroding/ Stable	Gress	Mainly Rock Platform	Drift, Boulder clay over visible rock	New Red Sandstone	581.779	Cliff over 5m.
NB 258	NB 492 413	A-Eroding	Gress Sands	Mainly Sand	Wind Blown Sand	New Red Sandstone	1408.314	Shingle / storm bank
NB 259	NB 490 404	B-Eroding/ Stable	Gob Tais	Mainly Rock Platform	Wind Blown Sand	New Red Sandstone	416.897	Low edge < 5m.
NB 260	NB 489 401	A-Eroding	Traigh Rebac	Mainly Sand	Wind Blown Sand	New Red Sandstone	267.639	Shingle / storm bank

**COASTAL EROSION ASSESSMENT(LEWIS)**  
**MAP SHEET NB 48 40/NB 53 44**





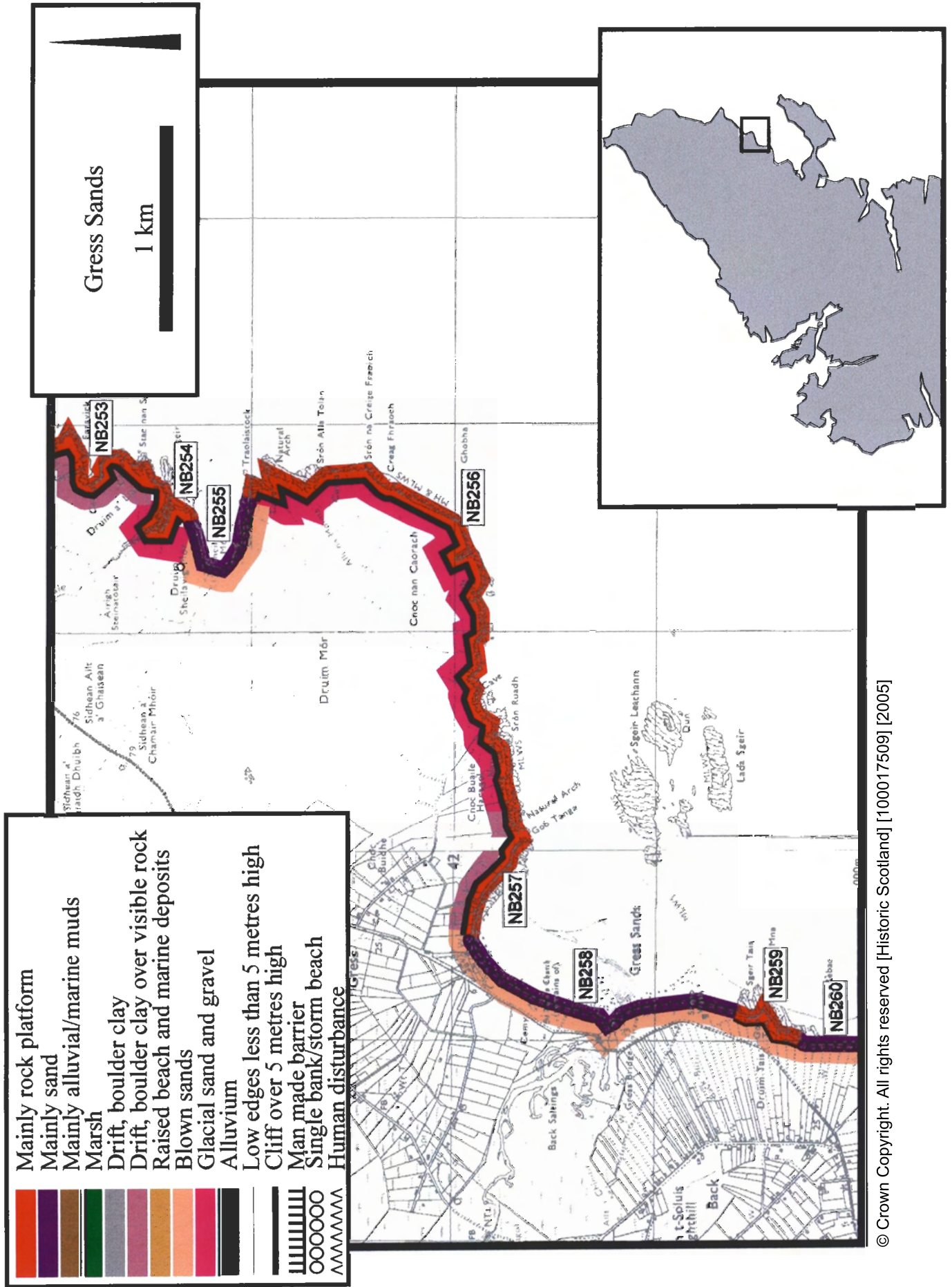
**5.34.6 Overview of coastal geomorphology**

The descriptions of the geomorphology will follow the breakdown of the section into the general erosion zones above. The first zone marks the continuation of the high cliffs of basement Lewisian Gneiss described in section 5.33.6 above. There is then a marked switch between both the erosion regime and the underlying geology with the erosion unit NB 254 representing severe erosion and incision of till cliffs and conglomerate, to form a gorge from along the course of the river Allt Raonadail. It is also at this point that the solid geology changes from Lewisian Gneiss to Permian and Triassic undifferentiated New Red Sandstone, which is a much softer rock than the Gneiss.

The next zone of Sheilavig Mor consists of a sandy beach, backed by a low shingle ridge and discontinuous machair behind and surrounding the bay. A small river also dissects this beach, but this has not changed its course for centuries judging by its configuration in relation to bedrock knolls and the abandoned settlement.

The next zone rises to eroding high cliff of Permian and Triassic undifferentiated New Red Sandstone with capping till and conglomerate before falling down to the sand, shingle and dune systems of Gress Sands and Traigh Rebac. The stretch of dunes down to the mouth of Gress river is fronted by a discontinuous shingle ridge and sand foreshore, whilst the stretch of sand south of the river has consists of only sand and dune with a progressively rising backdrop of till cliffs. These till cliffs extend to Traigh Rebac with its sand foreshore and wide shingle ridge.

**COASTAL EROSION ASSESSMENT(LEWIS)**  
**MAP SHEET NB 48 40/NB 53 44**





**5.35 MAP SHEET NB 45 36/NB 50 40, TRAIGH REBAC TO BROAD BAY**

**5.35.1 Overview of cultural heritage**

**5.35.1.1 Number of monuments**

Scheduled	- 0	
Recorded in the NMRS	- 2	[NB43NE 06 and NB43NE 02]
Others	- 9	
<b>Total</b>	<b>- 11</b>	

**5.35.1.2 Number of site state occurrences**

Eroding (A)	- 8
Eroding/stable (B)	- 1
Stable (C)	- 2

**5.35.1.3 Number of response occurrences**

Nil	- 6
Monitor, (Baseline survey)	- 5
Detailed survey	- 1
Sample	- 1

**5.35.2 Description of cultural heritage**

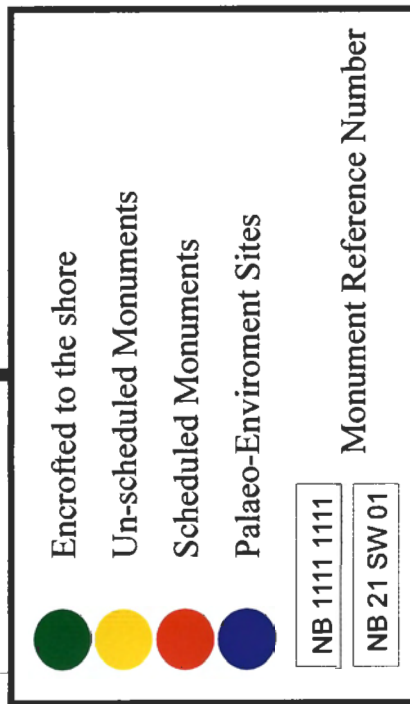
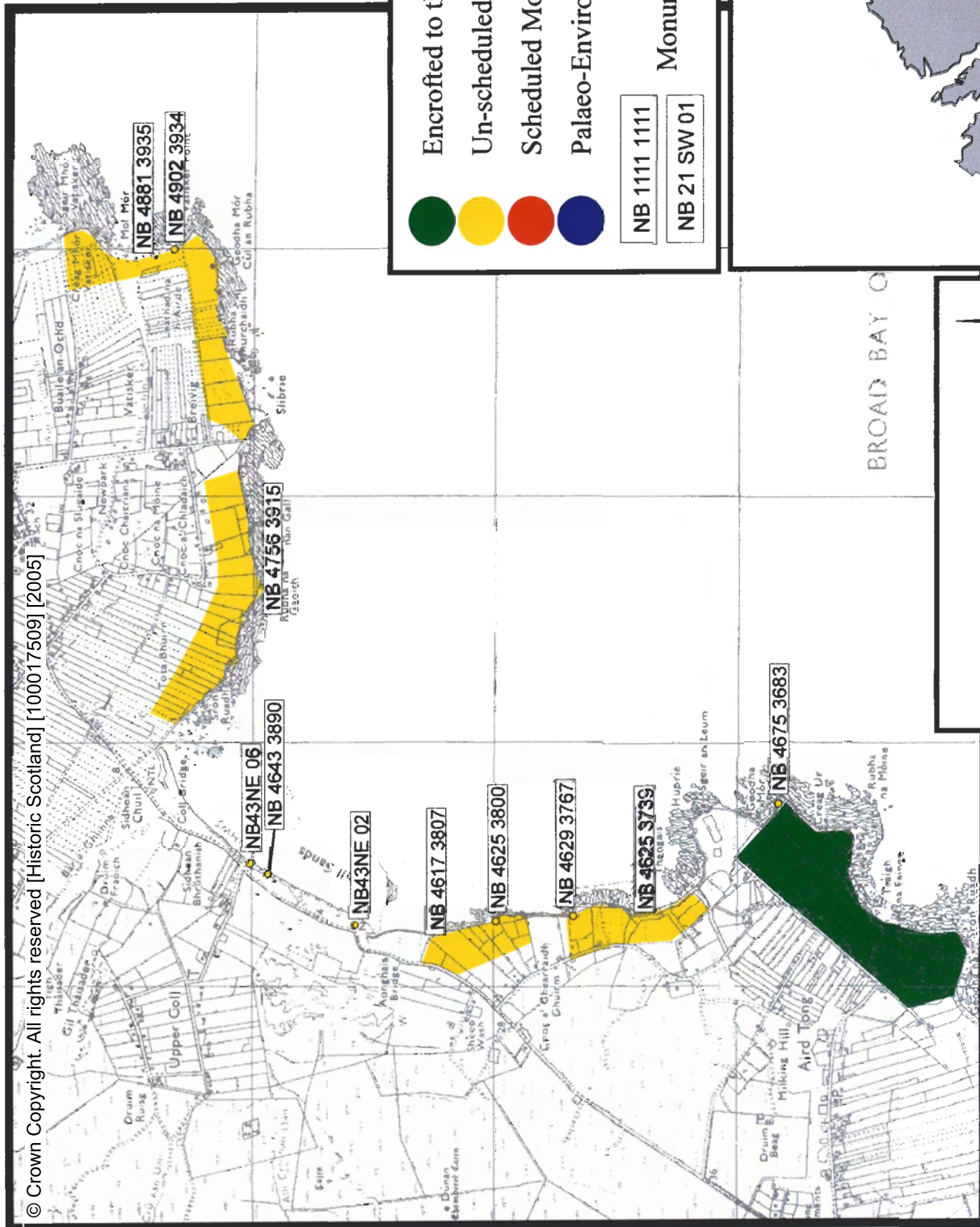
This map sheet covers the townships of Coll, Back and Tong and is characterised by a mixture of low eroding edges of less than 5.0 metres behind rock cut platforms and the beach of Coll Sands. Unlike other sandy beaches on the east coast Coll Sands is actively eroding along with most of the rest of the coastline on this map sheet, consequently more than 90% of the sites recorded here are eroding.

Three sites are believed to be prehistoric in date. These are the burial and shell midden on Coll Sands (NB43NE 06), a scatter of pottery on Coll Sands (NB43NE 02) and the promontory enclosure at Tong (NB 4675 3683) which encloses an area of less than 1 hectare. Also of interest, though, its date is uncertain is a midden including human bone noted eroding on Coll Sands (NB 4643 3890) and given the proximity to NB43NE 06 it might be that both sites are of similar date.

**5.35.3 Gazetteer of cultural heritage**

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB 4902 3934	Mol Mor Vatisker	Stone Alignment		A	A	Unknown	Monitor
NB 4881 3935	Vatisker	Field System		A	A	Post Medieval	Nil
NB 4756 3915	Tota Bhuirn	Field System		A	A	Post Medieval	Nil
NB43NE 06	Coll Sands	Burial	Shell midden	A	A	Prehistoric	Monitor area
NB 4643 3890	Coll Sands		Midden, Shell and human bone	A	A	Unknown	Monitor, sample
NB43NE 02	Coll Sands		Ceramic/pottery	A	A	Prehistoric	Monitor area
NB 4625 3800	Back	Cell		B	C	Post Medieval	Nil
NB 4617 3807	Back	Cultivation, Rigging		A	B	Post Medieval	Nil
NB 4629 3767	Back	Cairn, clearance		B	C	Post Medieval	Nil
NB 4625 3739	Back	Cultivation, Rigging		A	A	Post Medieval	Nil
NB 4675 3683	Tonga	Promontory Enclosure		A	A	Prehistoric	Monitor, survey (?)

COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 45 36/NB 50 40



BROAD BAY O

Coll Sands

1 km



#### **5.35.4 Overview of erosion**

This section can be split into four general zones of erosion including;

- the remainder of the eroding beach of Traigh Rebac (NB 261)
- the eroding cliffs from Traigh Rebac to Coll Sands (NB 262)
- the eroding sand and dunes of Coll Sands (NB 263)
- the eroding/stable cliffs east of Tong (NB 264)

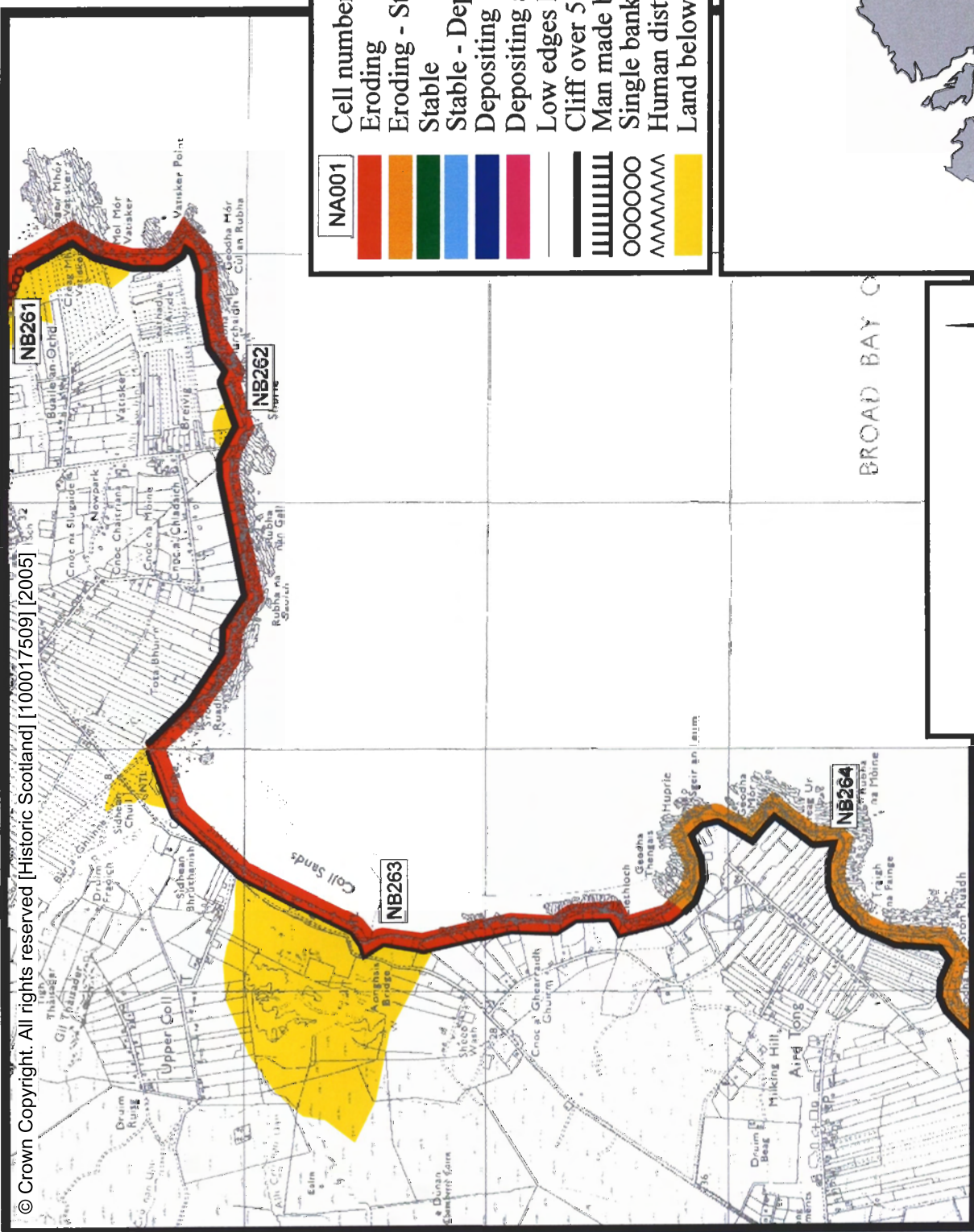
The first zone represents the continuation of the eroding beach of Traigh Rebac from the previous map sheet (see section 5.34.4). The second zone consists of eroding till cliffs, with cliff slips and deep erosion scars. Coll sands are then reached, which at the time of visit showed no sign of the shingle ridge noted by Ramsay and Brampton (1995, p24). Presumably this was due to windblown sand covering the ridge suggesting relative stability and sand accretion. However, the zone was noted as eroding due to the aeolian erosion of the dune system behind, which contained small but numerous blowouts and sand deflation hollows, and the continued erosion of the conglomerate outcrop within the beach system (Ramsay and Brampton 1995, p23).

The archaeological sites discovered in the past, some of them prehistoric (i.e. NB43NE 02), and the midden discovered by the present survey (NB 4643 3890) highlight the need for this zone to be monitored regularly. The final zone returns to till cliffs, though this stretch is not eroding to the extent of the similar zones to the north.

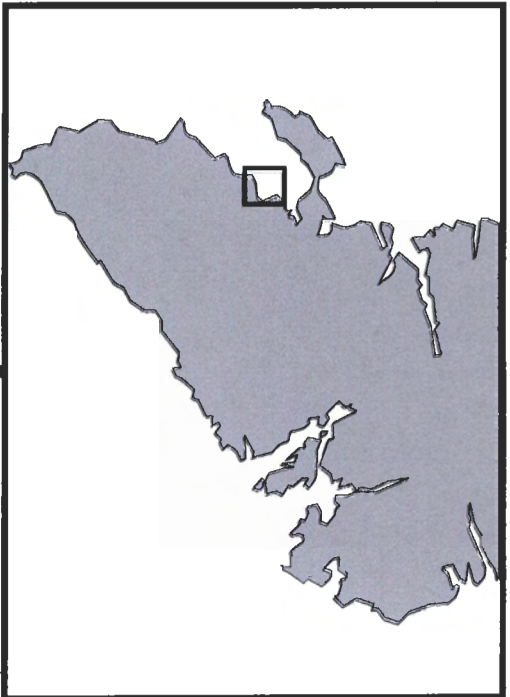
#### **5.35.5 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 261	NB 490 399	A-Eroding	Traigh Rebac	Mainly Sand	Wind Blown Sand	New Red Sandstone	183.626	Storm / shingle ridge
NB 262	NB 483 392	A-Eroding	Vatisker	Mainly Rock Platform	Glacial sand and Gravel	New Red Sandstone	2636.369	Cliff over 5 m.
NB 263	NB 462 379	A-Eroding	Coll Sands	Mainly Sand	Drift, Boulder clay over visible rock	New Red Sandstone	1374.034	Low edge < 5m.
NB 264	NB 464 366	B-Eroding/ Stable	Aird Thunga	Mainly Rock Platform	Drift, Boulder clay over visible rock	New Red Sandstone	2207.090	Cliff over 5m.

COASTAL EROSION ASSESSMENT (LEWIS)  
MAP SHEET NB 45 36/NB 50 40



Cell number	NA001
Eroding	[Red box]
Eroding - Stable	[Orange box]
Stable	[Green box]
Stable - Depositing	[Blue box]
Depositing	[Dark blue box]
Depositing and Eroding	[Pink box]
Low edges less than 5 metres high	[Thin black line]
Cliff over 5 metres high	[Thick black line]
Man made barrier	[Hatched line]
Single bank/storm beach	[Wavy line]
Human disturbance	[Dashed line]
Land below 10 metres	[Yellow box]



BROAD BAY C

Coll Sands

1 km

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**5.35.6 Overview of coastal geomorphology**

The descriptions of the geomorphology will follow the breakdown of the section into the general erosion zones above. The first zone marks the continuation of the sand and shingle beach of Traigh Rebac (see section 5.34.6). This gives way to the till and conglomerate cliffs resting on top of the basement Permian and Triassic undifferentiated New Red Sandstone. The next zone represents the sand and dune systems of Coll sands. The sandy intertidal and upper and lower beaches are backed by a zone of stable dunes undergoing erosion. Two rivers dissect the beach, which add to the limited erosion. The final zone returns to conglomerate and till cliffs overlying basement Permian and Triassic undifferentiated New Red Sandstone.







## 5.36 MAP SHEET NB 44 31/NB 48 36, BROAD BAY

## 5.36.1 Overview of cultural heritage

## 5.36.1.1 Number of monuments

Scheduled	- 0	
Recorded in the NMRS	- 2	[NB43NW 03 and NB43SE 09]
Others	- 24	
<b>Total</b>	<b>- 26</b>	

## 5.35.1.2 Number of site state occurrences

Eroding (A)	- 15
Eroding/stable (B)	- 2
Stable (C)	- 9

## 5.36.1.3 Number of response occurrences

Nil	- 10
Monitor, (Baseline survey)	- 15
Detailed survey	- 3
Sample	- 0
Excavate	- 1

## 5.36.2 Description of cultural heritage

This map sheet covers the area known as Broad Bay and includes the townships of Melbost Branahuie and Sandwick. It is dominated by the Stornoway Airport (NB 4500 3350) which dates to before World War 2 as an aerodrome and as a modern passenger airport has lead to large areas of the eroding beach sections on its north edge being protected with walling. To the north of the airport is an area known as Melbost Sands is backed by tidal mudflats that are actively eroding.

Of the sites recorded on this map sheet most are thought to date to the post medieval, pre-crofting and crofting phases of settlement. Three stand out as being of earlier date, these include settlement mound at Laxadale (NB 4418 3523) which is thought, on the basis of artefacts recovered, to be of Norse date. There are also two promontory enclosures recorded, one is bivalate (NB 4691 3341) and encloses between 2 and 3 hectares, the second (NB 4721 3298) encloses less than 1 hectare.

Of the other sites recorded here there are several of interest that as yet remain undated, these include the cell at Tong (NB 4403 3598), a burial at Branahuie (NB43SE 09) and a second settlement mound at Laxadale (NB 4418 3523) without any artefactual evidence to help in dating.

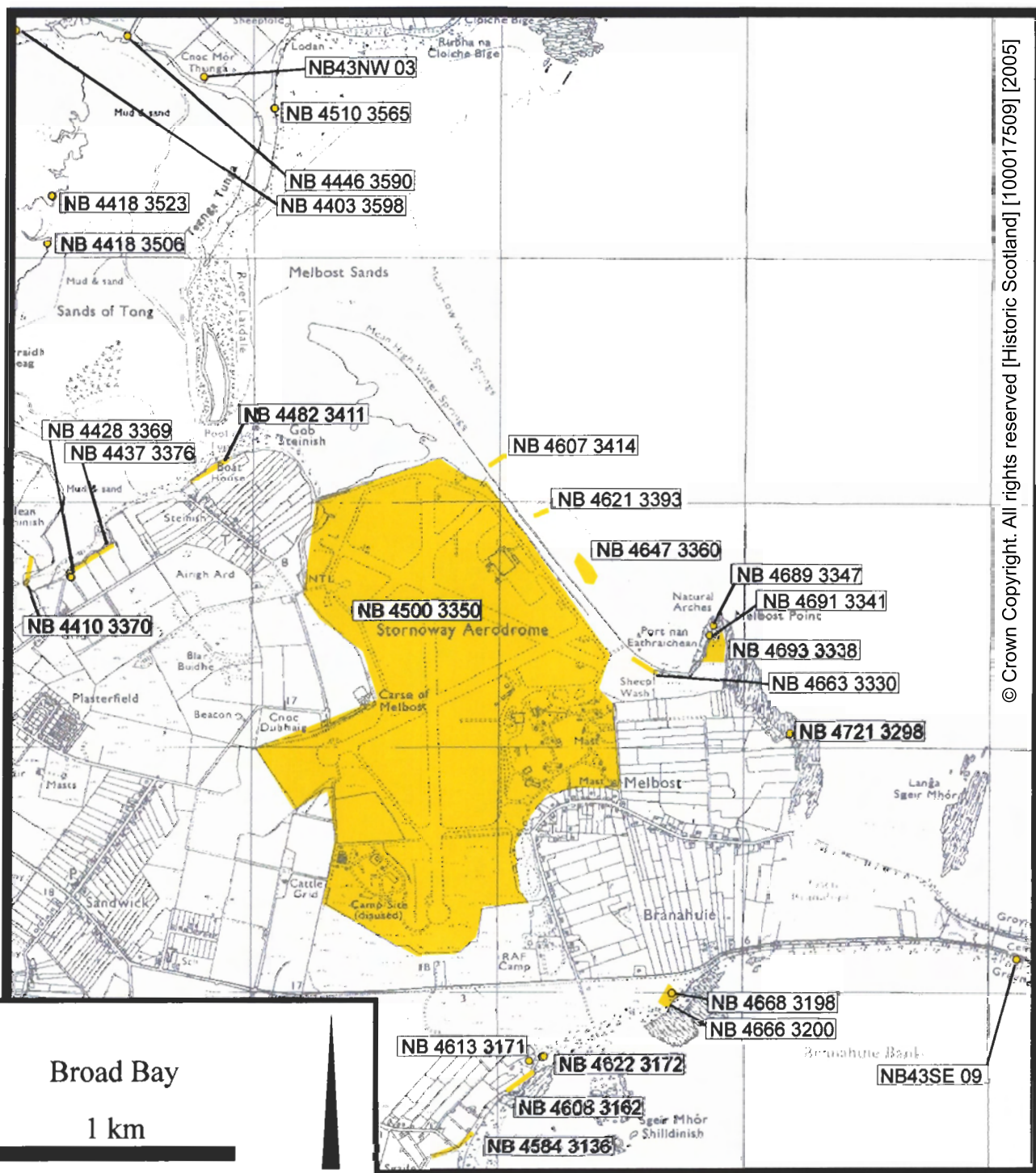


Several modern sites have also been recorded that are typical of the Stornoway area. These sites are mostly dated to the second World War and are related to the defence of the port, town and Aerodrome. They include the gun emplacements at NB 4510 3565 and the modern hexagonal enclosures at NB 4613 3171 that are probably the remains of anti aircraft batteries and/or the command post for Stornoway aerodrome.

### 5.36.3 Gazetteer of cultural heritage

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB 4510 3565	Teanga Tunga	Enclosure, Rectilinear, Gun emplacement		A	C	Modern	Nil
NB43NW 03	Tong Farm	iron working debris ploughed up in field	Metal working debris	C	C	Unknown	Nil
NB 4446 3590	Tong	Stone Alignment		A	A	Unknown	Monitor
NB 4403 3598	Tong	Cell		A	C	Unknown	Monitor
NB 4418 3523	Laxdale	Settlement Mound, 1 metre of stratigraphy	Midden, Shell, whetstones	A	A	Norse	Monitor, excavate
NB 4418 3506	Laxdale	Settlement Mound		B	B	Unknown	Monitor
NB 4410 3370	Steinish	Dyke, Stone and Turf		B	A	Post Medieval	Monitor (?)
NB 4428 3369	Steinish	Cairn		B	B	Post Medieval	Nil
NB 4437 3376	Steinish	Dyke, Stone and Turf		B	A	Post Medieval	Monitor (?)
NB 4482 3411	Steinish	Dyke, Stone and Turf		C	C	Post Medieval	Nil
NB 4607 3414	Stornoway Airport	Dyke, concrete		A	A	Modern	Monitor
NB 4621 3393	Stornoway Airport	Dyke, concrete		A	A	Modern	Monitor
NB 4647 3360	Stornoway Airport	Enclosure, Rectilinear, military		A	A	Modern	Monitor
NB 4500 3350	Stornoway Airport	Airport		C	C	Modern	Survey
NB 4663 3330	Stornoway Airport	Stone Alignment		A	A	Unknown	Monitor
NB 4689 3347	Stornoway Airport	Enclosure, Curvilinear, Turf and stone		A	A	Unknown	Monitor
NB 4691 3341	Stornoway Airport	Promontory Enclosure, Bi-vallate		A	A	Prehistoric	Monitor, survey (?)
NB 4693 3338	Melbost	Cultivation, Rigging		A	A	Post Medieval	Nil
NB 4721 3298	Melbost	Promontory Enclosure		A	A	Prehistoric	Monitor, survey (?)
NB43SE 09	Branahuie	Burial	Bone, Human	C	C	Unknown	Monitor area
NB 4668 3198	Branahuie	Dyke, Turf		C	C	Post Medieval	Nil
NB 4666 3200	Branahuie	Field System		C	C	Post Medieval	Nil
NB 4622 3172	Holm	wooden posts emerging from shore		A	A	Unknown	Monitor
NB 4613 3171	Holm	multi-sided enclosures		A	C	Modern	Nil
NB 4608 3162	Holm	Dyke, Stone and Turf		A	A	Post Medieval	Nil
NB 4584 3136	Holm	Dyke, Stone and Turf		A	A	Post Medieval	Nil

# COASTAL EROSION ASSESSMENT(LEWIS) MAP SHEET NB 44 31/NB 48 36



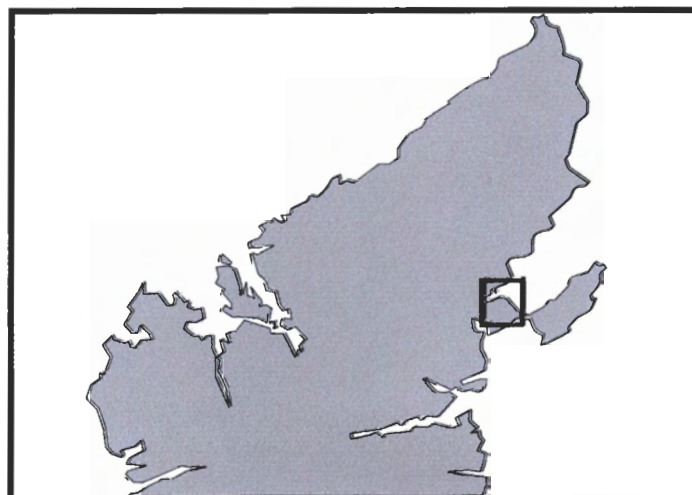
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- Encrofted to the shore
- Un-scheduled Monuments
- Scheduled Monuments
- Palaeo-Environment Sites

NB 1111 1111

NB 21 SW 01

Monument Reference Number



#### 5.36.4 Overview of erosion

This section can be split into six general zones of erosion including;

- the dynamic erosion regime of the alluvial sands and muds of the Sands of Tong (NB 265 to NB 272)
- the generally eroding north-east edge of Stornoway Aerodrome (NB 273 to NB 276)
- the eroding low cliff and rock platform of Melbost Point (NB 277)
- the generally stable isthmus between the Eye Peninsula and Lewis mainland (NB 278 to NB 279 and NB 294)
- the stable low rock platform and shingle of Branahuie (NB 295)
- the eroding sand and shingle foreshore south of Branahuie (NB 296)

The first zone represents the largest alluvial and tidal mudflats in Lewis. The north-eastern area consists of eroding shingle low edge and the spit of Teanga Thunga. The side of this spit facing the sea (NB 266) was showing signs of active erosion at the time of visit with undercutting of the dunes and wind deflation resulting in small-scale blowouts, whilst the western side (NB 267) was both eroding and depositing from primarily alluvial and aeolian action. A similar pattern was noted by Ramsay and Brampton (1995, p23) but they noted that the spit had not changed significantly in form since 1989 from aerial photographs and so its long-term erosion regime appears to be of relative stability.

The north-western, western and southern areas of alluvial sands and muds behind the protection of the spit show signs of both erosion and deposition. The processes which caused this were again primarily alluvial from the outwash from the river Abhain Lacasdail (one of the largest rivers of the study area) and wind deflation and accretion of the sand. Within this dynamic zone are a number of sites of archaeological interest, including the rapidly eroding site of probable Norse date (NB 4418 3523), which validates monitoring for this dynamic zone.

The second zone is related in its erosion regime to the first zone, but has much of its length facing the sea with the primary erosive mechanism switching back to marine action. This zone consists of the sand, shingle and man made barrier fronting the dune and machair edge of Stornoway Aerodrome. Along much of the dunes is evidence of wave undercutting and wind deflation, though this is

significantly lessened when the man made barriers are in good shape (e.g. NB 275). Again, Ramsay and Brampton (1995, p23) highlight this erosion but also point to the overall general stability of the zone. However, as much of the erosion is local in its impact which could still destroy an archaeological site, such as the eroding W.W.II defences (e.g. NB 4607 3414), this zone also requires regular monitoring.

The next zone represents the eroding low cliff and rock platform of Melbost point, with active erosion evident with cliff slips and deep erosion scars. There are a number of possible prehistoric sites actively eroding, such as promontory enclosures (NB 4691 3341 and NB 4721 3298), which highlights the need for regular monitoring of this zone. The low cliffs give way to the extremely wide intertidal area of the northern stretch of the isthmus joining the Eye Peninsula to the mainland, which has a protective shingle ridge and man made modifier of sea walls and groynes, though at the time of visit limited signs of erosion, wind deflation and wave undercutting of some dunes was observed. The southern stretch of the isthmus showed no signs of erosion. The sand and shingle of the isthmus give way to stable low rock platform topped with shingle, to the south of Branahue.

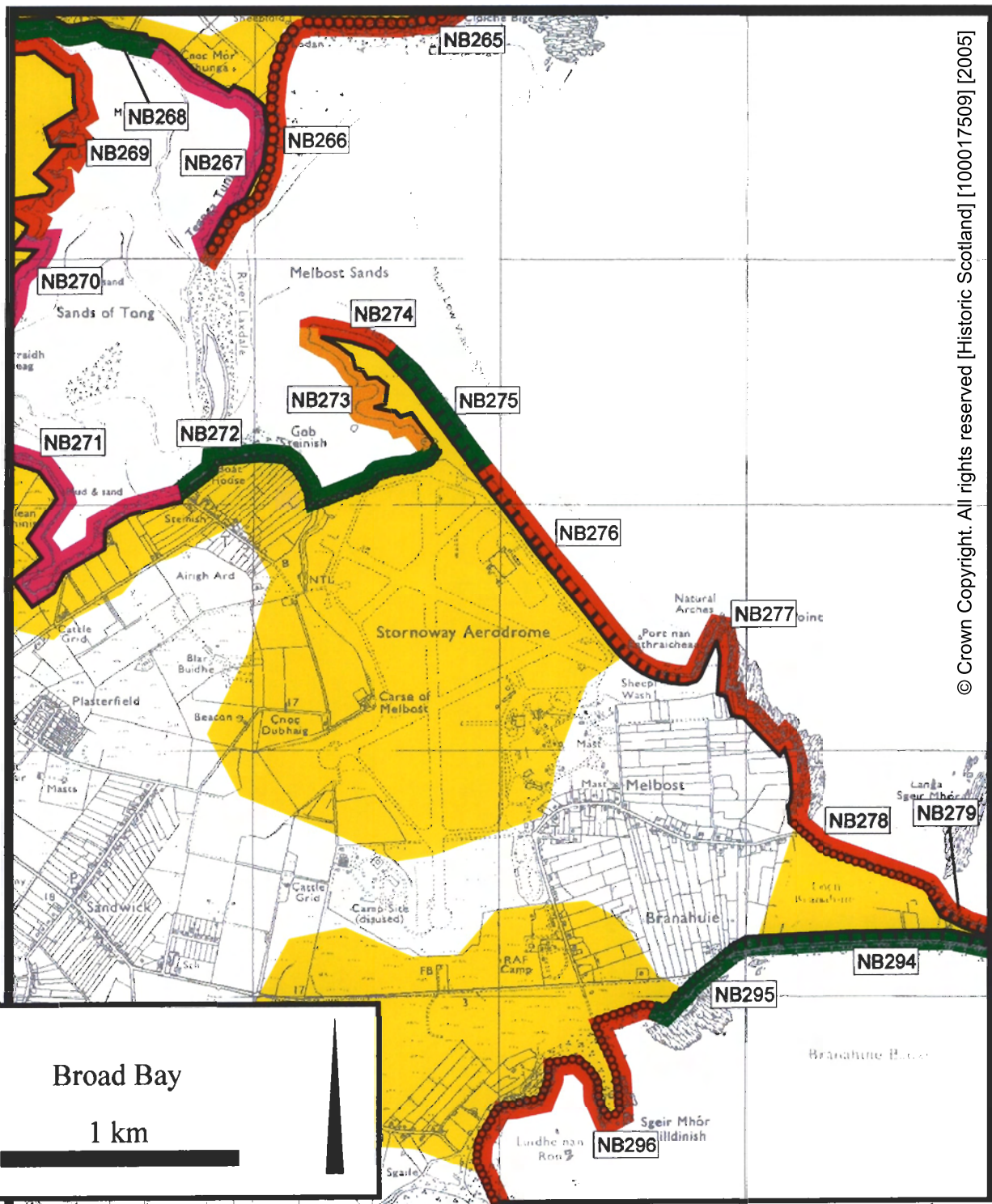
The final zone consists of an eroding sand and shingle foreshore which back on to glacially derived material. This substrate is being actively eroded with the overlying archaeology, such as post-Medieval field monuments, being eroded. Hence, periodic monitoring of this zone is advisable.

**5.36.5 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 265	NB 455 359	A-Eroding	Lodan	Mainly Sand	Wind Blown Sand	New Red Sandstone	864.408	Shingle / storm bank
NB 266	NB 450 353	A-Eroding	Tunga	Mainly Alluvial Sand/Mud	Wind Blown Sand	New Red Sandstone	905.452	Shingle / storm bank
NB 267	NB 449 353	F-Eroding /Depositing	Tunga	Mainly Alluvial Sand/Mud	Alluvium	New Red Sandstone	985.891	Low edge < 5m.
NB 268	NB 443 358	C-Stable	Tunga	Mainly Alluvial Sand/Mud	Alluvium	New Red Sandstone	428.136	Low edge < 5m.
NB 269	NB 442 353	A-Eroding	Laxdale	Mainly Alluvial Sand/Mud	Alluvium	New Red Sandstone	1407.345	Low edge < 5m.
NB 270	NB 440 348	F-Eroding/ Depositing	Laxdale	Mainly Alluvial Sand/Mud	Alluvium	New Red Sandstone	600.761	Low edge < 5m.
NB 271	NB 442 339	F-Eroding/ Depositing	Broad bay	Mainly Alluvial Sand/Mud	Alluvium	New Red Sandstone	1679.237	Low edge < 5m.
NB 272	NB 455 344	C-Stable	Stornoway Airport	Mainly Alluvial Sand/Mud	Wind Blown Sand	New Red Sandstone	966.743	Low edge < 5m.
NB 273	NB 452 341	B-Eroding/ Stable	Stornoway Airport	Mainly Alluvial Sand/Mud	Wind Blown Sand	New Red Sandstone	1282.495	Shingle / storm bank
NB 274	NB 455 346	A-Eroding	Stornoway Airport	Mainly Sand	Wind Blown Sand	New Red Sandstone	500.834	Low edge < 5m.
NB 275	NB 458 342	C-Stable	Stornoway Airport	Mainly Sand	Wind Blown Sand	New Red Sandstone	448.325	Man made barrier
NB 276	NB 463 336	A-Eroding	Stornoway Airport	Mainly Sand	Wind Blown Sand	New Red Sandstone	1146.044	Man made barrier
NB 277	NB 470 331	A-Eroding	Stornoway Airport	Mainly Rock Platform	Glacial sand and Gravel	New Red Sandstone	1329.062	Cliff over 5m.
NB 278	NB 475 324	A-Eroding	Branahuie	Mainly Sand	Drift, Boulder clay over visible rock	New Red Sandstone	628.874	Shingle / storm bank
NB 279	NB 482 322	A-Eroding	An Rubha	Mainly Sand	Glacial sand and Gravel	New Red Sandstone	376.159	Man made barrier
NB 294	NB 477 321	C-Stable	Branahuie	Mainly Sand	Glacial sand and Gravel	New Red Sandstone	1460.217	Man made barrier
NB 295	NB 468 319	C-Stable	Branahuie	Mainly Rock Platform	Glacial sand and Gravel	New Red Sandstone	451.545	Shingle / storm bank
NB 296	NB 465 317	A-Eroding	Branahuie	Mainly Sand	Drift, Boulder clay	New Red Sandstone	2300.072	Shingle / storm bank



**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 44 31/NB 48 36**



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Broad Bay

1 km

NA001

Cell number



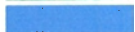
Eroding



Eroding - Stable



Stable



Stable - Depositing



Depositing



Depositing and Eroding



Low edges less than 5 metres high



Cliff over 5 metres high



Man made barrier



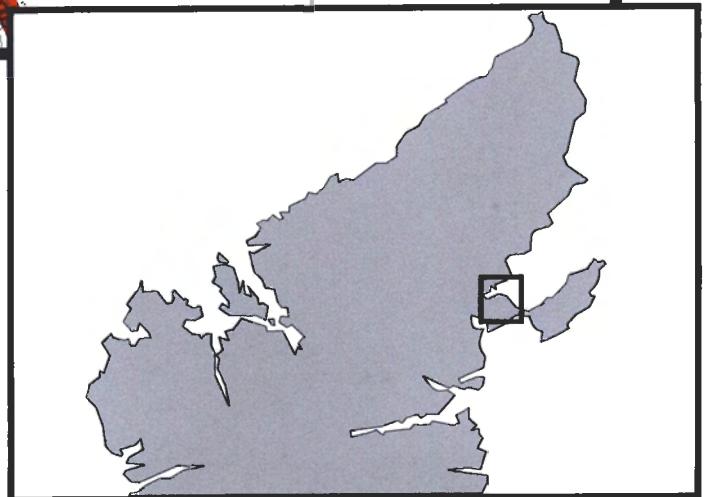
Single bank/storm beach



Human disturbance



Land below 10 metres





5.36.6 *Overview of coastal geomorphology*

The descriptions of the geomorphology will follow the breakdown of the section into the general erosion zones above. At the north-eastern area of the first zone is low rock platform of basement Permian and Triassic undifferentiated New Red Sandstone fronted by sand and shingle.

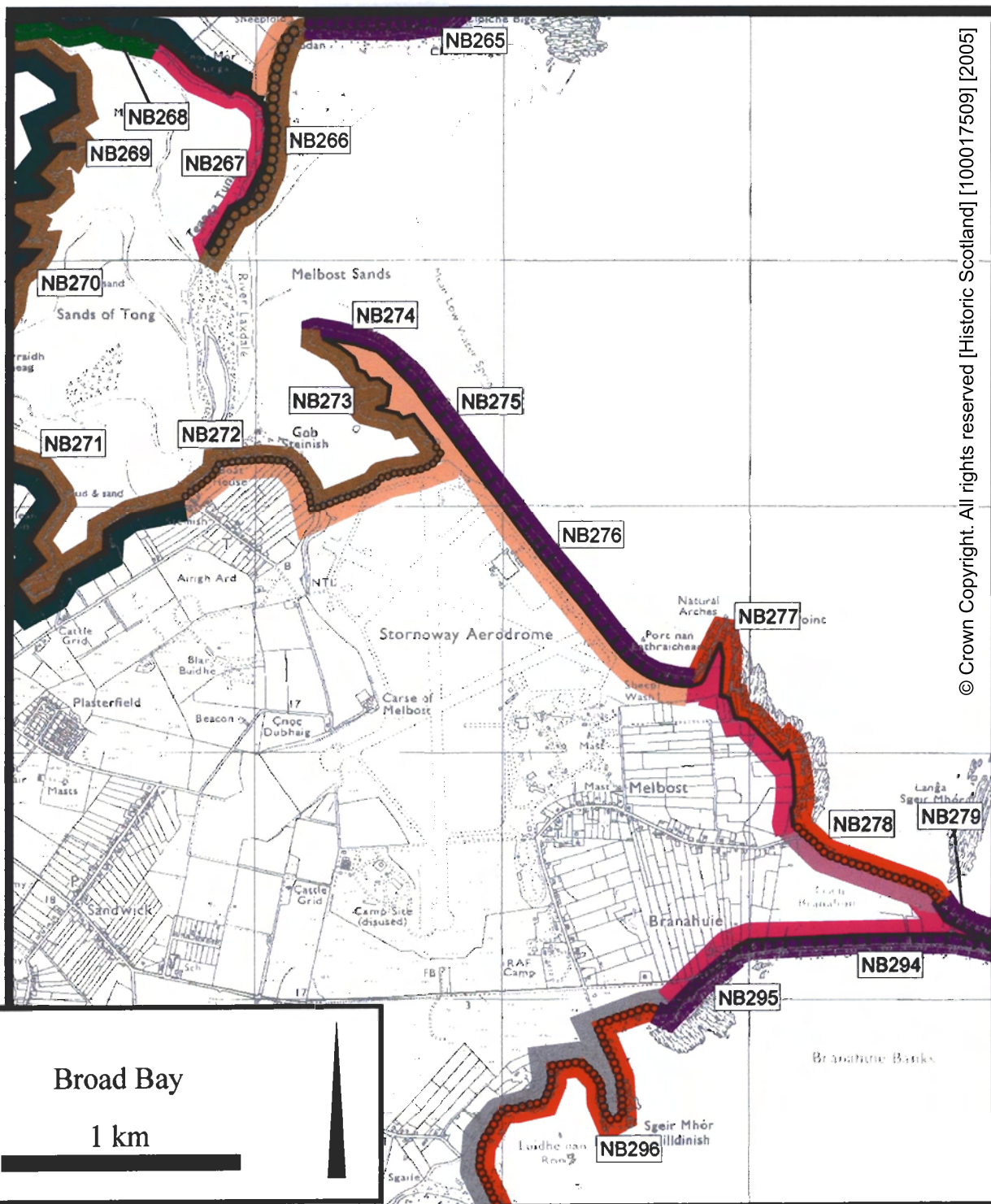
The spit of Teanga Thunga then extends in a southwards direction, comprised of a sand lower beach and a shingle upper beach backed by discontinuous eroding dunes. Inland of this protective spit is a complex of alluvial and marine muds and sands creating the largest expanse of mudflat and saltmarsh in the study area.

To the west of this is the sand, shingle, dune and sea defences of Melbost sands. The wide sandy lower beach is backed by a discontinuous shingle ridge and dune system with a spit like feature of dunes and shingle extending northwards into Broad Bay (NB 274 to NB 275).

Further low rock platform of basement Permian and Triassic undifferentiated New Red Sandstone is then reached at Melbost Point. This is followed by the northern stretch of the Eye Peninsula isthmus which consists of mainly sand with patches of shingle and dunes occurring at the central portion in front of the sea defences. A small brackish loch (Loch Branahuie) sits at the western end. The southern stretch of the isthmus consists of coarse sand in the intertidal zone with shingle forming the upper beach.

The final two zones consist of low rock conglomerate platform of Permian and Triassic undifferentiated New Red Sandstone covered by a shingle ridge with the addition of marshy till in the final zone.

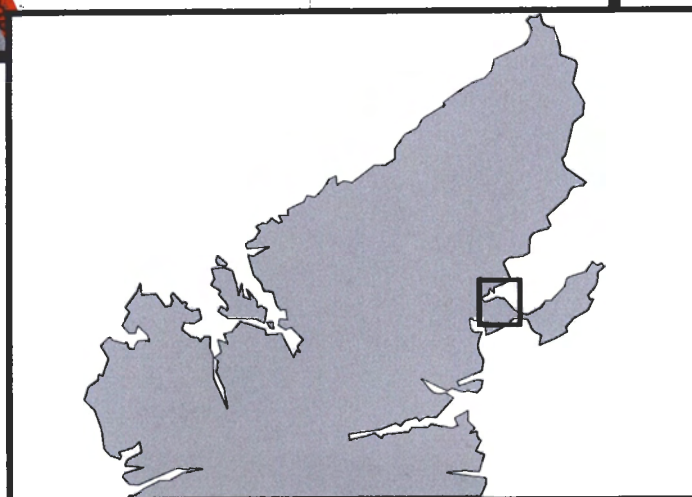
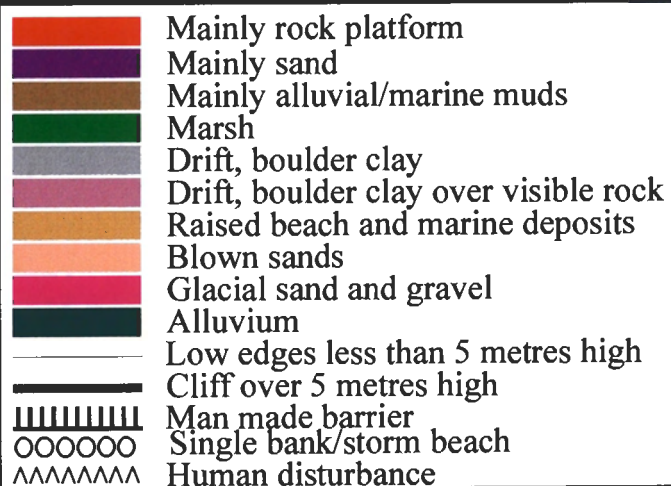
**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 44 31/NB 48 36**



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Broad Bay

1 km





## 5.37 MAP SHEET NB 48 29/NB 52 35, EYE PENINSULA (WEST)

## 5.37.1 Overview of cultural heritage

## 5.37.1.1 Number of monuments

Scheduled	- 3	[5333, 1684 (1679) and 5366]
Recorded in the NMRS	- 6	[NB52NW 01, NB43SE 02, NB43SE 04, NB43SE 05, NB53SW 09, NB53SW 03]
Others	- 16	
<b>Total</b>	<b>- 22</b>	

## 5.37.1.2 Number of site state occurrences

Eroding (A)	- 11
Eroding/stable (B)	- 6
Stable (C)	- 5

## 5.37.1.3 Number of response occurrences

Nil	- 10
Monitor, (Baseline survey)	- 12
Detailed survey	- 2
Sample	- 0

## 5.37.2 Description of cultural heritage

This map sheet covers the western part of the Eye Peninsula including the townships of Aignish, Knock and Swordale. Most of the sites are related to the post medieval, pre-crofting and crofting phases of settlement on the Eye Peninsula which is dominated by high sea cliffs of over 5.0 metres backed by crofts and grazing land.

Two of the sites listed here are Ecclesiastical; the monastic settlement at Rubha nan Suighean (NB52NW 01, Scheduled Ancient Monument number 5333) and St Columba's Church at Aignish (NB43SE 05, Scheduled Ancient Monument number 1684 (previously 1679)).

Sites of prehistoric date include two middens at Aignish (NB43SE 02 and NB43SE 04) and Dun Mor fort and promontory enclosure (NB53SW 03, Scheduled Ancient Monument number 5366). This site encloses an area of *circa* 1 hectare. One other site is of interest, that of the promontory enclosure at Swordale (NB 4968 3000) which encloses *circa* 1 hectare and is of uncertain date.





# COASTAL EROSION ASSESSMENT (LEWIS)

## 5.37.3 Gazetteer of cultural heritage

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB52NW 01	Bayble	Wall		A	A	Unknown	Nil
NB52NW 01	Rubha nan Suighean	monastic settlement		B	C	Medieval	Monitor (?)
NB 5069 2924	Rubha nan Suighean	Dyke, Turf		C	B	Unknown	Nil
NB 4968 3000	Swordale	Promontory Enclosure		A	A	Unknown	Monitor, survey (?)
NB 4967 3010	Swordale	Cultivation, Rigging		B	B	Pre Clearance	Nil
NB 4880 3102	Swordale	Field System		A	A	Crofting	Nil
NB 4882 3126	Swordale	Enclosure, Habitational, Rectilinear, Turf and stone		A	A	Post Medieval	Monitor (?)
NB 4866 3138	Knock Ramadale	Enclosure, Rectilinear		C	C	Modern	Nil
NB 4843 3147	Knock Ramadale	Field System		A	A	Post Medieval	Nil
NB 4843 3167	Knock Ramadale	Enclosure, Curvilinear, Turf and stone		A	B	Unknown	Monitor (?)
NB 4839 3188	The Old Manse	Enclosure, Curvilinear		A	A	Unknown	Monitor (?)
NB 4837 3194	The Old Manse	Dyke, Turf		A	A	Post Medieval	Nil
NB43SE 02	Eye Peninsula		Midden, Kitchen and hearth	C	C	Prehistoric	Monitor area
NB43SE 04	Eye Peninsula		Midden, Kitchen	C	C	Prehistoric	Monitor area
NB43SE 05	Aignish	St Columba's Church		B	C	Post Medieval	Monitor
NB 4884 3265	Aignish	Field System		A	A	Post Medieval	Nil
NB 4903 3268	Aignish	Enclosure, Rectilinear, Turf and stone		A	B	Post Medieval	Monitor (?)
NB 4954 3279	Rubh an t-Sean Eich	Dyke, Stone and Turf		A	A	Post Medieval	Nil
NB 4987 3310	Stac Mor Garrabost	Enclosure, Curvilinear, Turf and stone		A	B	Unknown	Monitor
NB53SW 09	Garrabost	Field System		A	A	Post Medieval	Monitor
NB 5010 3333	Garrabost	Field System		A	A	Post Medieval	Nil
NB53SW 03	Dun Mor	Dun Mor fort, rampart, Promontory enclosure		A	A	Prehistoric	Monitor, survey (?)
NB53SW 01	Dun Mor	Tobar Huisdien		C	C		Nil
NB 5148 3388	Dun Mor	Field System		A	B	Post Medieval	Nil



**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 48 29/NB 52 35**

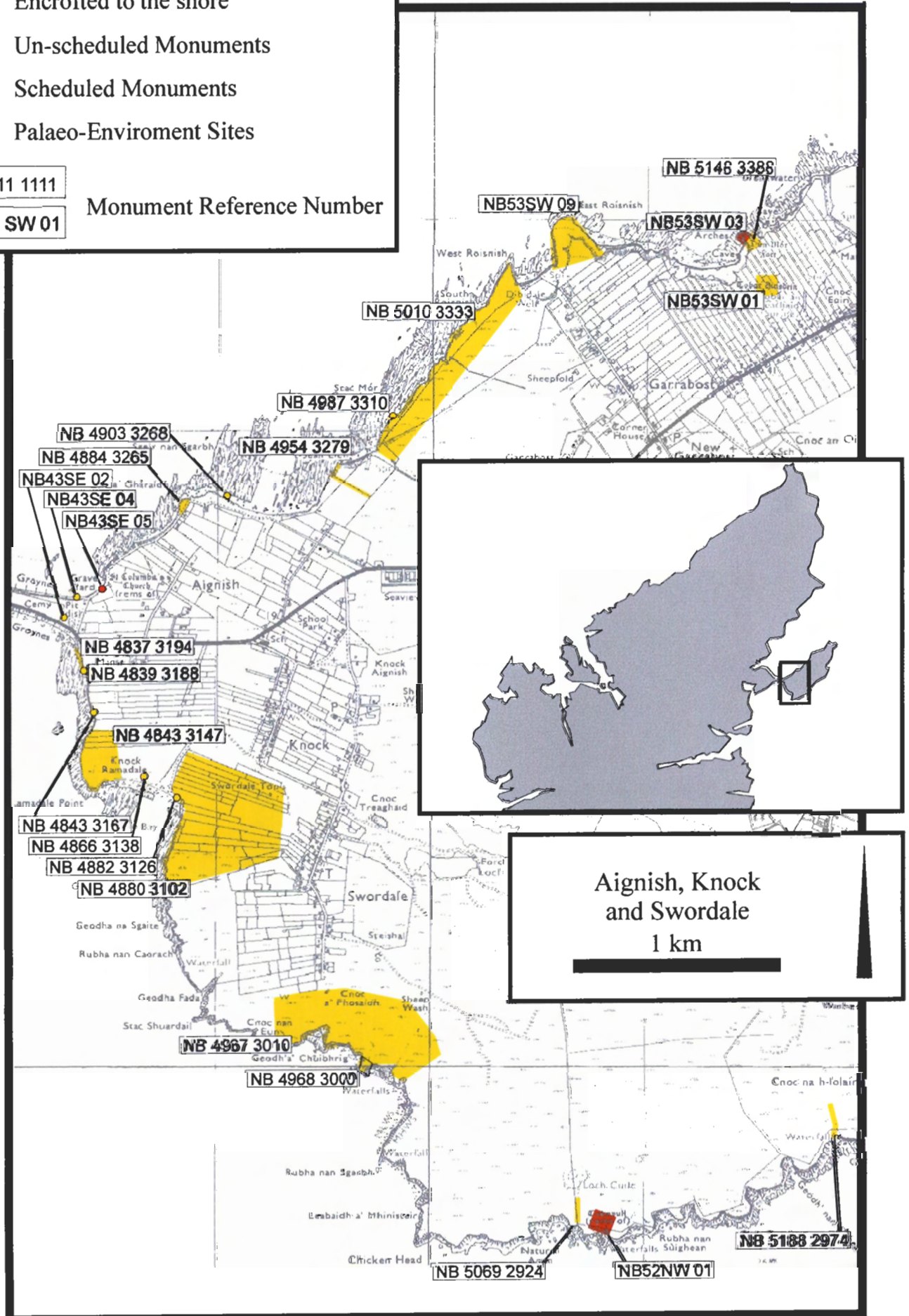
-  Encrofted to the shore
-  Un-scheduled Monuments
-  Scheduled Monuments
-  Palaeo-Environment Sites

NB 1111 1111

NB 21 SW 01

Monument Reference Number

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#### 5.37.4 Overview of erosion

This map sheet contains sections of both the north and south of the western end of the Eye Peninsula and so will be discussed as two sections in the following two summaries.

Northern section:

This section starts with the remainder of the sand and shingle isthmus connecting the Eye Peninsula with the mainland, which again shows signs of erosion within the dune systems and shingle ridges surrounding Aignish graveyard (NB 279). A number of archaeological sites have been discovered within this zone in the past (*e.g.* NB43SE 02 and NB43SE 04) and so this zone should be monitored on a regular basis.

The next erosion unit consists of eroding low rock platform and conglomerate cliffs which are experiencing direct marine erosion with cliff slips and deep, continuous eroding faces (NB 280). The conglomerate cliffs gradually disappear towards the north of this unit, but the cliffs continue to be eroded, resulting in an incised profile. This has been used in prehistoric settlement (*i.e.* the promontory enclosure of NB43SE 03) and so this zone requires further monitoring.

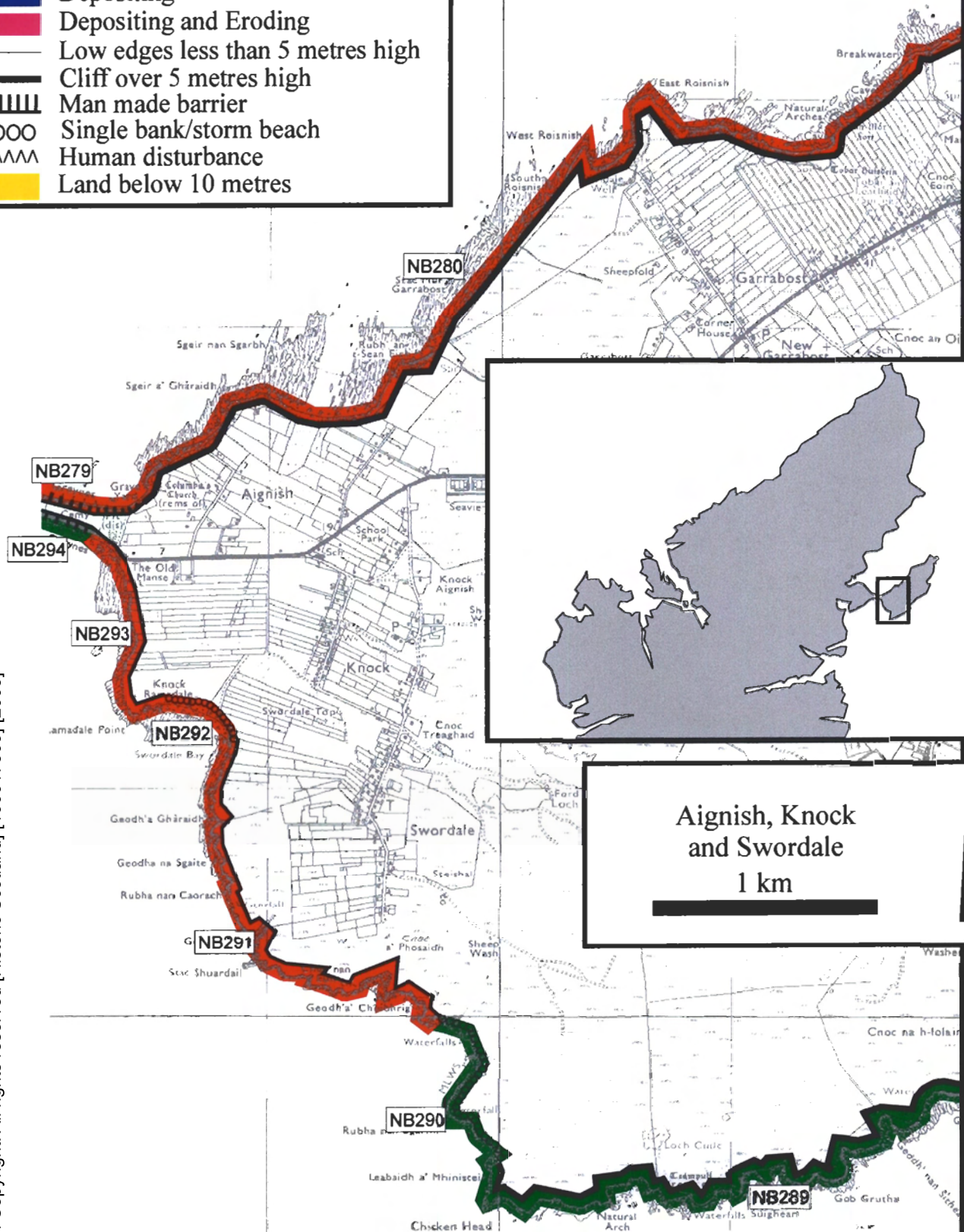
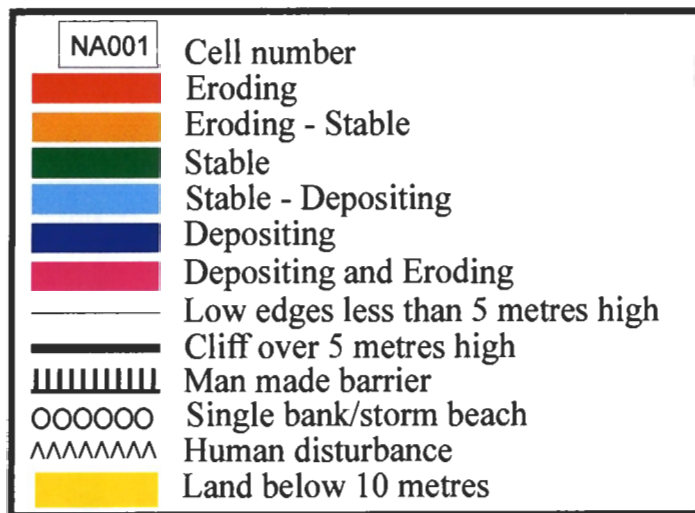
Southern section:

This section can be split into three general erosion zones including;

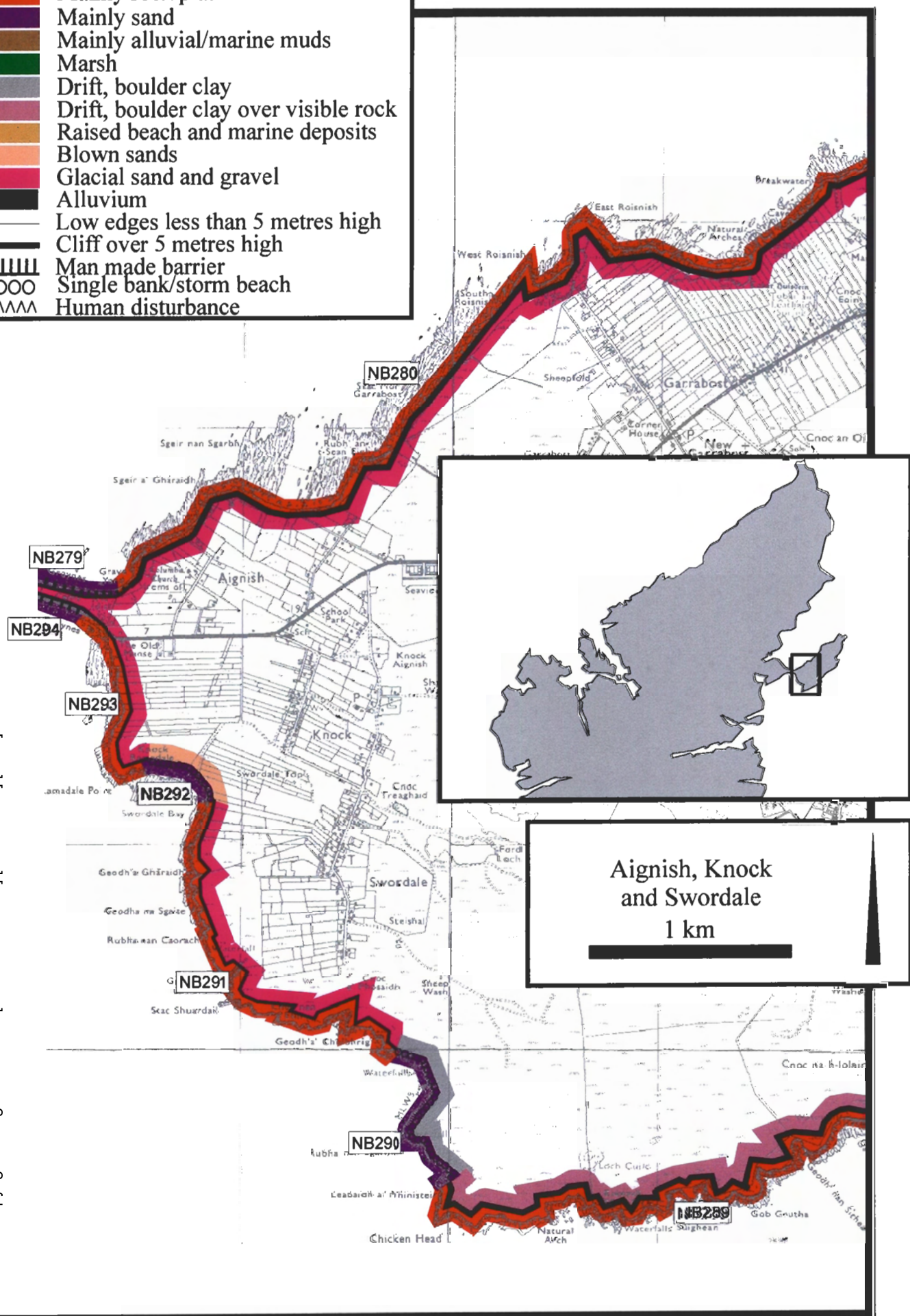
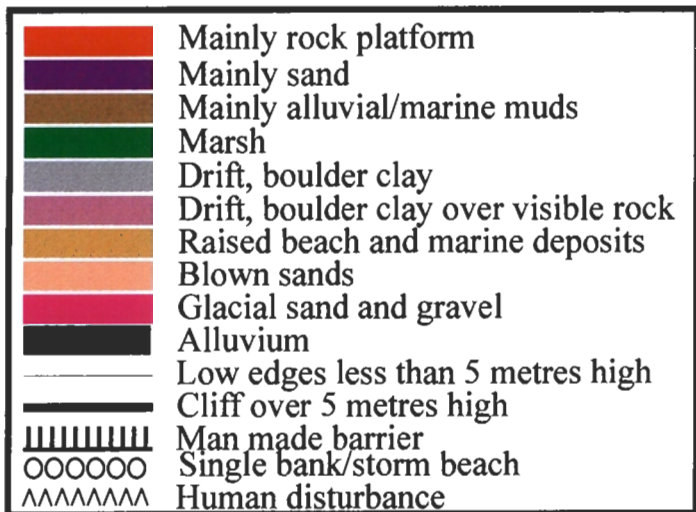
- the stable high cliffs of Chicken Head (NB 289 to NB 290)
- the eroding low cliff and rock platform from Swordale to Aignish (NB 291 to NB 293)
- the stable sand and shingle southern stretch of the Eye Peninsula isthmus (NB 294)

The first zone consists of high cliffs of basement Lewisian Gneiss. Towards the end of this zone, the cliffs fall away to be replaced by low rock platform and shingle. The next zone reverts to eroding low conglomerate cliffs, which are interrupted by the sand and shingle beach of Knock Ramadale. This zone has a number of sites (*e.g.* the promontory enclosure of NB 4968 3000) which validate further monitoring. The final zone marks the beginning of the stable southern stretch of the isthmus, described in section 5.36.4

**COASTAL EROSION ASSESSMENT (LEWIS)  
MAP SHEET NB 48 29/NB 52 35**



**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 48 29/NB 52 35**



**Aignish, Knock  
and Sworddale  
1 km**





**5.38 MAP SHEET NB 52 29/NB 57 35, EYE PENINSULA (CENTRE)**

**5.38.1 Overview of cultural heritage**

**5.38.1.1 Number of monuments**

Scheduled	- 0	
Recorded in the NMRS	- 1	[NB53SE 01]
Others	- 22	
<b>Total</b>	<b>- 23</b>	

**5.38.1.2 Number of site state occurrences**

Eroding (A)	- 0
Eroding/stable (B)	- 5
Stable (C)	- 17

**5.38.1.3 Number of response occurrences**

Nil	- 19
Monitor, (Baseline survey)	- 4
Detailed survey	- 2
Sample	- 0

**5.38.2 Description of cultural heritage**

This map sheet covers the central part of the Eye Peninsula and includes the townships of Bayble and Sheshader. The coastline in this area is for the most part high sea cliffs of over 5.0 metres interspersed with shingle bays in front of the townships. The majority of the sites on this map are of the post-medieval, pre-crofting and crofting phases of settlement.

Two sites are of prehistoric date: The promontory enclosure at Sheshader (NB 5613 3332), encloses an area of *circa* 1 hectare on top of a precipitous stack called Rubha na Greine and is linked by a natural arch to the shore. Pottery fragments collected from eroding sections in the enclosing wall have been identified as Unstan wear, and while this is not definite proof of a Neolithic date for the construction of the site it would tend to suggest a phase of activity dated to that period.

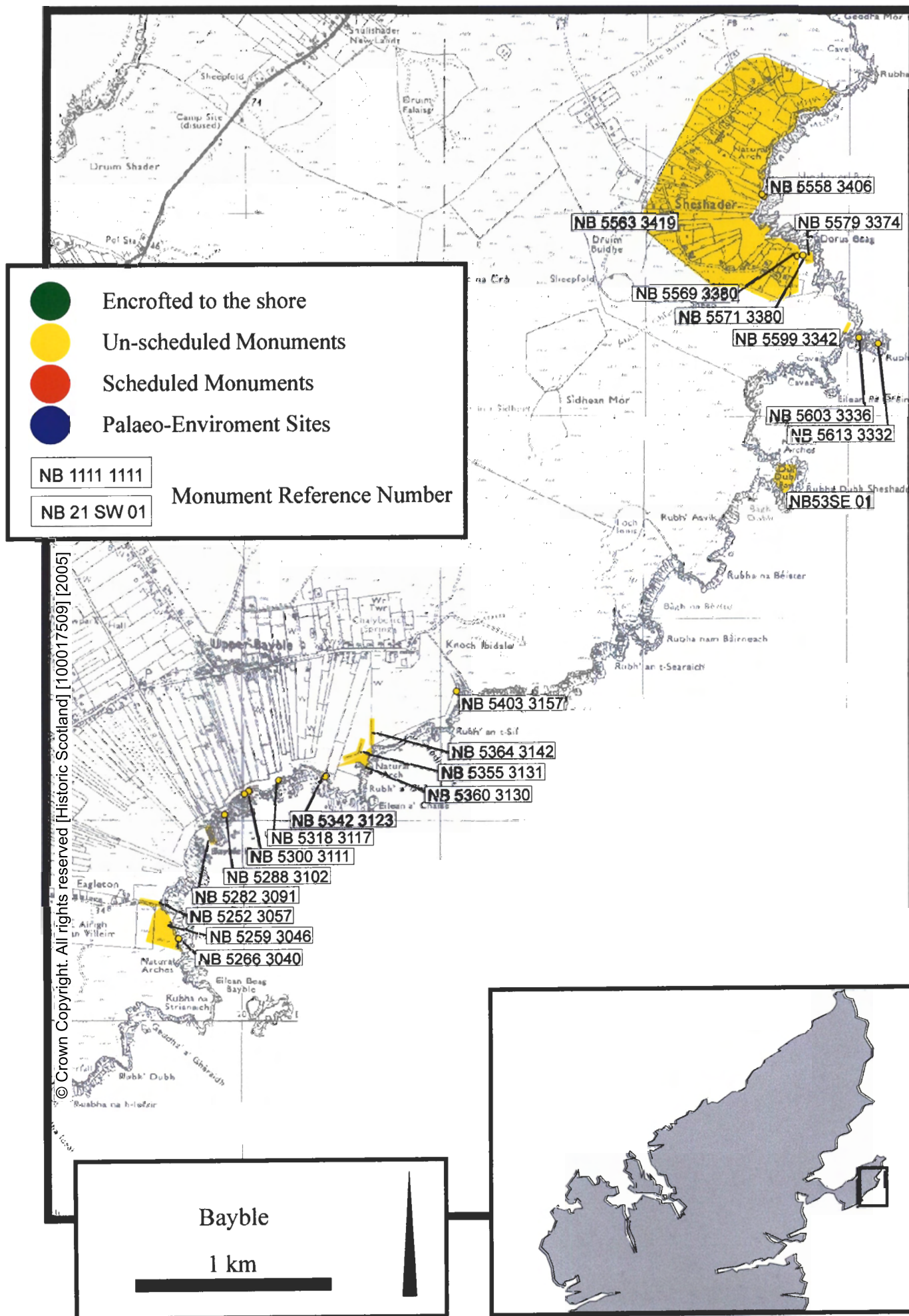
A second promontory enclosure (NB53SE 01) known as Dun Dubh is situated only 1 kilometre to the south of Rubha na Greine and encloses between 2 and 3 hectares.

**5.38.3 Gazetteer of cultural heritage**

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB 5563 3419	Sheshader	Field System		C	C	Crofting	Nil
NB 5558 3406a	Sheshader	Harbour		C	C	Modern	Nil
NB 5558 3406b	Sheshader	Enclosure, Curvilinear, Turf		B	B	Post Medieval	Monitor (?)
NB 5571 3380	Sheshader	Enclosure, Habitational, Rectilinear, Drystone		C	C	Unknown	Nil
NB 5569 3380	Sheshader	Enclosure, Habitational, Curvilinear, Stone and earth core		C	C	Unknown	Nil
NB 5579 3374	Sheshader	Field System		C	C	Unknown	Nil
NB 5599 3342	Sheshader	Cultivation, Rigging		C	C	Unknown	Nil
NB 5603 3336	Sheshader	Stone Alignment		B	B	Unknown	Monitor (?)
NB 5613 3332	Sheshader	Promontory Enclosure	Ceramic/pottery	B	B	Neolithic	Monitor, survey (?)
NB53SE 01	Dun Dubh	Promontory Enclosure		C	C	Prehistoric	Monitor, survey (?)
NB 5403 3157	Bayble	Sheiling		C	C	Unknown	Nil
NB 5364 3142	Bayble	Dyke, Stone and Turf		C	C	Post Medieval	Nil
NB 5360 3130	Bayble	Cultivation, Rigging		C	C	Post Medieval	Nil
NB 5355 3131	Bayble	Dyke, Stone and Turf		C	C	Post Medieval	Nil
NB 5342 3123	Bayble	Enclosure, Habitational, Rectilinear, Turf and stone		C	C	Pre Clearance	Nil
NB 5318 3117	Bayble	Boat Naust		C	C	Post Medieval	Nil
NB 5300 3111a	Bayble	Enclosure, Habitational, Rectilinear, Stone and earth core		C	C	Unknown	Nil
NB 5300 3111b	Bayble	Boat Naust		C	C	Modern	Nil
NB 5288 3102	Bayble	Enclosure, Habitational, Rectilinear, Stone and earth core		C	C	Post Medieval	Nil
NB 5282 3091	Bayble	Pier		C	C	Modern	Nil
NB 5252 3057	Bayble	Dyke, Stone and Turf		B	B	Post Medieval	Nil
NB 5259 3046	Bayble	Cultivation, Rigging		B	B	Pre Clearance	Nil
NB 5266 3040	Eagleton	Blackhouse		C	C	Post Medieval	Nil



**COASTAL EROSION ASSESSMENT (LEWIS)  
MAP SHEET NB 52 29/NB 57 35**



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#### **5.38.4 Overview of erosion**

This section can be split into three general zones of erosion including;

- the stable low cliffs from Aird to Sheshader (NB 283)
- the generally eroding high cliffs of Rubha na Greine (NB 284 to NB 285)
- the generally stable high cliffs to Eagleton (NB 286 to NB 289)

The first section represents the continuation of the general erosion regime of the central and northern parts of the Eye Peninsula with generally stable cliff. The next section however, represents a different erosion pattern from the norm with the cliffs changing to conglomerate cliffs for a short stretch. Hence, the rock is softer and there are many signs of active marine erosion with cliff slips and continuous eroding faces. Within this section is a promontory enclosure, from which Neolithic pottery was eroding (NB 5613 3332), which requires regular monitoring.

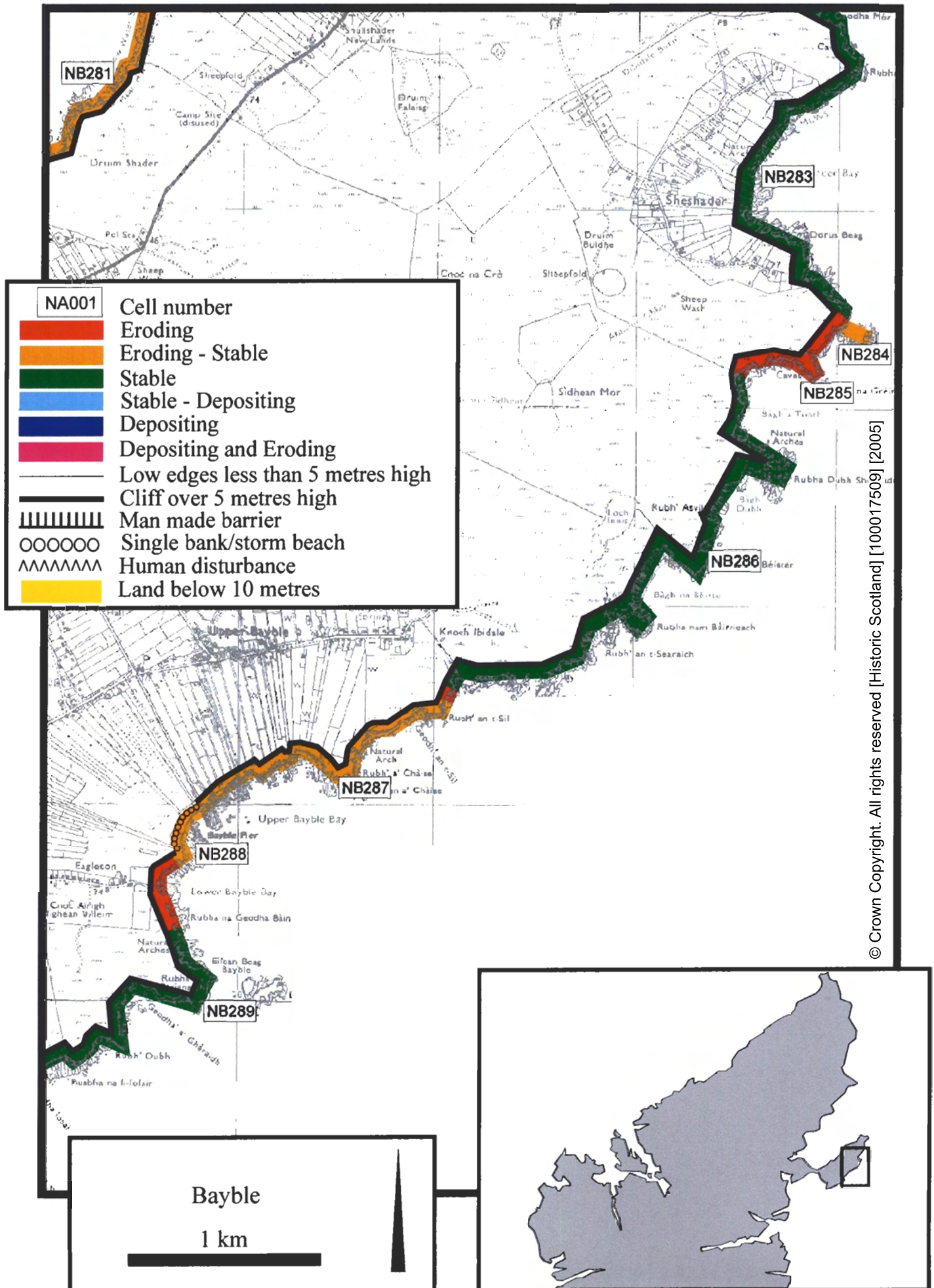
The next section reverts to stable high cliff with the only break in the relief provided by the sand and shingle beach of Bayble (NB 288), which exhibits some signs of wave undercutting in the land behind.

#### **5.38.5 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 281	NB 525 349	B-Eroding/ Stable	Sulasiadar	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	2809.847	Cliff over 5 m.
NB 283	NB 560 345	C-Stable	Aird to Sheshader	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	4127.896	Cliff over 5m.
NB 284	NB 561 333	B-Eroding/ Stable	Rubha na Greine	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	472.274	Cliff over 5m.
NB 285	NB 558 332	A-Eroding	Rubha na Greine	Mainly Rock Platform	Glacial sand and Gravel	Gneiss	787.604	Cliff over 5m.
NB 286	NB 550 321	C-Stable	Bayble	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	3943.844	Cliff over 5m.
NB 287	NB 535 312	B-Eroding/ Stable	Bayble	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	1810.826	Cliff over 5m.
NB 288	NB 527 308	B-Eroding/ Stable	Bayble	Mainly Sand	Drift, Boulder clay	Gneiss	231.388	Shingle / storm bank



**COASTAL EROSION ASSESSMENT (LEWIS)  
MAP SHEET NB 52 29/NB 57 35**

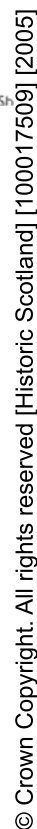


NB 289	NB 513 296	C-Stable	Bayble to Swordale	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	6557.839	Cliff over 5m.
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#### *5.38.6 Overview of coastal geomorphology*

This section is dominated by high cliffs of basement Lewisian Gneiss overlain with sporadic shallow deposits of glacially derived and *in situ* weathered material. The two breaks in this pattern are represented by the second general zone of erosion which seemingly consists of conglomerate cliffs of Permian and Triassic undifferentiated New Red Sandstone, which sets up an erosion focus within the wider coverage of the Lewisian Gneiss.

The other break is represented by Bayble beach, which consists of a sand lower beach with a shingle ridge occupying much of the upper beach. No machair or dune system forms behind this; instead the land is covered with the usual sporadic shallow deposits of glacially derived and *in situ* weathered material.

**MAP SHEET NB 52 29/NB 57 35**





**5.39 MAP SHEET NB 52 35/NB 58 39, EYE PENINSULA (NORTH-EAST)**

**5.39.1 Overview of cultural heritage**

**5.39.1.1 Number of monuments**

Scheduled	- 1	[5346]
Recorded in the NMRS	- 2	[NB53NW 01 and NB53NE 02]
Others	- 22	
<b>Total</b>	<b>- 24</b>	

**5.39.1.2 Number of site state occurrences**

Eroding (A)	- 2
Eroding/stable (B)	- 8
Stable (C)	- 14

**5.39.1.3 Number of response occurrences**

Nil	- 16
Monitor, (Baseline survey)	- 8
Detailed survey	- 0
Sample	- 0

**5.39.2 Description of cultural heritage**

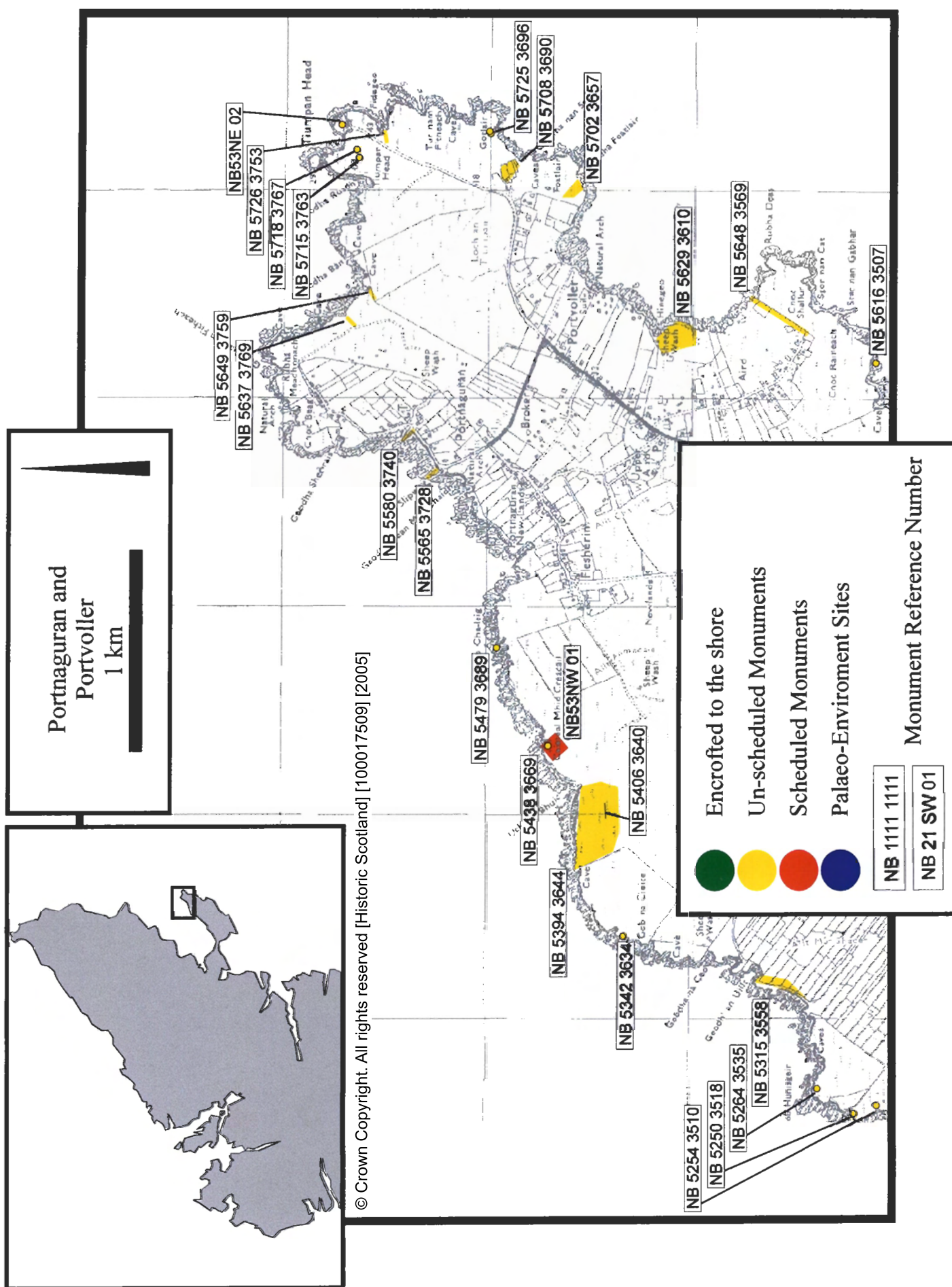
This map sheet covers the northern part of the Eye Peninsula and includes the townships of Shulishader, Portnagunan and Portvoller. The coastline in this area is for the most part high sea cliffs of over 5.0 metres backed by grazing and crofting lands. The majority of the sites on this map are of post-medieval, pre-crofting and crofting phases of settlement.

Five cairns recorded here may have prehistoric datea including two cairns at Shulishader (NB 5250 3518 and NB 5342 3634) the first of which has an associated paved area. At Caistel Mhic Creacail the NMRS recorord a burial cairn (NB53NW 01) of prehistoric date and at Gotlair (NB 5725 3696) this survey recorded another cairn believed to be prehistoric. The only other site of interest on this map sheet is a settlement mound at Shulishader (NB 5264 3535).

**5.39.3 Gazetteer of cultural heritage**

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB 5254 3510	Shulishader	Stone Alignment		B	C	Unknown	Monitor (?)
NB 5250 3518	Shulishader	Cairn, paved area		B	C	Unknown	Monitor (?)
NB 5264 3535	Shulishader	Settlement Mound		B	C	Unknown	Monitor (?)
NB 5315 3558	Shulishader	Field System		B	B	Post Medieval	Nil
NB 5342 3634	Shulishader	Cairn		A	A	Unknown	Monitor (?)
NB 5394 3644	Shulishader	Cultivation, Rigging		B	B	Post Medieval	Nil
NB 5406 3640	Shulishader	Stone Alignment		C	C	Unknown	Nil
NB 5438 3669	Flesherin	Cairn		B	B	Prehistoric	Monitor
NB53NW 01	Caisteal Mhic Creacail	Burial Cairn		B	C	Prehistoric	Monitor (?)
NB 5479 3689	Flesherin	Wreck, Hulk, Iron		C	B	Modern	Nil
NB 5565 3728	Portnaguran	Slip way		C	C	Modern	Nil
NB 5580 3740	Portnaguran	Pier		C	C	Modern	Nil
NB 5637 3769	Portnaguran	Dyke, Stone and Turf		B	B	Unknown	Nil
NB 5649 3759	Portnaguran	Dyke, Drystone		A	A	Unknown	Monitor
NB 5715 3763	Tiumpnan Head	Enclosure, Rectilinear, Poured concrete		B	C	Modern	Nil
NB 5718 3767	Tiumpnan Head	Enclosure, Rectilinear, Poured concrete		B	C	Modern	Nil
NB53NE 02	Tiumpnan Head	Lighthouse complex		C	C	Modern	Nil
NB 5726 3753	Tiumpnan Head	Dyke, Turf		B	B	Unknown	Nil
NB 5725 3696	Gotlair	Cairn		A	B	Prehistoric	Monitor
NB 5708 3690	Gotlair	Enclosure, Rectilinear, Turf and stone		B	C	Pre Clearance	Nil
NB 5702 3657	Geodha Foatlair	Cultivation, Rigging		C	C	Pre Clearance	Nil
NB 5629 3610	Portvoller	Cultivation, Rigging		B	B	Post Medieval	Nil
NB 5648 3569	Portvoller	Dyke, Stone and Turf		B	C	Post Medieval	Nil
NB 5616 3507	Aird	Marine industry features		C	C	Modern	Nil

**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 52 35/NB 58 39**



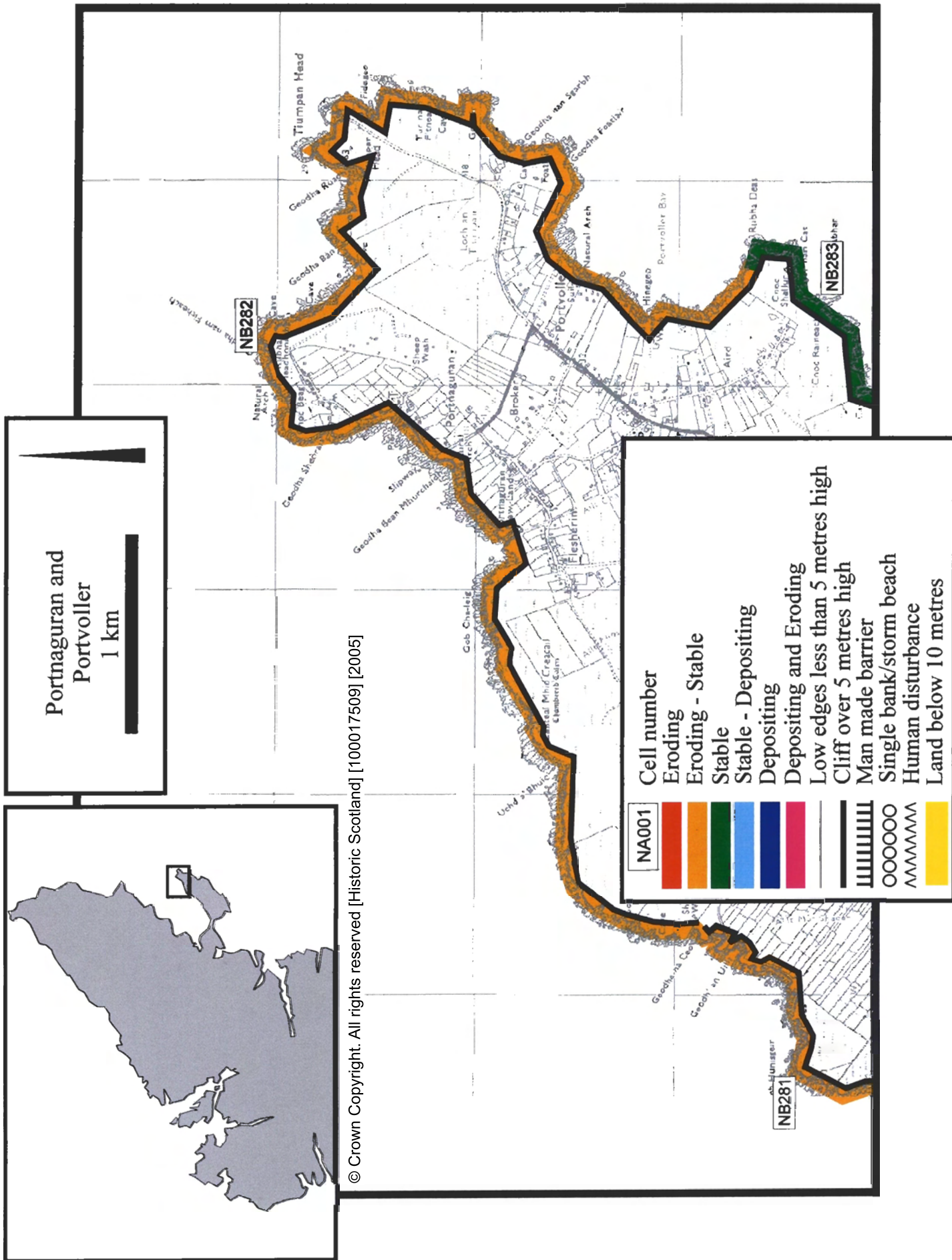
#### **5.39.4 Overview of erosion**

This section is almost exclusively dominated by high cliffs designated as being eroding/stable. Generally the cliff line is relatively stable but there are certain local stretches of the coastline where erosion is occurring which impacts on individual sites (e.g. the cairn at NB 5342 3634).

Sites such as this need periodic monitoring to check for dating evidence or a worsening of condition.

#### **5.39.5 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 281	NB 525 349	B-Eroding/ Stable	Sulasiadar	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	2809.847	Cliff over 5 m.
NB 282	NB 558 371	B-Eroding/ Stable	Point	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	13215.00	Cliff over 5m.
NB 283	NB 560 345	C-Stable	Aird to Sheshader	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	4127.896	Cliff over 5m.

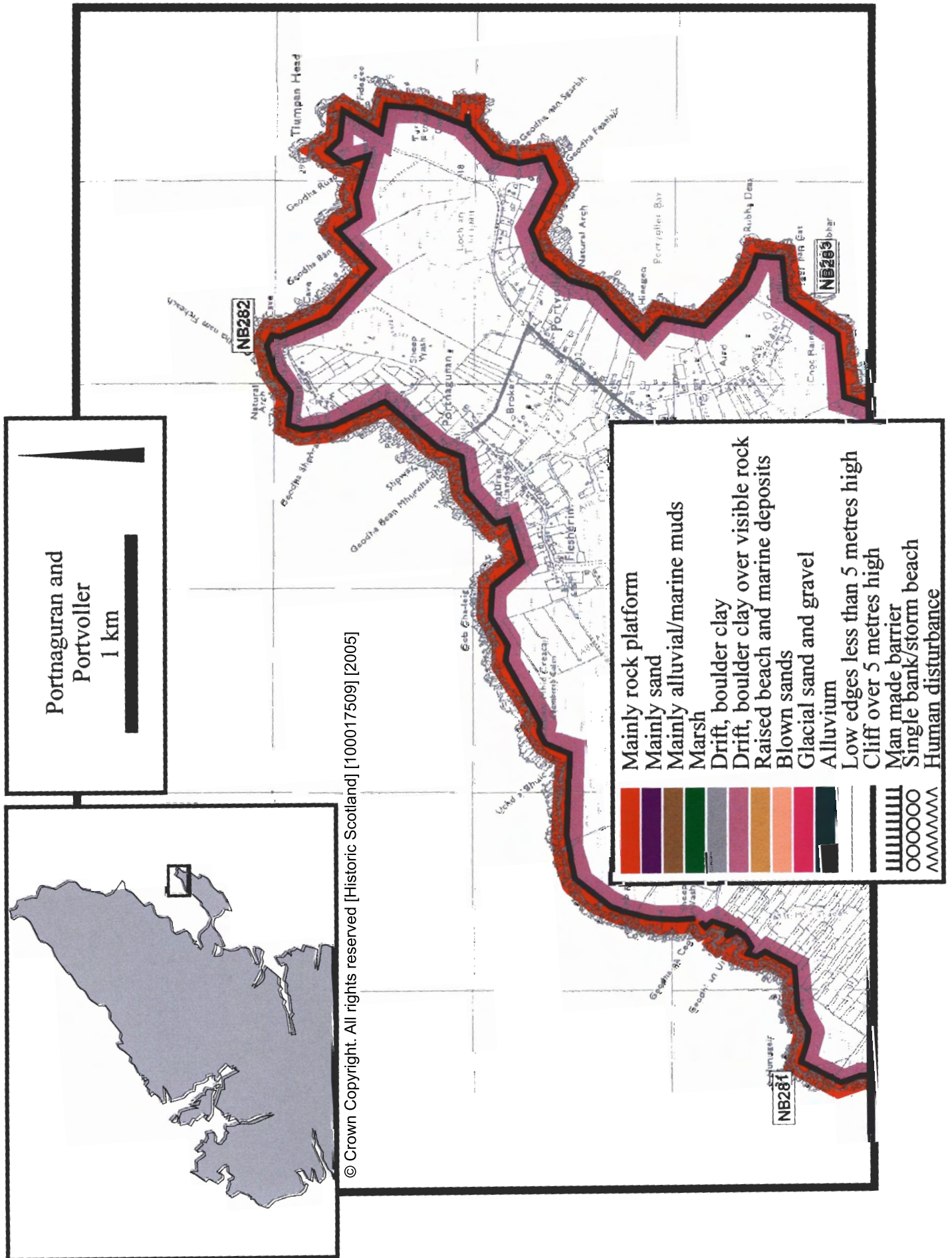
**MAP SHEET NB 52 35/NB 58 39**

5.39.6 *Overview of coastal geomorphology*

This section is dominated by high cliffs of basement Lewisian Gneiss overlain with sporadic shallow deposits of glacially derived and *in situ* weathered material.



**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 52 35/NB 58 39**



## 5.40 MAP SHEET NB 41 30/47 34, STORNOWAY HARBOUR

## 5.40.1 Overview of cultural heritage

## 5.40.1.1 Number of monuments

Scheduled	- 2	[5253 and 5347]
Recorded in the NMRS	- 15	[NB43SE 08, NB43SE 01, NB43SW 11, NB43SW 07, NB43SW 10, NB43SW 14, NB43SW 28, NB43SW 22, NB43SW 19, NB43SW 06, NB43SW 08, NB43SW 18, NB43SW 30, NB43SW 15, NB43SW 20, NB43SW 27]
Others	- 138	
<b>Total</b>	<b>- 152</b>	

## 5.40.1.2 Number of site state occurrences

Eroding (A)	- 27
Eroding/stable (B)	- 2
Stable (C)	- 123

## 5.40.1.3 Number of response occurrences

Nil	- 123
Monitor, (Baseline survey)	- 17
Detailed survey	- 3
Sample	- 0
Retrieve	- 1

## 5.40.2 Description of cultural heritage

This map sheet covers Stornoway and the surrounding townships of Sandwick and Holm. Outwith the area of Stornoway Harbour, where the coastal edge is almost completely protected by man-made walls, the coast is characterised by a mixture of shingle beaches, low eroding edges of less than 5.0 metres and (to the south of Stornoway) high sea cliff of over 5.0 metres.

The majority of the monuments on this map sheet are upstanding habitation and commercial structures that are still in use in central Stornoway (e.g. NB 4222 3278). Those of special interest include a group of military sites related to the defence of Stornoway during the Second World War. These include a bunker at Stoney Field (NB 4414 3116), a seaplane base in the grounds of the Lewes Castle College (NB43SW 30), a block house also at Lewes Castle (NB 4180 3281) and the coastal batteries at Arnish (NB43SW 27, Scheduled Ancient Monument number 5347).

Other monuments of interest include a promontory enclosure at Rubha Shilldins (Holm) (NB43SE 01) artefact scatters (NB43SE 08 and NB43SW 10), the designed landscape associated with Lewes

## COASTAL EROSION ASSESSMENT (LEWIS)

Castle College (NB 4183 3179) the Lewis Offshore Factory (NB4265 3049) and finally the sites of possible Cromwellian Forts in the vicinity of Stornoway (NB43SW 10 and NB 4375 3208).

### 5.40.3 Gazetteer of cultural heritage

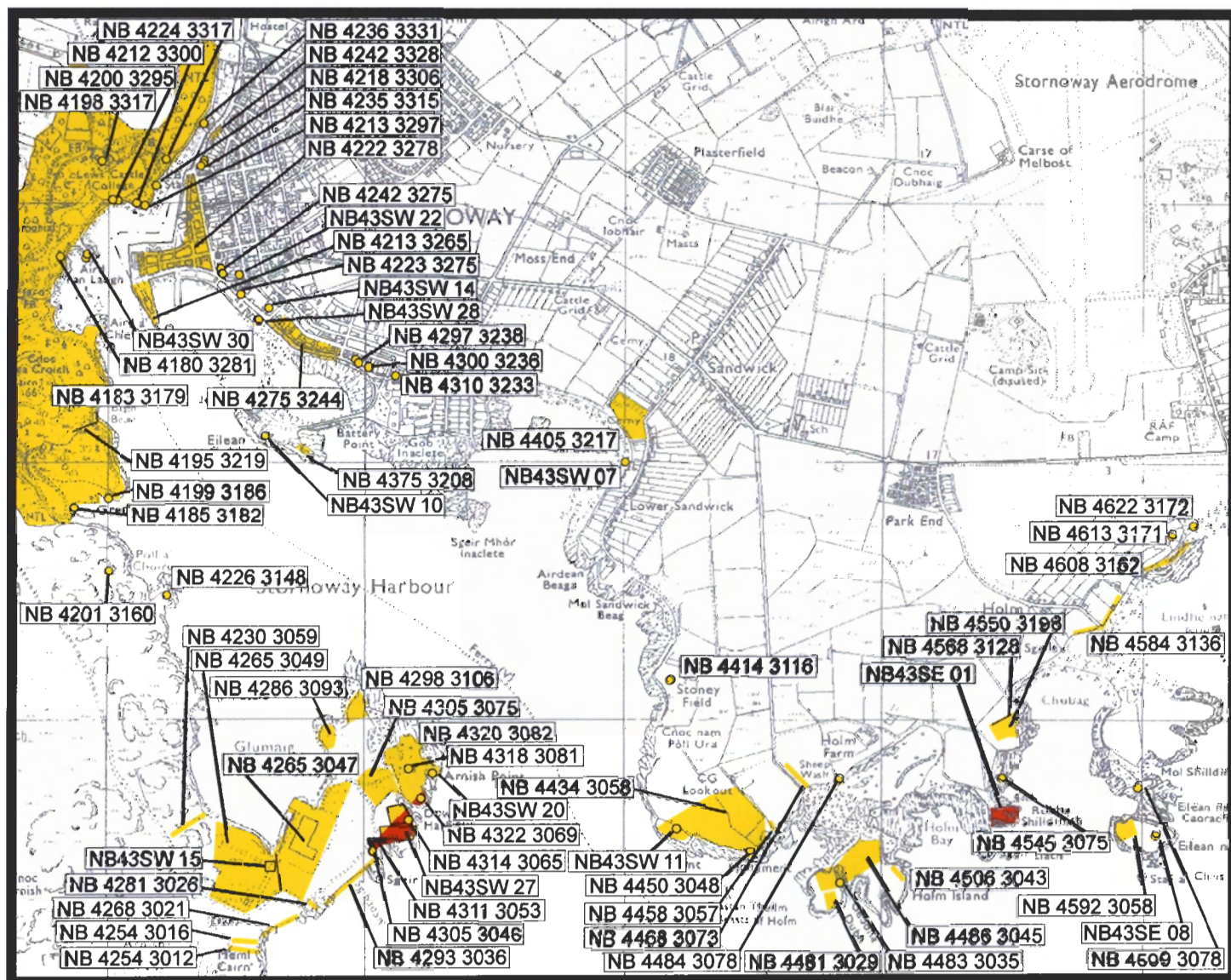
Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB 4622 3172	Holm	wooden posts emerging from shore		A	A	Unknown	Monitor
NB 4613 3171	Holm	multi-sided enclosures		A	C	Modern	Nil
NB 4608 3162	Holm	Dyke, Stone and Turf		A	A	Post Medieval	Nil
NB 4584 3136	Holm	Dyke, Stone and Turf		A	A	Post Medieval	Nil
NB 4599 3078	Mol Shilldinish	Stone Alignment, possible promontory enclosure		A	A	Prehistoric	Monitor, survey (?)
NB 4592 3058	Eilean nan Uan	Cultivation, Rigging		A	A	Unknown	Monitor (?)
NB43SE 08	Eilean nan Uan		Ceramic/pottery, pumice and slag	A	C	Prehistoric	Monitor area
NB 4568 3128	Holm	Wall		A	A	Modern	Nil
NB 4550 3198	Holm	Field System		A	A	Post Medieval	Nil
NB 4545 3075	Holm	circular arrangement of stones		A	B	Unknown	Monitor
NB 43SE 01	Rubha Shilldinish	Promontory Enclosure		A	A	Prehistoric	Monitor, survey (?)
NB 4506 3043	Holm Island	Dyke, Turf		A	A	Unknown	Monitor (?)
NB 4486 3045	Holm	Cultivation, Rigging		A	A	Pre Clearance	Monitor (?)
NB 4483 3035	Holm Island	Settlement Mound		A	A	Unknown	Monitor
NB 4481 3029	Holm	Cultivation, Rigging		A	A	Pre Clearance	Monitor (?)
NB 4484 3078	Holm	Rectilinear Building		A	A	Modern	Nil
NB 4468 3073	Holm	Stone Alignment		A	A	Post Medieval	Nil
NB 4458 3057	Holm	Stone Alignment		A	A	Post Medieval	Nil
NB 4450 3048	Holm	Cairn		A	B	Modern	Nil
NB43SW 11	Holm Point	Enclosure, Curvilinear, Drystone		A	A	Unknown	Monitor
NB 4434 3058	Holm Point	Field System		A	A	Post Medieval	Nil
NB 4414 3116	Stoney Field	WW2 Underground bunker		A	C	Modern	Nil
NB43SW 07	Sandwick		Stone (Polished)	C	C	Pre Clearance	Monitor area
NB 4405 3217	Sandwick	Enclosure, Habitational, Rectilinear, cemetery, with vaults		C	C	Post Medieval	Nil
NB43SW 10	Eilean na Gobhail	Cromwellian fort, site of		C	C	Post Medieval	Monitor

**COASTAL EROSION ASSESSMENT (LEWIS)**

NB 4375 3208	Eilean na Gobhail	Enclosure, Turf, remains of Cromwellian fort?		C	C	Post Medieval	Monitor, Survey?
NB 4310 3233	South beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4300 3236	South beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4297 3238a	South beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4297 3238b	South beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4275 3244a	South beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4275 3244b	South beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4275 3244c	South beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4275 3244d	South beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4275 3244e	South beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4275 3244f	South beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4275 3244g	South beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4275 3244h	South beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4275 3244i	South beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB43SW 28	Stornoway	lifeboat station and slip		C	C	Modern	Nil
NB43SW 14	Stornoway	Gasworks		C	C	Modern	Nil
NB 4223 3275	South beach, Stornoway	Enclosure, Habitational, Rectilinear, Star Inn		C	C	Post Medieval	Nil
NB 4213 3265	No. 1 pier, Stornoway	Enclosure, Rectilinear, ferry terminal, c. 1930		C	C	Modern	Nil
NB43SW 22	Stornoway	Municipal buildings		C	C	Modern	Nil
NB 4242 3275	South beach, Stornoway	Enclosure, Habitational, Rectilinear, British legion		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4230 3283)	North beach, Stornoway	Enclosure, Habitational, Rectilinear, baltic, 2 storeys		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4232 3284)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear, Murdo MacClean, 1871		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4233 3283)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear, James Mackenzie, late 19th		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4227 3284)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4215 3279)	North beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4230 3282)	North beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil

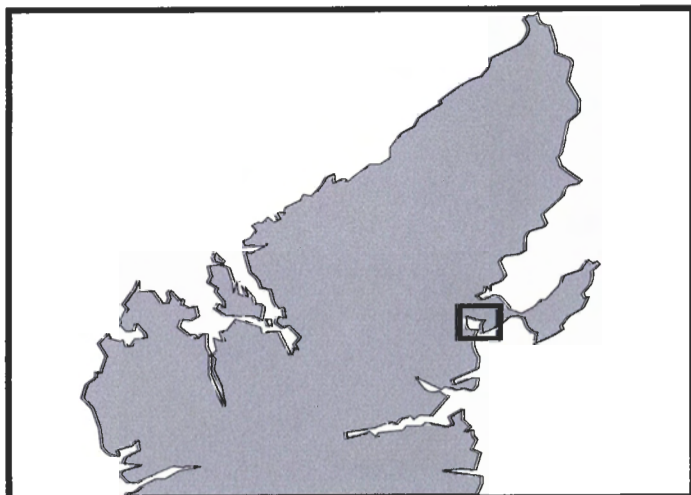


# COASTAL EROSION ASSESSMENT(LEWIS) MAP SHEET NB 41 30/NB 47 34



Stornoway Harbour

1 km



Encroached to the shore



Un-scheduled Monuments



Scheduled Monuments



Palaeo-Environment Sites

NB 1111 1111

NB 21 SW 01

Monument Reference Number

# COASTAL EROSION ASSESSMENT (LEWIS)

NB 4222 3278 (NB 4232 3289)	Cromwell Street, Stornoway	Enclosure, Rectilinear, Bank of Scotland, 1889		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4229 3281)	North beach, Stornoway	Enclosure, Habitational, Rectilinear, The Clachan, 2.5 storeys		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4284 3281)	North beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4226 3280)	North beach, Stornoway	Enclosure, Habitational, Rectilinear, prudential		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4223 3279)	North beach, Stornoway	Enclosure, Habitational, Rectilinear, Royal bank of Scotland		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4222 3280)	North beach, Stornoway	Enclosure, Habitational, Rectilinear, Royal mission to fishermen		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4231 3281)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear, coffee house, late 19th c		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4232 3287)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear, Co-op		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4214 3279)	North beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4232 3290)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear, Sardar and sons		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4231 3291)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear, DD Morrison		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4231 3297)	Cromwell Street, Stornoway	Enclosure, Rectilinear, Drystone, warehouse, 2.5 storeys		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4232 3301)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear, Royal Hotel, 19th c		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4231 3303)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear, Smiths shoe shop		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4231 3304)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear, 2.5 storey 2 dormers		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4231 3306)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear, Interior World		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4232 3308)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4232 3286)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear, MacDonalds pharmacy		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4222 3278)	Kenneth street, Stornoway	Enclosure, Habitational, Rectilinear, the Coffee Pot		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4218 3279)	North beach, Stornoway	Enclosure, Habitational, Rectilinear, Lewis hotel		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4224 3275)	South beach, Stornoway	Enclosure, Habitational, Rectilinear, Anderson, MacArthur		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4212 3280)	Quay Street, Stornoway	Enclosure, Habitational, Rectilinear, fisherman's co-op		C	C	Post Medieval	Nil



# COASTAL EROSION ASSESSMENT (LEWIS)

NB 4222 3278 (NB 4212 3277)	Quay Street, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4211 3274)	Jetty, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4212 3272)	South beach, Stornoway	Enclosure, Habitational, Rectilinear, harbour master's, 2 storey house		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4251 3265)	South beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4226 3275)	South beach, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4230 3276)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear, old town hall		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4234 3277)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4234 3276)	Cromwell Street, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4236 3275)	South beach, Stornoway	Enclosure, Habitational, Rectilinear, Clydesdale bank		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4220 3274)	South beach, Stornoway	Enclosure, Habitational, Rectilinear, The Hebridean		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4214 3276)	Bayhead, Stornoway	Enclosure, Habitational, Rectilinear		C	A	Post Medieval	Nil
NB 4222 3278 (NB 4217 3275)	Bayhead, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4222 3278)	Bayhead, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4223 3276)	Bayhead, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4226 3276)	Bayhead, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4226 3278)	Point Street, Stornoway	Enclosure, Habitational, Rectilinear,		C	C	Post Medieval	Nil
NB 4222 3278 (NB 4227 3279)	Point Street, Stornoway	Enclosure, Habitational, Rectilinear, This n That		C	C	Post Medieval	Nil
NB 4222 3278 (NB 43SW 09)	Stornoway	Cromwellian fort (site of)		C	C	Medieval	Nil
NB 4222 3278 (NB 43SW 19)	Stornoway harbour	Harbour		C	C	Modern	Nil
NB 4222 3278 (NB 43SW 06)	Stornoway	castle ruins		C	C	Medieval	Nil
NB 4222 3278 (NB 43SW 08)	Stornoway	St. Lennans church (site of)		C	C	Medieval	Nil
NB 4222 3278 (NB 43SW 18)	Stornoway Town Hall	Town Hall		C	C	Modern	Nil
NB 4235 3315a	Bayhead, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4235 3315b	Bayhead, Stornoway	Enclosure, Habitational, Rectilinear, Jenors jewellery		C	C	Post Medieval	Nil
NB 4235 3315c	Bayhead, Stornoway	Enclosure, Habitational, Rectilinear, Blagdon		C	C	Post Medieval	Nil
NB 4242 3328a	Bayhead, Stornoway	Enclosure, Habitational, Rectilinear, Macrae and Dick		C	C	Post Medieval	Nil
NB 4242 3328b	Bayhead, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil

# COASTAL EROSION ASSESSMENT (LEWIS)

NB 4242 3328c	Bayhead, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4242 3328d	Bayhead, Stornoway	Enclosure, Habitational, Rectilinear, paper shop		C	C	Post Medieval	Nil
NB 4242 3328e	Bayhead, Stornoway	Enclosure, Habitational, Rectilinear		C	C	Post Medieval	Nil
NB 4236 3331	Bayhead, Stornoway	bridge		C	C	Post Medieval	Nil
NB 4224 3317	Stornoway	19th Century folly and nearby stables		C	C	Modern	Nil
NB 4218 3306	Stornoway	landing stage		C	C	Modern	Nil
NB 4198 3317	Stornoway	Lewes castle college		C	C	Modern	Nil
NB 4213 3297	Stornoway	landing stage \ ephemeral		C	C	Post Medieval	Nil
NB 4212 3300	Stornoway	19th Century house		C	C	Modern	Nil
NB 4200 3295a	Stornoway	seawall\ grounds wall building				Modern	Nil
NB 4200 3295b	Stornoway	concrete water tank/cess pit		C	C	Modern	Nil
NB43SW 30	Stornoway	Concrete bunker, landing stage, watch tower		C	C	Modern	Nil
NB 4180 3281	Stornoway	WW2 blockhouse		C	C	Modern	Nil
NB 4195 3219	Stornoway	bridge over valley / sea		C	C	Modern	Nil
NB 4199 3186	Stornoway	corrugated roofed building		C	C	Modern	Nil
NB 4185 3182	Stornoway	modern landing stage and		C	C	Modern	Nil
NB 4183 3179	Stornoway	Designed Landscape surrounding Lewes Castle, includes sea wall and Trackways		C	C	Modern	Nil
NB 4201 3160	Stornoway	large, anthropomorphic stone pile		C	C	Unknown	Nil
NB 4226 3148	Stornoway	abandoned traditional boat		B	C	Crofting	Retrieve (?)
NB 4230 3059	Arnish	Dyke, Turf		C	C	Unknown	Nil
NB43SW 15	Arnish	Stone Object		C	C	Unknown	Nil
NB 4265 3049	Arnish	Lewis Offshore factory		C	C	Modern	Nil
NB 4265 3047	Arnish	Cultivation, Rigging		C	A	Post Medieval	Nil
NB 4286 3093	Arnish	Field System		A	A	Post Medieval	Nil
NB 4298 3106	Arnish	Field System		A	A	Post Medieval	Nil
NB 4318 3081	Arnish	Lighthouse keepers house		C	C	Modern	Nil
NB 4320 3082	Arnish	Lighthouse croft		A	A	Crofting	Nil
NB43SW 20	Arnish	Lighthouse		C	C	Modern	Nil
NB 4305 3075	Arnish	Field System		C	C	Crofting	Nil
NB 4322 3069	Arnish	WW2 blockhouse		C	C	Modern	Nil
NB 4314 3065a	Arnish	Boat Naust		E	C	Post Medieval	Nil
NB 4314 3065b	Arnish	Cultivation, Cord Rigging		A	A	Unknown	Monitor
NB 4314 3065c	Arnish	circular stone and turf building		C	C	Unknown	Nil
NB43SW 27	Arnish	WW2 twin gun emplacement		A	A	Modern	Monitor

NB 4311 3053	Arnish	Cultivation, Rigging		A	A	Post Medieval	Nil
NB 4305 3046	Arnish	WW2 blockhouse		A	C	Modern	Monitor
NB 4293 3036	Arnish	sea defence for factory		A	A	Modern	Nil
NB 4281 3026	Arnish	Dyke, Turf		C	C	Unknown	Nil
NB 4268 3021	Arnish	sea defence for factory		A	A	Modern	Nil
NB 4254 3016	Arnish	Dyke, Stone and Turf		C	C	Post Medieval	Nil
NB 4254 3012	Arnish	Dyke, Stone and Turf		B	B	Post Medieval	Nil

#### **5.40.4 Overview of erosion**

This section can be split into six general zones of erosion including;

- the eroding low rock platform and shingle south of Holm (NB 296 to NB 298)
- the eroding low cliff from Holm to Lower Sandwick (NB 299 to NB 303)
- the stable shingle bay of Mol Sandwick (NB 304)
- the generally stable and protected shore line of north-west portion of Stornoway Harbour (NB 305 to NB 308)
- the stable low cliff and rock platform from Greeta Island to Arnish (NB 309 to NB 310)
- the generally eroding headland of Arnish (NB 311 to NB 315)

The first zone consists of eroding low coastal edge of sand and shingle displaying discontinuous erosion scars in the substrate backing the foreshore. This pattern is interrupted by the eroding low rock platform tidal island of Eilean nan Uan (NB 297). Archaeological remains have been noted in the past on this island (e.g. NB43SE 08) and so this area would deserve further periodic monitoring.

The eroding low cliff of the next zone displays active signs of marine erosion, with cliff slips and occasional cliff failure over a number of metres. This regime is interrupted by the eroding sand and shingle beach of Holm Farm (NB 300), which has a small area of machair backed on to it. This has signs of both active marine and aeolian erosion including erosion scars, limited wind deflation and shingle deposited well beyond the shingle ridge. Most of the sites along this section are experiencing erosion and so regular monitoring is required.

The next zone consists of the stable sand and shingle beach of Mol Sandwick, whose immediate hinterland is protected by the large shingle ridge and small stretches of man made barriers. The next zone represents the protected shore line of the north-west portion of Stornoway Harbour, which includes the entire of Stornoway and the protected front of the National Trust land down to Greeta Island (NB 309). No sites are threatened in this zone.

The beginning of the next zone is marked by the small gorge and outwash of the river Abhainn Ghrioda, resulting in the formation of a micro-delta of alluvial muds and sands, before running along unprotected but stable low cliff and rock platform to Arnish. No sites are threatened in this zone.

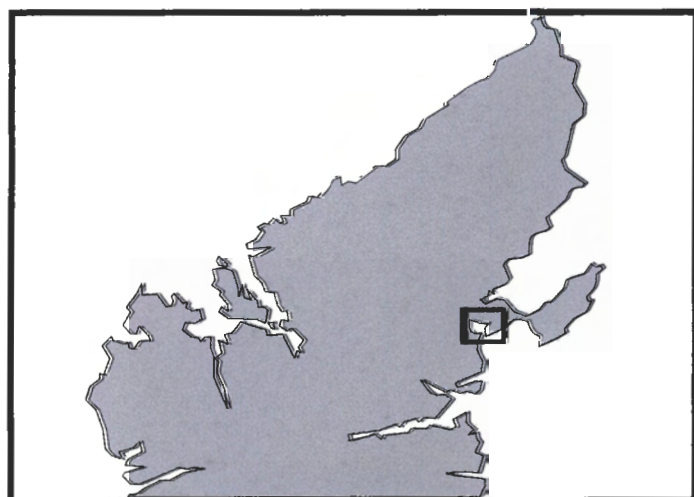
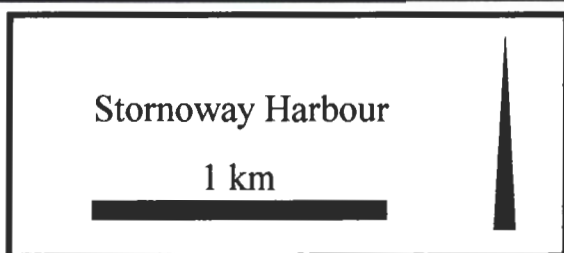
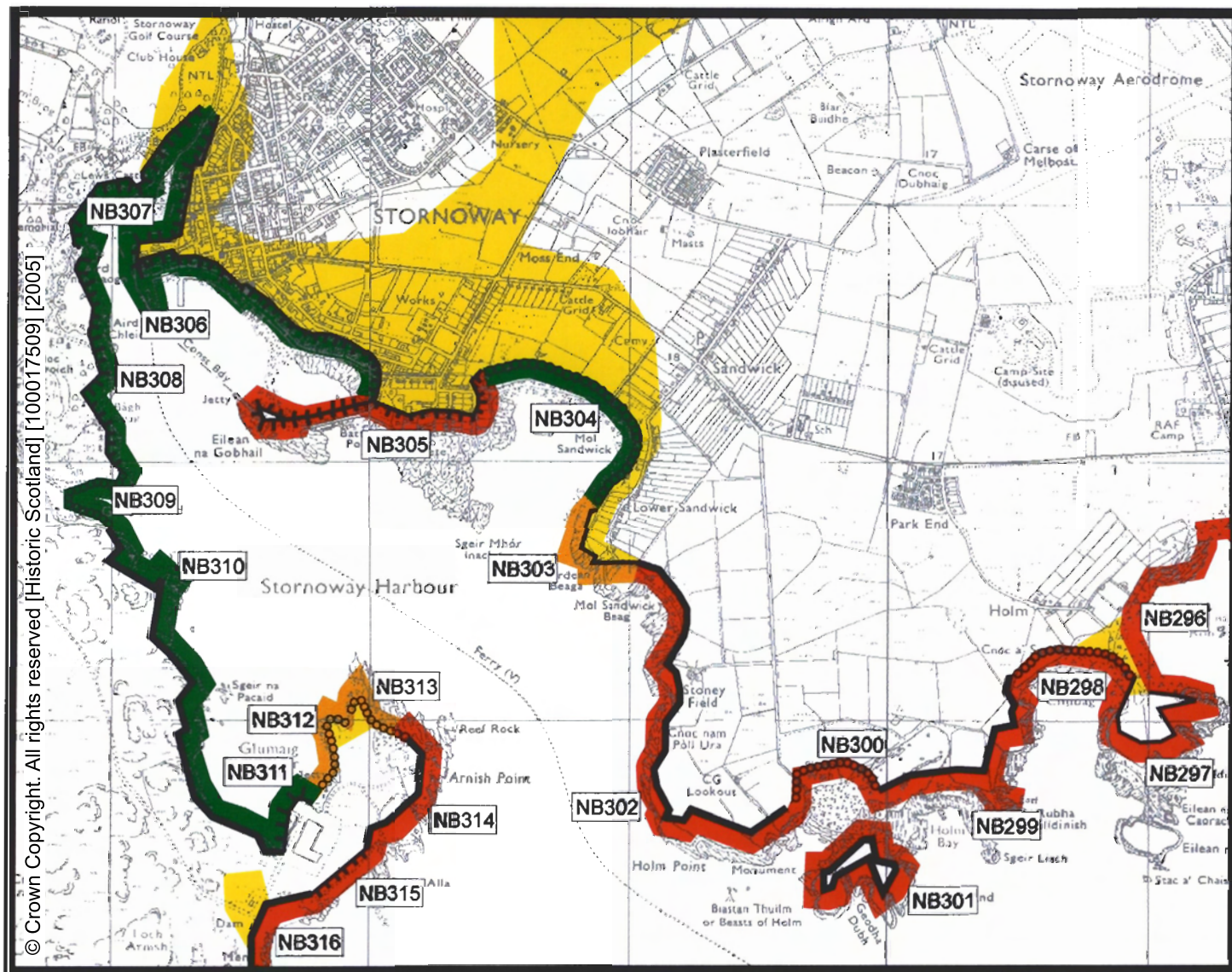
The final zone represents the generally eroding peninsula of Arnish. The concreted stretch fronting the factory (NB 311) is stable whilst the rest of the zone shows active signs of erosion, with erosion scars in the shingle and substrate foreshore (NB 312 and NB 313), the cliffs (NB 314) and the ridge of substrate deliberately deposited on the southern side of the factory (NB 315). There a few sites within the erosion zone, though the edge of the W.W.II installation (NB43SW 27) deserves further periodic monitoring.

#### **5.40.5 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 296	NB 465 317	A-Eroding	Branahuie	Mainly Sand	Drift, Boulder clay	New Red Sandstone	2300.072	Shingle / storm bank
NB 297	NB 461 307	A-Eroding	Eilean nan Uan	Mainly Rock Platform	Drift, Boulder clay over visible rock	New Red Sandstone	2060.141	Low edge < 5m.
NB 298	NB 457 318	A-Eroding	Chubag	Mainly Sand	Drift, Boulder clay	New Red Sandstone	662.661	Shingle / storm bank
NB 299	NB 455 307	A-Eroding	Rubha Shilldinish	Mainly Rock Platform	Drift, Boulder clay	New Red Sandstone	882.187	Cliff over 5m.
NB 300	NB 450 307	A-Eroding	Holm Farm	Mainly Sand	Wind Blown Sand	New Red Sandstone	1023.373	Shingle / storm bank
NB 301	NB 449 303	A-Eroding	Holm Island	Mainly Rock Platform	Drift, Boulder clay	New Red Sandstone	1510.891	Cliff over 5m.
NB 302	NB 442 307	A-Eroding	Holm Point	Mainly Rock Platform	Drift, Boulder clay over visible rock	New Red Sandstone	1669.124	Cliff over 5m.
NB 303	NB 439 316	B-Eroding/ Stable	Sandwick	Mainly Rock Platform	Drift, Boulder clay	New Red Sandstone	676.572	Low edge < 5m.
NB 304	NB 438 321	C-Stable	Sandwick	Mainly Rock Platform	Drift, Boulder clay	New Red Sandstone	810.832	Shingle / storm bank
NB 305	NB 430 321	A-Eroding	Gob Inaclete	Mainly Rock Platform	Covered	New Red Sandstone	977.077	Man made barrier
NB 306	NB 423 327	C-Stable	Stornoway	Mainly Sand	Covered	New Red Sandstone	1802.807	Man made barrier



**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 41 30/NB 47 34**



NA001	Cell number
<span style="color: red;">■</span>	Eroding
<span style="color: orange;">■</span>	Eroding - Stable
<span style="color: green;">■</span>	Stable
<span style="color: lightblue;">■</span>	Stable - Depositing
<span style="color: darkblue;">■</span>	Depositing
<span style="color: magenta;">■</span>	Depositing and Eroding
<span style="color: gray;">—</span>	Low edges less than 5 metres high
<span style="color: black;">—</span>	Cliff over 5 metres high
<span style="color: black;">     </span>	Man made barrier
<span style="color: black;">OOOOOO</span>	Single bank/storm beach
<span style="color: black;">AAAAAAA</span>	Human disturbance
<span style="color: yellow;">■</span>	Land below 10 metres



NB 307	NB 419 328	C-Stable	Aird nan Laogh	Mainly Alluvial Sand/Mud	Covered	New Red Sandstone	1583.790	Man made barrier
NB 308	NB 419 322	C-Stable	Bagh Beag	Mainly Rock Platform	Covered	Gneiss	880.097	Man made barrier
NB 309	NB 418 318	C-Stable	Greeta Island	Mainly Alluvial Sand/Mud	Drift, Boulder clay	Gneiss	431.772	Shingle / storm bank
NB 310	NB 422 312	C-Stable	Sgeir na Pacaid	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	1633.577	Low edge < 5m
NB 311	NB 427 306	C-Stable	Glumaig Harbour	Mainly Sand	Covered	New Red Sandstone	703.657	Man made barrier
NB 312	NB 430 309	B-Eroding/ Stable	Arnish Point	Mainly Alluvial Sand/Mud	Glacial sand and Gravel	New Red Sandstone	369.726	Shingle / storm bank
NB 313	NB 429 309	B-Eroding/ Stable	Glumaig Harbour	Mainly Rock Platform	Glacial sand and Gravel	New Red Sandstone	515.874	Shingle / storm bank
NB 314	NB 432 307	A-Eroding	Arnish Point	Mainly Rock Platform	Glacial sand and Gravel	New Red Sandstone	1059.135	Cliff over 5m.
NB 315	NB 428 302	A-Eroding	Sgibadale	Mainly Sand	Glacial sand and Gravel	New Red Sandstone	547.322	Man made barrier
NB 316	NB 425 300	A-Eroding	Arnish	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	170.709	Cliff over 5m.

#### **5.40.6 Overview of coastal geomorphology**

The descriptions of the geomorphology will follow the breakdown of the section into the general erosion zones above. The first zone consists of sand and shingle foreshores backed by eroding improved land with visible substrate of glacially derived and *in situ* weathered material. The tidal island (NB 297) consists of eroding low rock platform of Permian and Triassic undifferentiated New Red Sandstone.

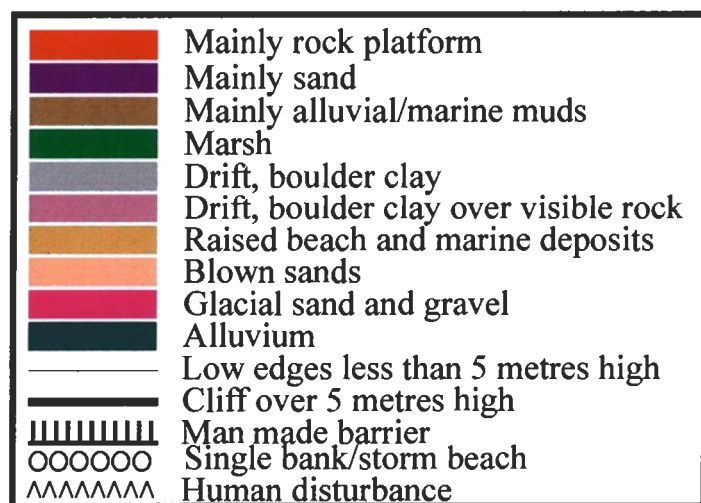
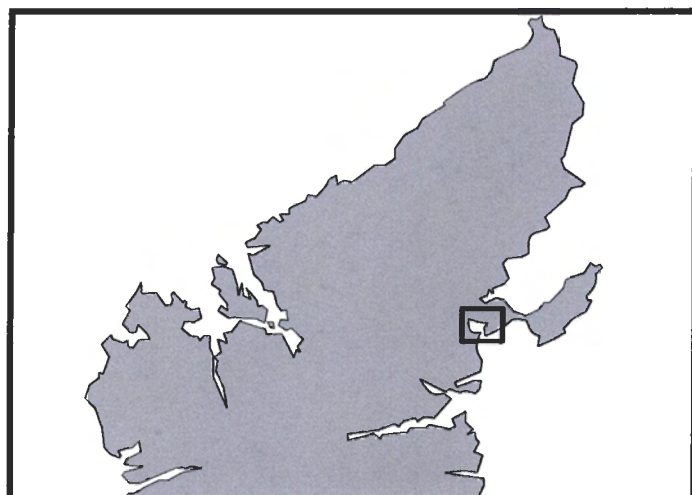
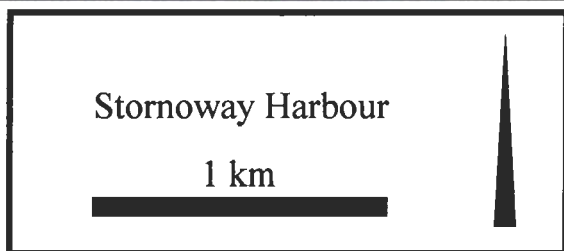
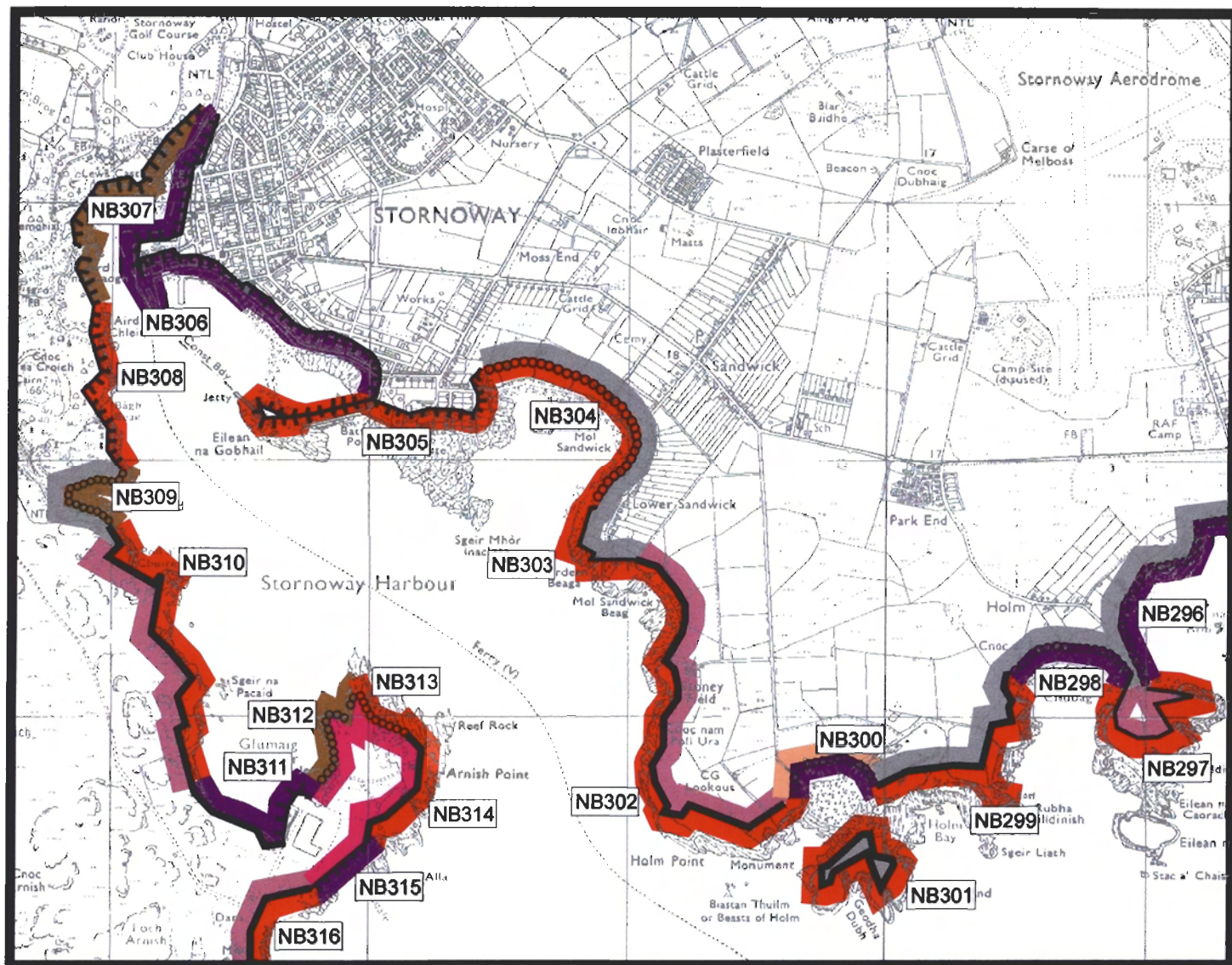
This also represents the underlying geology of the eroding low cliff of the next zone, which is only interrupted by the beach of Holm Farm. This consists of a long intertidal zone of mainly sand with the upper beach covered by a shingle ridge which is in turn backed by a small zone of wind blown soil, which has many characteristics of machair.

Following this zone is the sand and shingle beach of Mol Sandwick which again consists of a sand lower beach and intertidal zone, with a shingle upper beach backed by croftlands.

The next zone is then protected by a sea wall along the entire of its front. In front of this concrete lies stable marine sands, muds and shingle. At some point within this protected and covered zone is the south-westerly transition from Permian and Triassic undifferentiated New Red Sandstone to

**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 41 30/NB 47 34**

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Lewisian Gneiss which underlies most of Lewis. Hence, the next section of low cliff (NB 310) geom map consists of stable well-vegetated basement Lewisian Gneiss, presumably overlain by sporadic shallow deposits of glacially derived and *in situ* weathered material. Conversely, Arnish peninsula reverts back to the softer sandstone, which accounts for the switch to the predominantly erosive regime of this zone.

The final erosion unit is underlain by Lewisian Gneiss and so Arnish represents the final pocket of sandstone in the study area.

**5.41 MAP SHEET NB 39 25/NB 44 30, ARNISH TO RANISH****5.41.1 Overview of cultural heritage****5.41.1.1 Number of monuments**

Scheduled	- 0	
Recorded in the NMRS	- 1	[NB32NE 04]
Others	- 13	
<b>Total</b>	<b>- 14</b>	

**5.41.1.2 Number of site state occurrences**

Eroding (A)	- 0
Eroding/stable (B)	- 1
Stable (C)	- 13

**5.41.1.3 Number of response occurrences**

Nil	- 13
Monitor, (Baseline survey)	- 0
Detailed survey	- 1
Sample	- 0

**5.41.2 Description of cultural heritage**

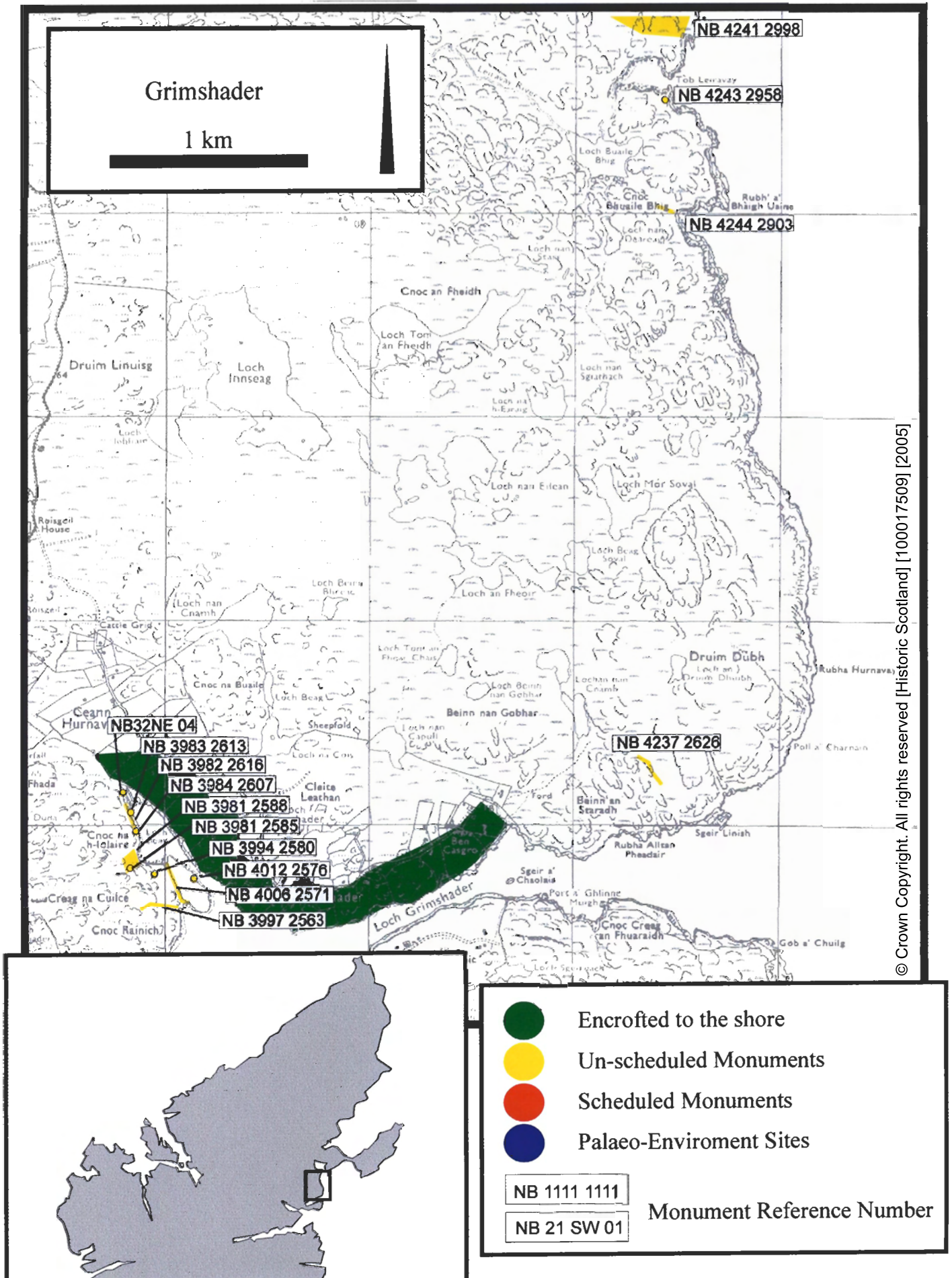
This map sheet is dominated by terrain characterised by high sea cliffs of more than 5.0 metres backed by peat covered moorland. The sites here are all believed to be related to post-medieval, pre-crofting and crofting periods of settlement. Sites of interest on this map include a curvilinear habitation enclosure (NB 4243 2958), a ships boiler (NB 3981 2588) and a horizontal mill at Grimshader (NB32NE 04).

**5.41.3 Gazetteer of cultural heritage**

Label	Locale	Structural elements	Artefact Elements	Matrix State	Site State	Period	Recommended action
NB 4241 2998	Tob Leiravay	Cultivation, Rigging		C	C	Post Medieval	Nil
NB 4243 2958	Cnoc Bhuaile Bhig	Enclosure, Habitational, Curvilinear, Turf		C	C	Unknown	Nil
NB 4244 2903	Beinn an Staradh	Dyke, Stone and Turf		C	C	Unknown	Nil
NB 4237 2626	Grimshader	Dyke, Stone and Turf		C	C	Unknown	Nil
NB32NE 04	Grimshader	Mill, Horizontal		C	C	Post Medieval	Nil
NB 3982 2616	Grimshader	Dyke, Drystone		C	C	Post Medieval	Nil
NB 3983 2613	Grimshader	Dam Foundations		B	B	Unknown	Nil
NB 3984 2607	Grimshader	Ships boiler		C	C	Modern	Nil
NB 3981 2588	Grimshader	Cultivation, Rigging		C	C	Post Medieval	Nil
NB 3981 2585	Grimshader	Reveted platform		C	C	Unknown	Nil
NB 3994 2580	Grimshader	Enclosure, Habitational, Rectilinear, Turf and stone		C	C	Unknown	Nil
NB 4006 2571	Grimshader	Dyke, Stone and Turf		C	C	Crofting	Nil
NB 4012 2576	Grimshader	Rotting boat hulk		C	C	Modern	Nil
NB 3997 2563	Ranish	Dyke, Stone and Turf		C	C	Post Medieval	Nil



**COASTAL EROSION ASSESSMENT (LEWIS)  
MAP SHEET NB 39 25/NB 44 30**



#### **5.41.4 Overview of erosion**

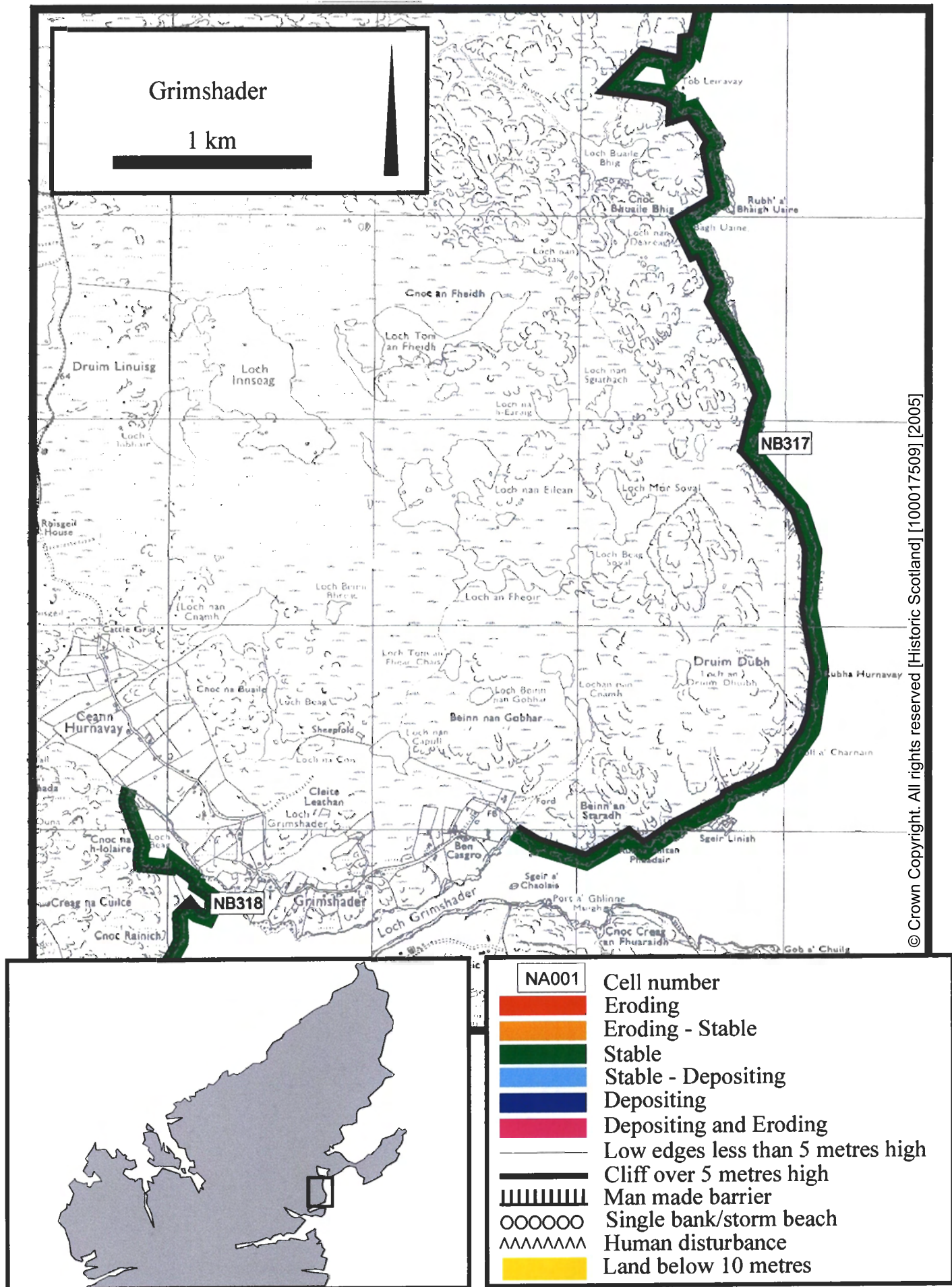
The final section of the survey can split into two general zones of erosion; the stable cliff and rock platform from Arnish to Grimshader (NB 317) and the stable low rock platform from Grimshader to Ranish (NB 318). No sites in either zone are undergoing erosion, apart from the dam foundations (NB 3983 2616) which are very slowly being broken up by direct fluvial action.

#### **5.41.5 Gazetteer of geomorphic cells**

Label	NGR	Erosion class	Locale	Foreshore Geomorphology	Hinterland geomorphology	Geology	Length meters	Geomorphic modifier
NB 317	NB 426 277	C-Stable	Arnish to Grimshader	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	6763.903	Cliff over 5 m.
NB 318	NB 400 257	C-Stable	Grimshader to Ranish	Mainly Rock Platform	Drift, Boulder clay over visible rock	Gneiss	1549.907	Shingle / storm bank



**COASTAL EROSION ASSESSMENT(LEWIS)**  
**MAP SHEET NB 39 25/NB 44 30**

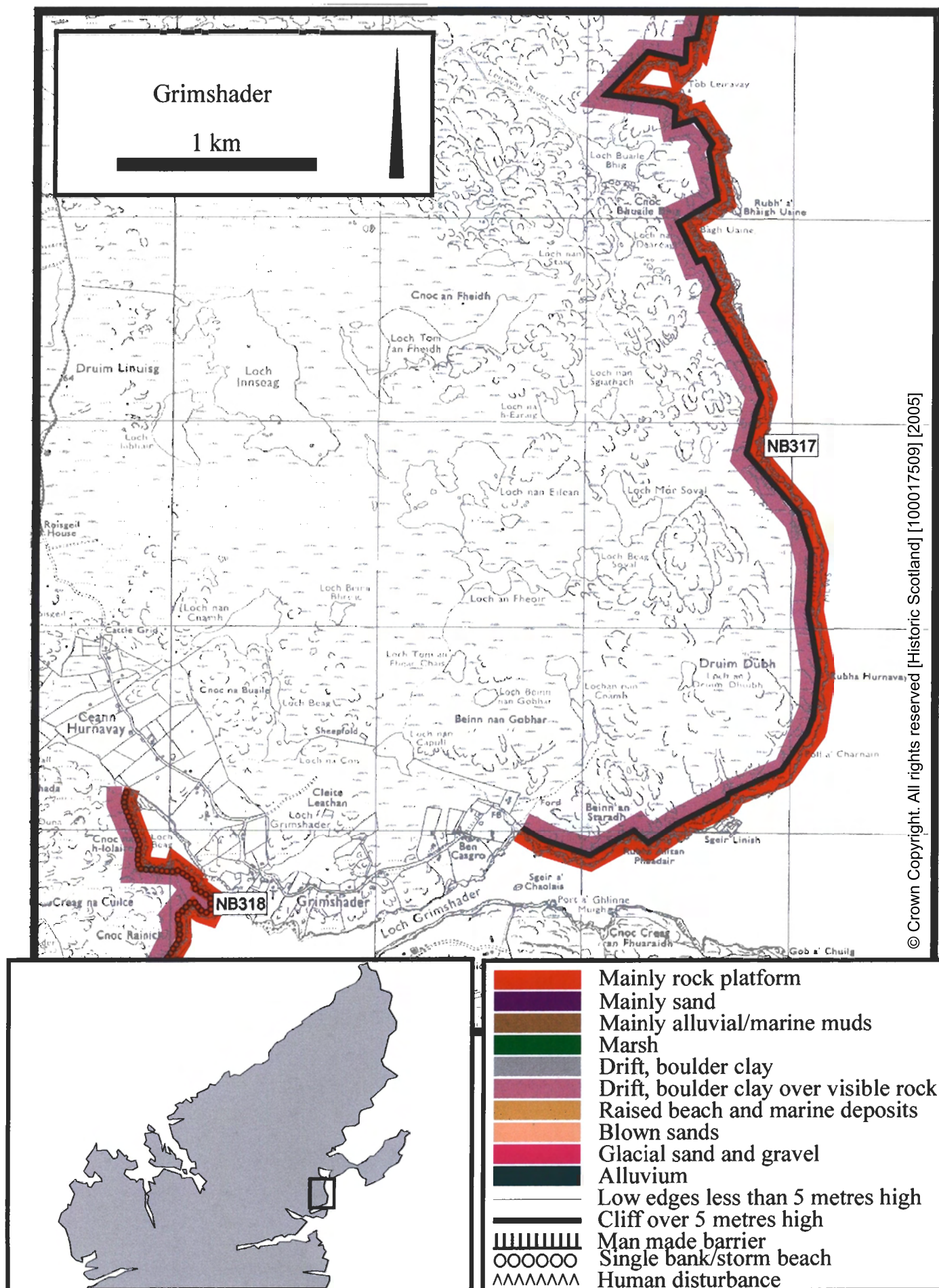


5.41.6 *Overview of coastal geomorphology*

The entire of this section is underlain by basement Lewisian Gneiss, of either stable cliff or low rock platform. Both types of relief are well-vegetated and stable and are presumably overlain by sporadic shallow deposits of glacially derived and *in situ* weathered material.



**COASTAL EROSION ASSESSMENT(LEWIS)  
MAP SHEET NB 39 25/NB 44 30**







## 6.0 SUMMARY OF RESULTS

### 6.1 EROSION CELLS

The results below were obtained through analysis of the 319 erosion cells recorded during field observations taken in July and August 1996. The total length covered by the erosion cells is *circa* 441 kilometres. This figure was obtained by linear measurements from 1:25000 Ordnance Survey maps.

#### 6.1.1 Data presentation

The results are presented in three basic groups of data starting with the overall survey before comparing the east and west coast data sets and inspecting the erosion cells within the coastline of sand and machair in more detail. Each set of data is presented in the form of two graphs which display;

- the frequency and relative percentage by erosion class for the erosion cells
- the corresponding numerical length and relative percentage of coastline by erosion class in the specific data group.

#### 6.1.2 Data analysis

##### 6.1.2.1 Overall results

The results from the entire data set of 319 erosion cells can be seen in Figures 4 and 5. It can be seen that the overall erosion regime is characterised by erosion of the coastline, with approximately 29% of the coastline actively eroding with a further 34 % of the coast showing some signs of erosion. Only 34 % of the coastline was seen to be stable with and less than 1% of its length displaying a predominantly depositing regime.

This massive imbalance between the regimes of erosion and deposition may be a function of the inaccuracy of the field observations, with signs of erosion being more obvious than those of active deposition. Generally this data shows that at the time of fieldwork much of the coastline was under a predominantly erosive regime. This has a major impact on the strategies for management of the various resources within the coastal zone. These strategies should be formulated using the observations

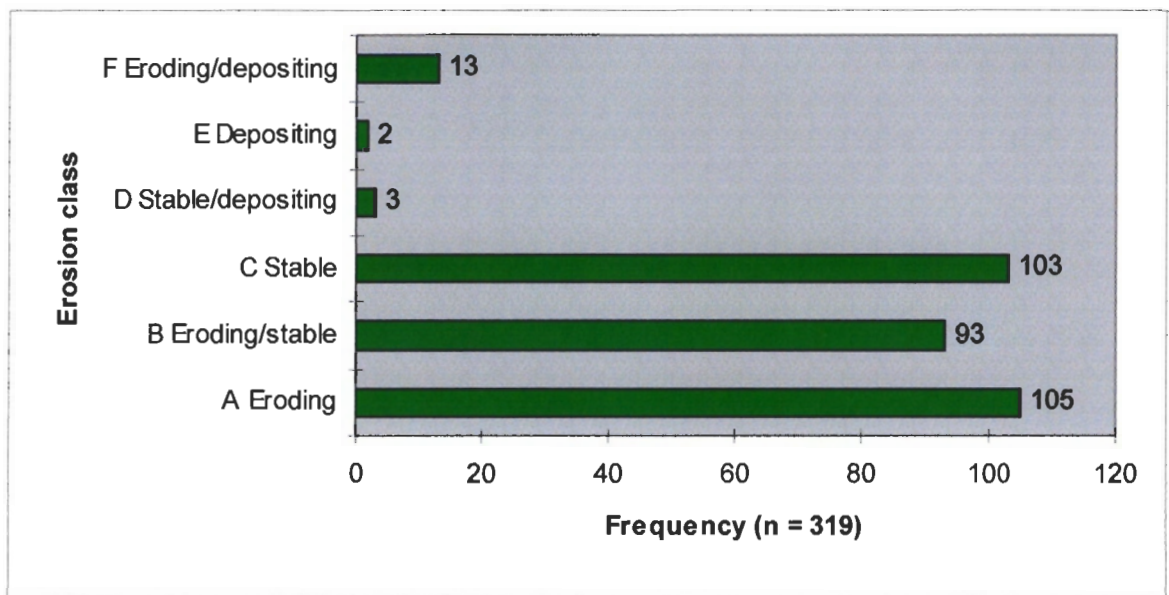


Figure 4, Breakdown of erosion cells by erosion class (entire linear survey)

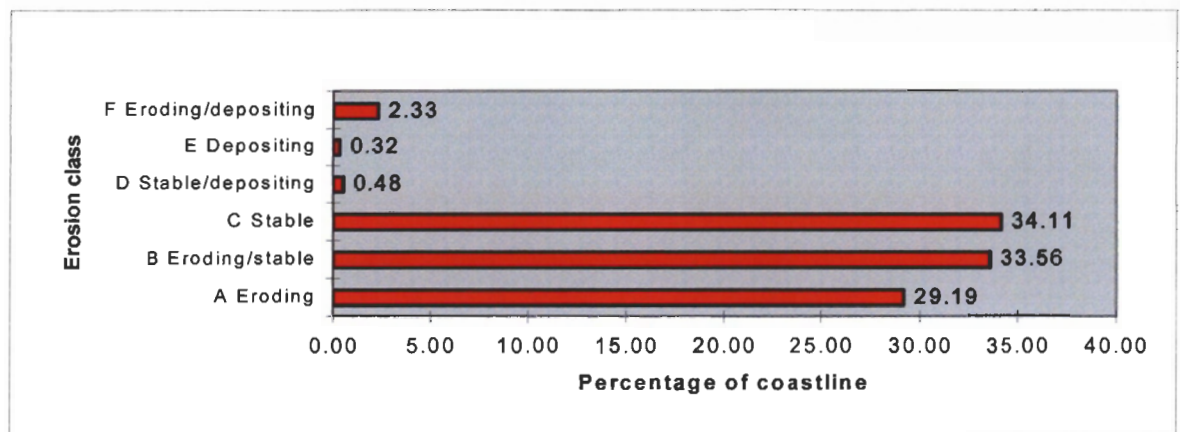
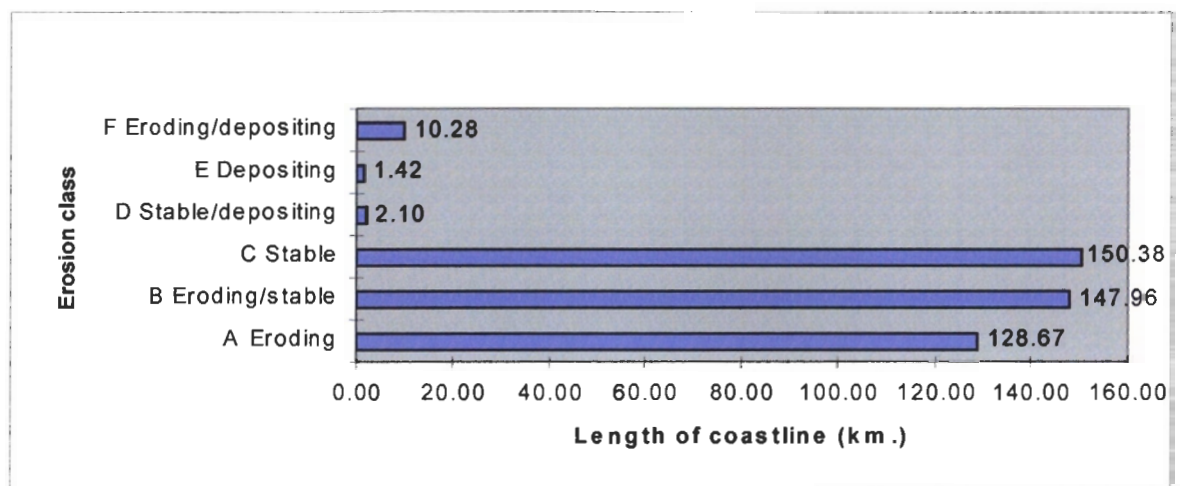


Figure 5, Length and percentage of coastline by erosion class (entire linear survey)

on the scale both of the individual erosion cell within a specific map sheet and the more general data patterns observed in the wider data set. During field observations it was noted that the west coast seemed to be enduring more erosion than the east coast and that machair systems were particularly affected by direct marine erosion. These field observations are tested and the results analysed in sections 6.1.2.2 and 6.1.2.3.

#### 6.1.2.2 *Comparison of results from the west and east coasts*

The hypothesis that the west coast was undergoing more erosion than the east coast was formulated during fieldwork. This was thought to be a function of the west coast being in direct line of the severe storms and marine action from the Atlantic in comparison to the *relatively* sheltered east coast.

This was an important distinction as approximately 78% of the archaeological sites were located on the west coast. However, when the two data sets were compared (Figures 6 and 7) it could be seen that the east coast was experiencing the greater erosion with approximately 39% of the coast definitely eroding and a further 26% eroding/stable compared to the west coast where 23% was definitely eroding and 38% was eroding/stable.

This apparent negation of the initial hypothesis can be explained through more detailed examination of the geomorphic profiles of the sections. For example, though there are large stretches of generally stable high cliff on the east coast, there are also long stretches of eroding sand beaches and machair which are different in character to the generally smaller pocket beaches of the west coast. Also on the east coast there are long stretches of softer New Red Sandstone cliffs to the north and east of Stornoway. These were generally showing signs of active erosion. Conversely, most of the underlying geology of the west coast is harder Lewisian Gneiss, a sizeable proportion of which consists of stable low rock platforms and cliff within the more sheltered sea lochs of east, west and Little Loch Roag. It was clear however that the coastlines of sand and machair in both the east and west coast were undergoing both erosion and deposition causing more detailed analysis of the erosion cells within machair zones.

# COASTAL EROSION ASSESSMENT (LEWIS)

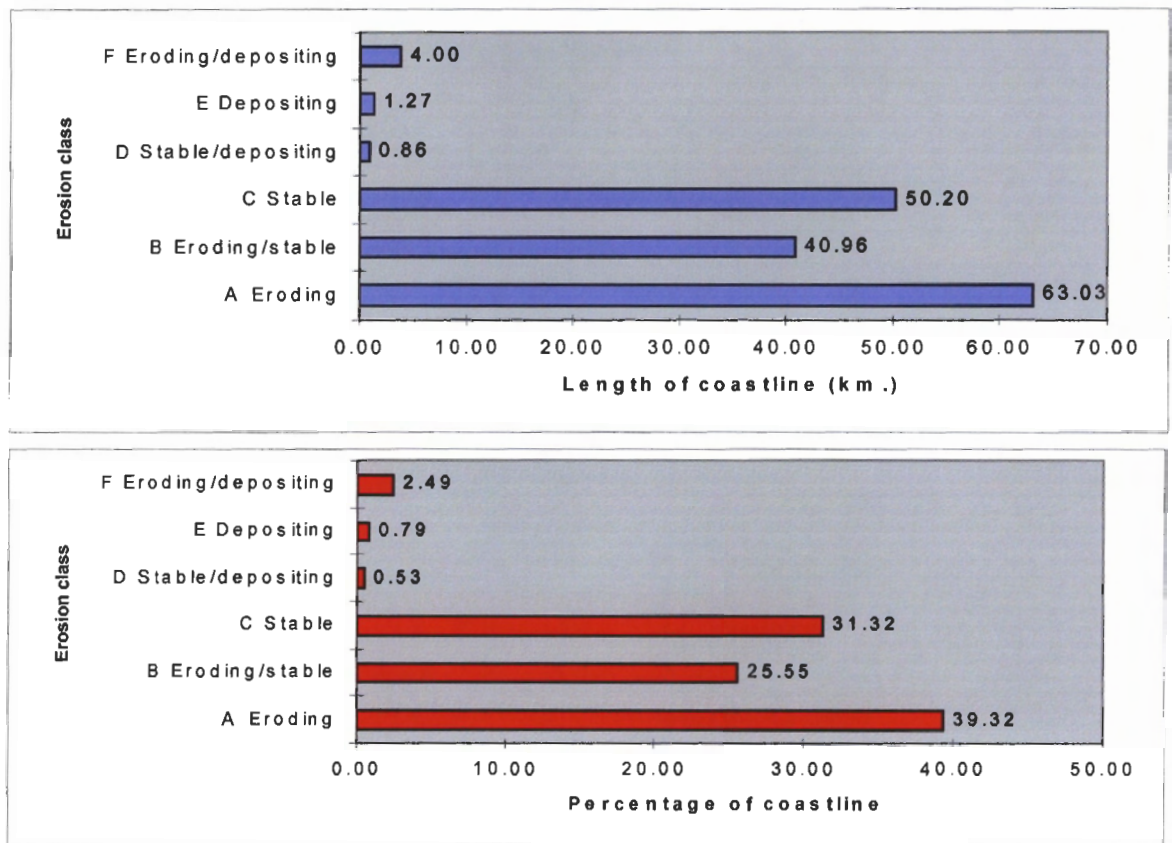


Figure 6, Length and percentage of coastline by erosion class (east coast)

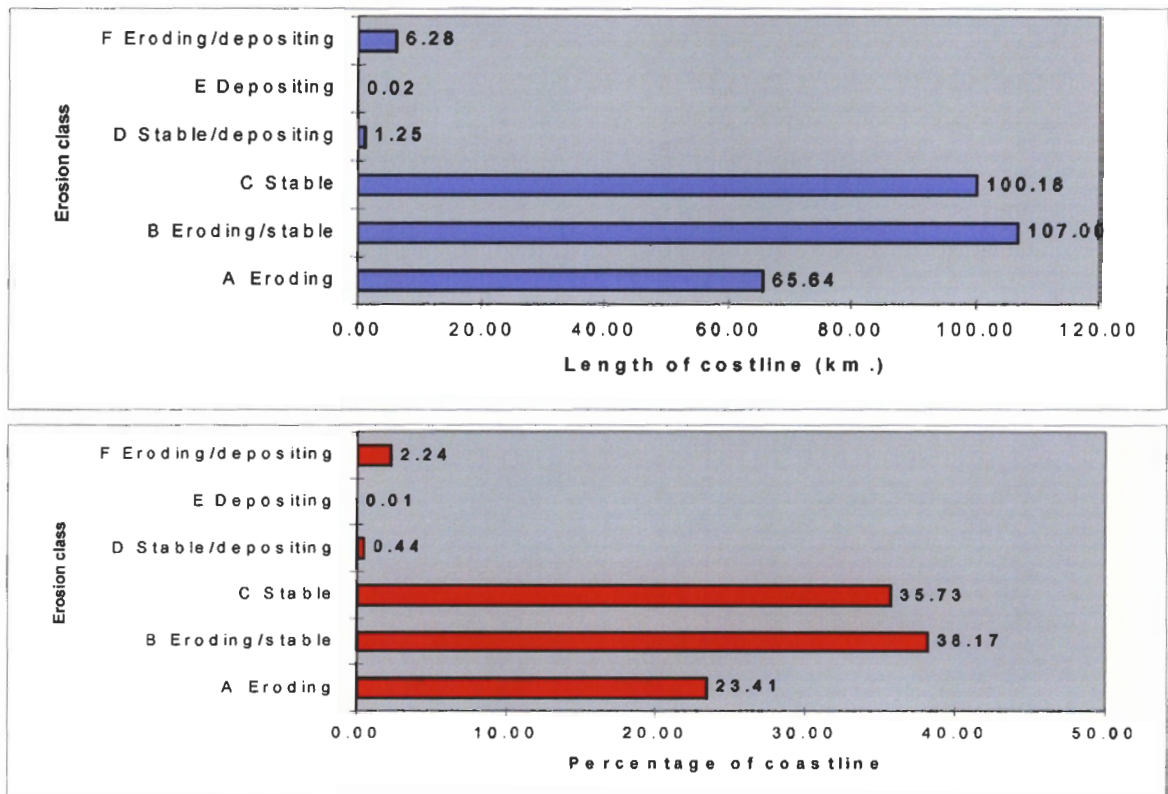


Figure 7, Length and percentage of coastline by erosion class (west coast)



6.1.2.3 *Results from the sandy beaches and machair zones*

During the fieldwork it was obvious that many of the sand and machair systems encountered were more dynamic in their erosion regimes than the other systems observed. Also, the machair areas have acted as a focus for human settlement from prehistory to the modern day resulting in numerous rich archaeological sites being recorded. Many of these have, during excavation, been shown to be unrivalled for their preservation of structural remains, bone and shell (*cf.* Cnip wheelhouse complex (Harding and Armit 1990) and Bostadh Beach (Neighbour and Burgess 1996)).

Many previous archaeological and environmental surveys (Ritchie and Mather 1970, Cowie 1994, Ramsay and Brampton 1995, Burgess and Church 1996) have had a bias towards these areas though none of them has presented comparative data to show the justification for this concentration of research and assessment. All the erosion cells from sandy beaches and machair are presented in figures 8 and 9. Of the approximately 33 kilometres of sand and machair coastline covered by this study, 50% was definitely eroding with 26% eroding/stable and only 4.5% stable. This shows that within the wider framework of the generally eroding regime, the sand and machair coastlines act as erosion focuses. The low level of stability was particularly marked when compared to the overall stable proportion of the entire study area which amounts to *circa* 34%.

Sand and machair systems also act as deposition foci with approximately 7% such coastlines depositing and a further 13% showing signs of erosion and deposition. A number of implications can be drawn for the sand and machair systems;

- due to the ease of transport by water and wind action, coupled with the inherent high levels of erodibility of the matrix (Summerfield 1991), machair systems are extremely dynamic which means that the observed results may change from season to season. The results presented here only relate to the erosion regime occurring at the time of fieldwork (July and August 1996) and the more long term predictions for a particular area can only be gained through comparison with further surveys, using a similar methodology, periodically undertaken within the study area.
- The threat to the archaeology within the machair zone is twofold being predominantly from erosion of the archaeological remains but also from the changing 'archaeological visibility' that occurs within the system. For example the potentially unique Mesolithic lithic scatter located by

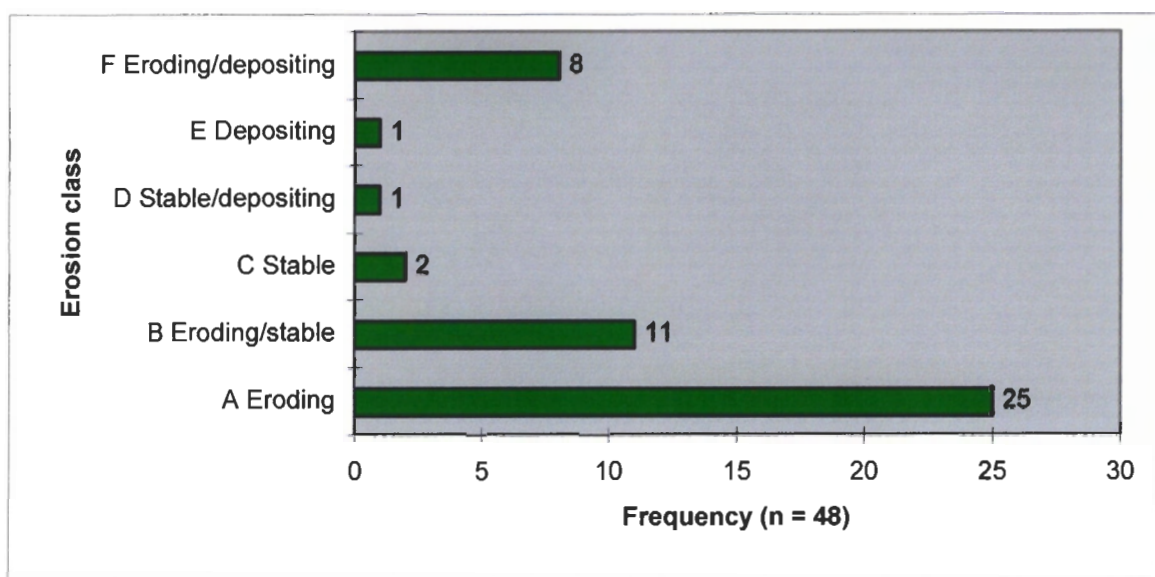


Figure 8, Breakdown of erosion cells by erosion class (sand and machair zones)

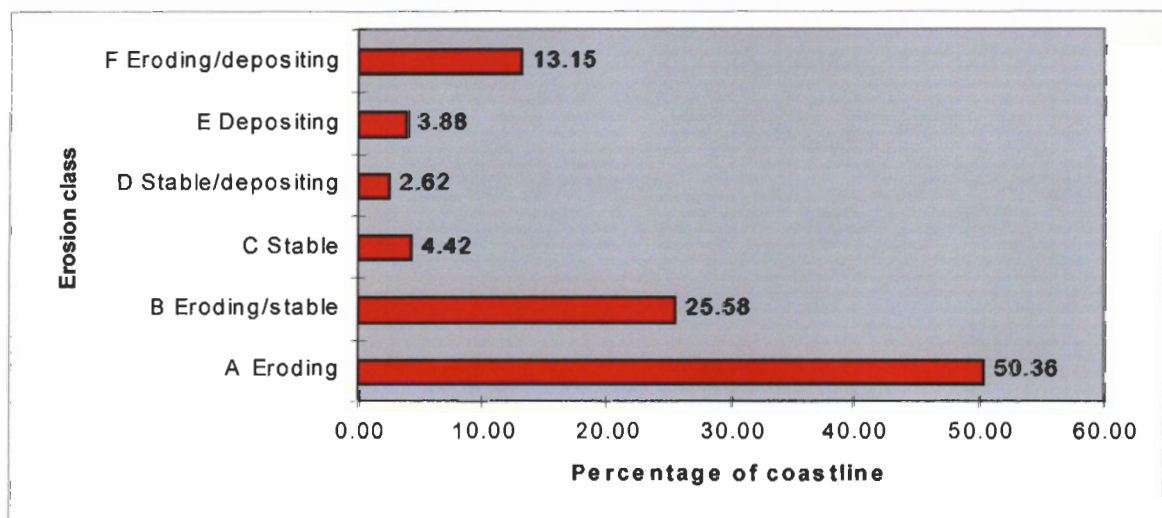
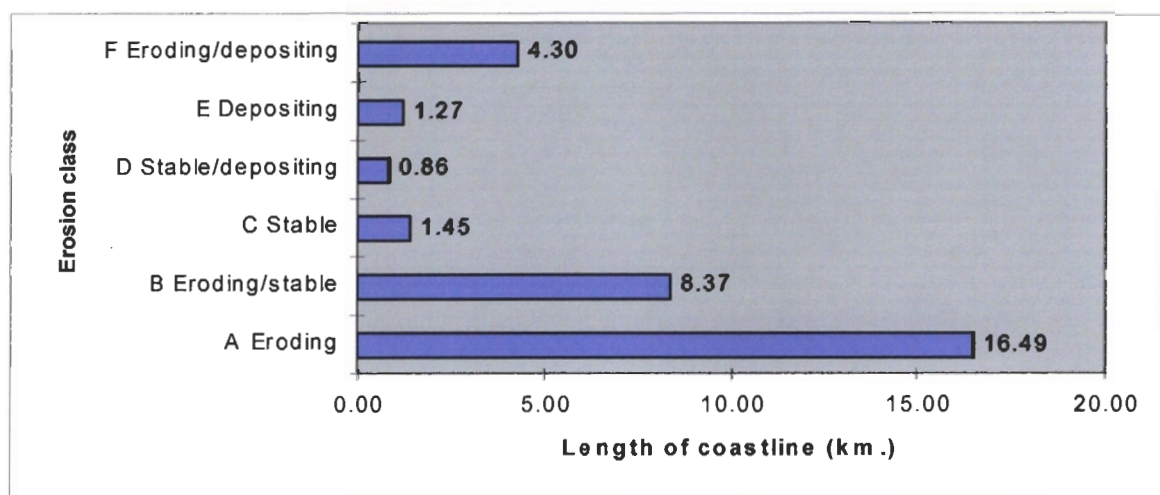


Figure 9, Length and percentage of coastline by erosion class (sand and machair zones)

Lacaille at Traigh na Berie (Lacaille 1937) has never been relocated following sand accretion and as such has been lost to archaeological research. At the same time the eroding middens within the same zone will be lost in the immediate future.

It is obvious, as was highlighted by all previous surveys and assessments, that the machair should be one of the priority areas for any co-ordinated and regular monitoring scheme stemming from this research.

### 6.1.3 *Summary of erosion cell results*

The statistical analysis of these results confirms that much of the coastline within the study area is experiencing erosion (29% is definitely eroding with 34% eroding/stable) whilst *circa* 33% of the coast is stable and less than 4% experiences deposition.

Within this framework, the sand and machair zones were proven statistically as being erosion and deposition focuses though surprisingly there was no major difference in the erosion/deposition profile between the east and west coasts. However, it must be appreciated that these results are based on the observed conditions of the summer of 1996, and as such only serve as a general guide with limited time depth, the only qualitative comparison being with previous surveys (see detailed summaries by map sheet in section 5).

## 6.2 *ARCHAEOLOGICAL SITES*

1825 sites were recorded within the 441 kilometre study area resulting in a monument density of (on average) more than 4 sites per kilometre. This density varies spatially with some areas, such as Great Bernera, having a high density and conversely some of the more inaccessible cliffs, such as the stretch in the north-east of the survey, having a much lower density. Also, the density from this survey is greater than those of the surveys completed to date under the wider national strategy being implemented by Historic Scotland. However, rather than simply signifying a higher density of archaeology *per se*, this may be a function of the chronological range of this survey which includes the vast numbers of post-medieval sites, coupled with the intention of the authors to identify single 'site elements' as well as 'settlement complexes' which are commonly recorded in other surveys.



The dates of the sites recorded range from the Neolithic to modern (such as military installations from WW2). The full breakdown of matrix state of all sites in the study area can be seen in Figure 10. It must be stressed that though some sites can be attributed to a period with confidence, (for example complex atlantic round houses (denoted CARH) which are thought to be exclusively Ironage, many of the period attributions for the sites should be interpreted as being 'possible' rather than 'probable' dates. Past research has shown the dangers of constructing chronologies by survey alone (*cf.* Armit 1992) especially as many Lewisian sites appear as piles of stones obscured by peat and turf. Five hundred and forty one of the sites (*circa* 30% of the total) have been assigned to the 'Unknown' period. It is however still useful to outline the relative breakdown by period that exists within the data set.

Figures 11 and 12 show the erosion states of the sites and the matrix in which the sites sit. In general both show consistent figures with approximately two thirds of the sites stable and nearly all the remainder showing varying degrees of erosion. The figures for sites being subject to a build up of the surrounding matrix are very low (*circa* 2%), this indicates that very few sites are being buried and lost by sediment deposition.

It should be noted that these figures show greater stability for the archaeological sites than may have been suggested by the erosion cell data. This stability can be explained by the high monument density along stretches of relatively stable coastline, such as on Great Bernera, and the position of many of the sites away from the eroding edge in the eroding stretches of coastline.

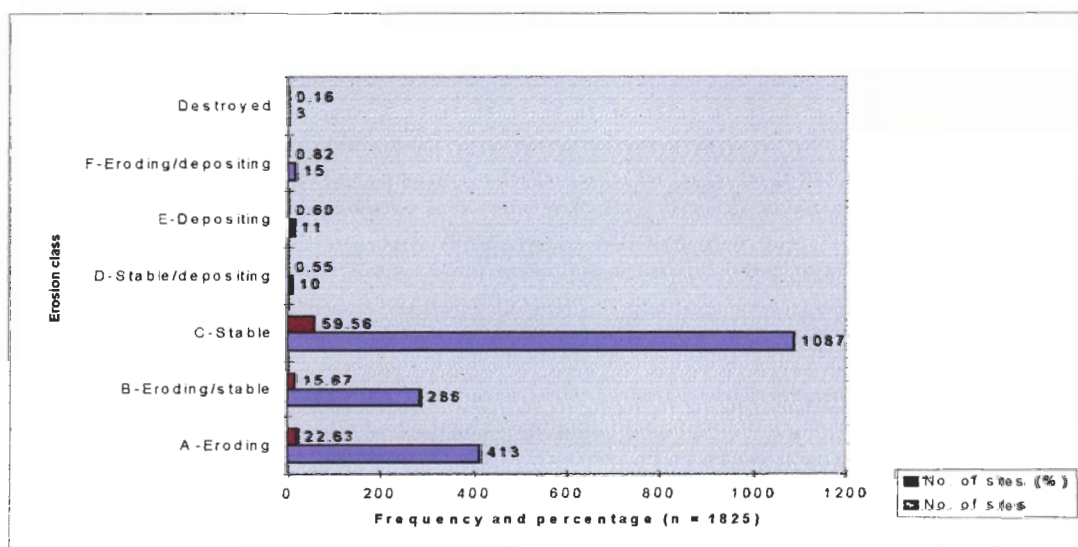


Figure 10, Matrix state for all sites in study area by erosion class

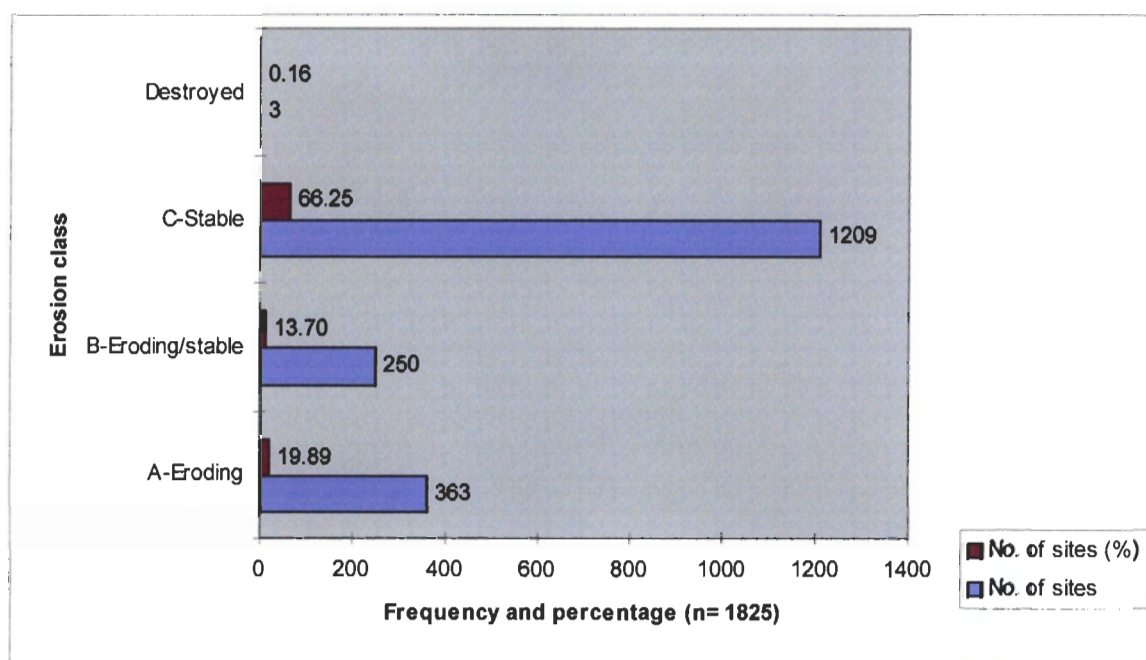


Figure 11: Site state for all sites in study area by erosion class

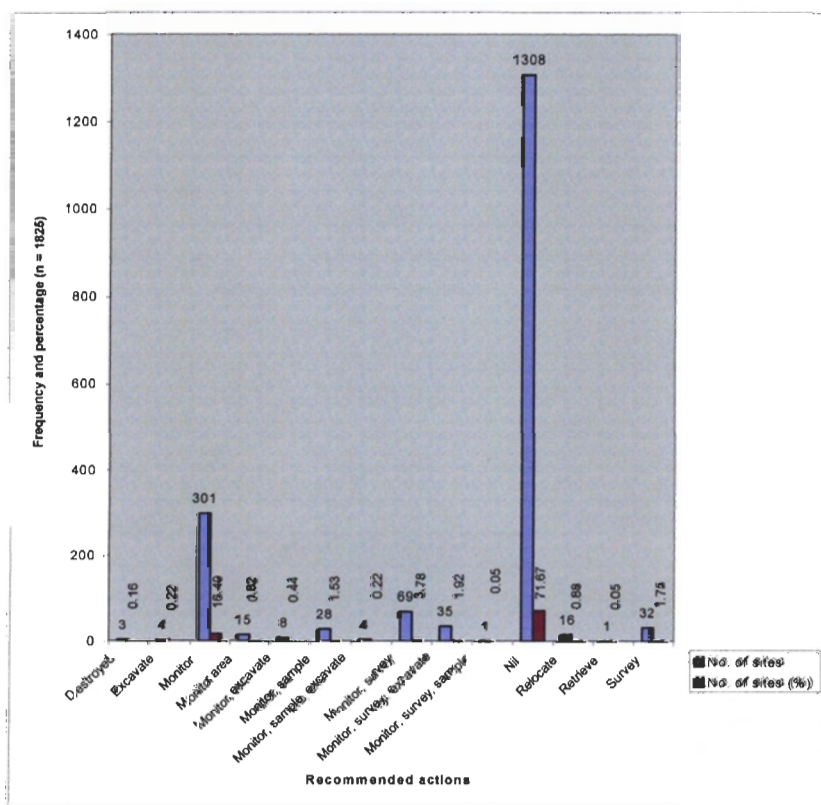


Figure 12: Recommended actions for all sites in study area



### 6.2.1 *Early Prehistory*

Until relatively recently the early prehistoric record on Lewis consisted almost completely of Neolithic monuments. These sites were typically ritual in nature and are exemplified by the ritual landscape centred around the stone setting at Calanais. Reasons for this lack of evidence include the failure to recognise associated site types for what they are, intensive agricultural activities within the more fertile areas of the coastal strip, increases in sea level and the obscuring of features by peat encroachment.

However, survey and excavation carried out by the authors (Burgess *et al* 1995, and Burgess and Church 1996) and by Coles *et al* (1994/5) are beginning to identify features of this period.

#### 6.2.1.1 *Mesolithic*

Mesolithic activity on Lewis has always been a contentious issue. The possibility that the ice sheet of the last ice age covered Lewis in its entirety suggests that Neolithic settlers were the first to reach the island after the ice retreated. Contrary to this it has also been suggested that the western shores of Lewis were not in fact covered by the ice sheet (Peacock 1984 9) and that on this coastal strip Mesolithic peoples could have dwelt

Remains from any settlement relating to such peoples located on the coast would have long since been submerged by the sea which is encroaching on the shores of Lewis, a rise of *circa* 5 metres since 5600 BP (Ritchie 1985), in sand and machair zones this could represent the submergence of several hundred metres of coastal terrain.

Palaeo-environment evidence does however suggest activity in the period between the retreat of the glacial ice and arrival, or development, of the first early farming techniques (about 5000 BP in Lewis). Pollen profiles recorded at Tob nan Leobag and Bharabhat (Edwards *et al.* 1994, 16) indicate that woodland clearances occurred and the associated 'fire ecology' was present. This is not universal to all cores taken from the region and can only be taken at present to indicate isolated local activity.

One site is believed to have shown anthropomorphic evidence from the Mesolithic. That is the scatter of chipped stone tools, said to include microliths, recorded on Traigh na Berie in 1937 (Lacaille 1937). All recent surveys have failed to relocate this site (Armit 1992, Burgess and Church 1996)

but have noted several shell middens in the immediate vicinity (sites NB13NW 17 and NB13NW 21). It was noted during 1995 and 1996 that NB13NW 17 is almost completely eroded away leaving little evidence for analysis.

Enough remained of NB13NW 21 in the spring of 1996 that a sample was collected for dating purposes. At that time the midden was noted as being aceramic and as containing shells, bone and pieces of quartz that may, or may not, be rough chipped stone tools. A programme of dating of sites (including NB13NW 21) such as the aceramic middens recorded at Barvas (NB 3503 5185c) may provide poof of the survival of anthropomorphic evidence for Mesolithic settlement on the coast of Lewis.

#### 6.2.1.2 *Neolithic*

Neolithic evidence on Lewis is dominated by the ritual landscape of Calanais and the surrounding area. Within the scope of this survey are several of the key outlying elements of this landscape (*i.e.* the stone setting at Bernera Bridge NB 1636 3431); other features have been recorded that may be part of the larger landscape. These include the stone setting or kerbed cairn at the south-west extreme of Bernera (NB 1447 3456b and c)

As the apparent edges of the Calanais landscape are reached (within the extent of this study these appear to be on the western side of Bernera and around Tolsta Chalais) the presence of sites of a megalithic nature is reduced and then lost. This decrease in 'ritual sites' is however marked by several occurrences of cup marked stones (NB13SE 11, and NB 1865 3875).

Settlement evidence related to this period is nearly non existent in the record. While the palaeo-environment record clearly shows increasing evidence of clearance of woodland/forest and the introduction of arable crops (Edwards *et al.* 1994, 19), very few sites have been found that can be firmly attributed to this period of settlement. At Calanais itself excavations at Tob nam Leobag (NB23NW 15) have uncovered a system of stone dykes and enclosures previously obscured by peat (Cowie *forth.*) Similar walls have been noted on the tidal island of Bratanish Mor and Bratanish Beg (NB 2065 3290) and a large curvilinear enclosure has been recorded near the Calanais Pier below the high water line (Coles *et al* 1994) but as yet non of these sites has been dated.

Evidence of Neolithic cultivation that is thought to predate the Calanais circle was noted during excavations on the site (P Ashmore 1995 29) but as yet no settlement activity has been identified or examined. This again is due to the rise in sea level, the encroaching peat and the incessant farming of the 'whitelands'. It is possible however that Neolithic phases may exist on sites such as that at Guinnerso (NB 035 363) where apparently Bronze Age layers may be underpinned by rectilinear structures (see section 6.2.1.3).

One development, which may lead to a greater understanding of the spread of Neolithic features, is the use of ground probing radar to examine sub-peat surfaces. The authors hope in the future to map extensive areas of peat land (such as Tob nan Leobag) with a view to identifying sub-peat features. Once located such features could be sampled and dated by coring and excavation.

#### 6.2.1.3 *Bronze Age*

Until recently Bronze Age activity on Lewis was confined to a handful of sites, some dated and some undated. These included a 'beaker' settlement and burials excavated at Barvas (Cowie 1986, 1987), and a putative cairn excavated at Tolanish (NB 045 338) on Uig Sands (McLeod 1995a and 1995b) for which no dating evidence has been gathered, and the house excavated on the beach at Dal Mor (Sharples 1984), (NB24NW 4).

Recent survey and excavation (Burgess and Church 1996; Burgess and Gilmour 1997) has however uncovered extensive Bronze Age activity in the vicinity of the Township of Crowlista at Aird Uig. Two sites recorded during survey work in 1995 (Burgess and Church 1996) have been sampled as part of ongoing research. The first of these is the Tidal Island (An Dunan, NB03SW 20) located at the back of Traigh na Surban circa 1000 metres north of the cairn at Tolanish. This natural island (see Figure 13) is linked to the shore by a causeway and is topped by a multi-phase curvilinear structure dated to the Bronze Age on the basis of artefactual evidence including a complete shale bracelet. Further excavation is planned for this site during 1997 and scientific dates have been applied for.

The second site is the landscape known as Guinnerso (NB 035 363) located on the west coast of the Aird Uig peninsula half way between the townships of Aird and Crowlista. This landscape is centred around a now dry loch and consists of cellular structures with yards (infields or kale yards), field walls, fish traps and possible burial cairns. (See Figure 14)

Some of these feature were examined by excavation during 1996 and artefact gathered suggest that upper layers maybe medieval or post-medieval while lower layers associated with curvilinear and cellular structures are likely to be Bronze Age in date. It is unclear as yet whether rectilinear.

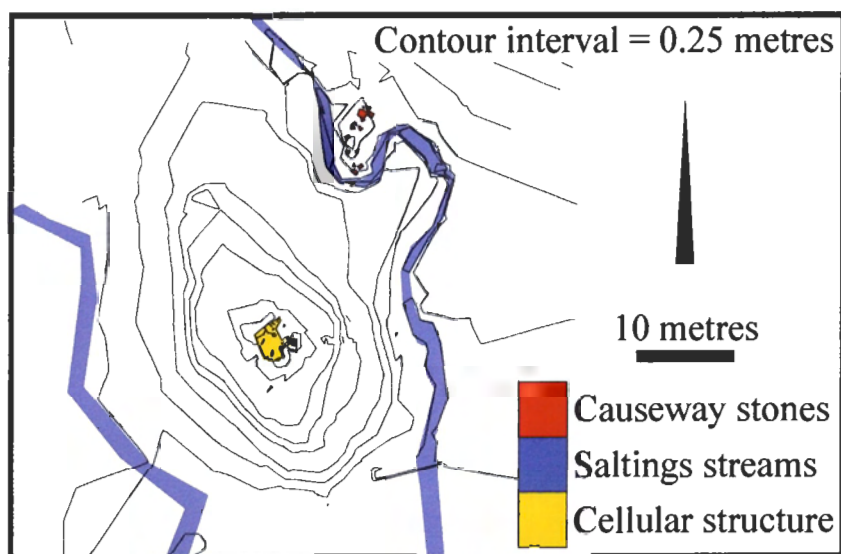


Figure 13, plan of features at An Dunan (NB03SW 20)

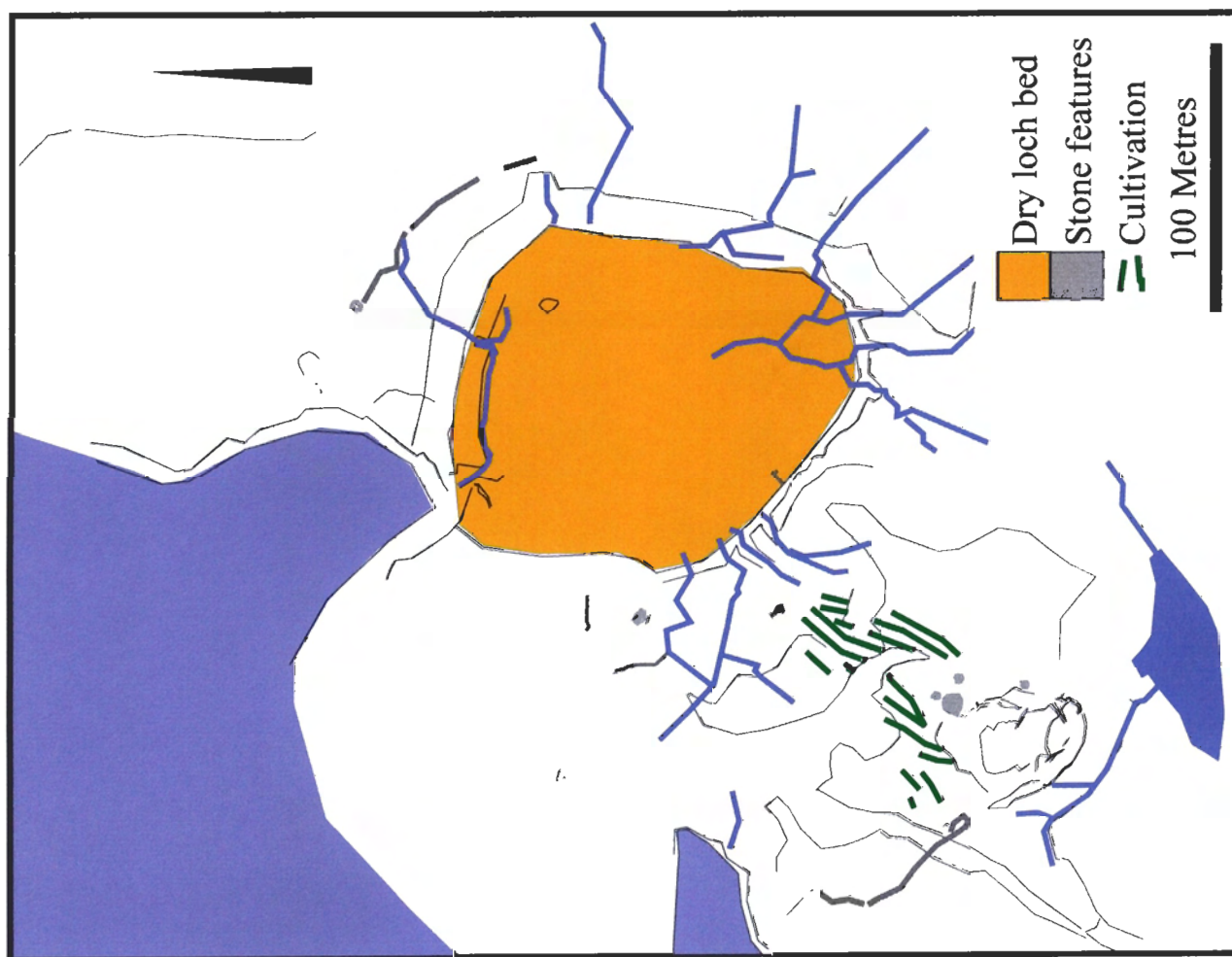


Figure 14, plan of the features at Gultnerso (NB 035 963)

structures on the site at apparently low levels are Medieval or Neolithic. Further excavation work on this site during the summer of 1997 is aimed at characterising other structures within the landscape and resolving questions of stratigraphic relationship between late and early deposits recorded during 1996.

### 6.2.2 *Late Prehistory*

The Late Bronze Age/Early Iron Age climatic deterioration is well documented across Britain. Pollen profile evidence from Lewis shows a sharp rise in pollen associated heathland/blanket mire conditions (Edwards *et al.* 1994, 20). At about the same time as the this encroachment of heathland (c.2500 BP) Armit suggests that the development of the classic Iron Age monumental drystone architecture of the Atlantic Roundhouses maybe seen in the archaeological record (1990, p60).

Wheelhouse architecture is thought to originate during the later phases of monumental construction typified by the CARHs of Lewis. This style of architecture continues into the late Iron Age along with less monumental structures (Armit 1992). All of these site types tend to be monumental in nature and for this reason have survived prominently within the record. But as with the ritual landscapes of the Neolithic (where one class of monuments dominate the record) very little else of an Iron Age date has been identified. This may be, in part, due to the intensive cultivation and farming of the 'whitelands'. This repeated re-use of the only available cultivable land has lead to the constant re-positioning of agricultural boundaries and the removal of structures that no longer have a use in agriculture or society. The best and most prominent example of this; has to be the en-crofting of Lewis during the 19<sup>th</sup> century (see section 6.2.5).

The number of features lost to this process is difficult to quantify, what has survived has done so due to its location on poor or barren land that would not usually be cultivated and due also to the monumental nature of the architecture. The survival many of CARHs is a prime example of this, Dun Carloway is situated on bare rock and thin soils, and sites such as Dun Boranish (NB03SE 01) and Dun Stuig (NB14SE 02) are located on small islands, frequently not much more than rocky outcrops, that would not usually be used for agriculture. Of course the 'defensive' nature, or the political statement that such a location makes cannot be ignored but similar sites that would occupy good arable land are not usually occupied by such sites.



Other sites considered to be of Iron Age date may have been recorded during this study but in most cases no firm dating evidence has been collected. Many of the cellular structures that have been recorded may date to this period but also may date to other periods of pre-history. Such site types are also found in the historic record as transhumance sites and parts of the religious settlements seen on the west coast of the island (see section 6.2.4.2).

New records of sites in machair environments have led to a widening of knowledge of this period, these sites may have been located on what is now considered to be agriculturally viable land. Surviving due to abandonment and subsequent rapid inundation of sand, sites such as that at Bostadh Beach (NB 14SW 02) show many phases of use, some directly on top of each other and separated by layers of sand (*i.e.* a Norse longhouse on top of a 'pictish' 'jelly-bean' house.) Other examples of such a build up may be seen at Galson (NB45NW 02) at Barvas and also in machair at Swainbost. In all of these cases artefacts believed to be of a late prehistoric date have been recovered.

This study has however highlighted one class of site which in many cases is believed to be late prehistoric in date. This is the promontory enclosure, of which only two were recorded on Lewis (Armit 1992) before the present programme of survey work, carried out by the authors since 1994. Since that time the number of such enclosures has risen to more than 60, with these sites ranging widely in size from less than 1 hectare to over 20 hectares and in the form of the remaining structures from small univalate enclosures through massive multivalate enclosures to those with drystone structures that may be CARHs or blockhouses.

The dating of such features is not precise with only two being excavated (Burgess and Gilmour 1996 and Burgess and Gilmour 1997). Artefacts recovered from un-excavated sites range in date from Neolithic (Unstan Ware from NB 5613 3332) to cragron from sites such as the stronghold at Mangesta (NB03SW 1). Of the excavated sites the first (NB 1869 4500) at Garenin, is believed to be of late prehistoric date (see Figure 15).

Situated to the north of Garenin on a stack approached by climbing down high sea cliffs this site is enclosed by a wall running north to south for 100 metres. This wall is constructed of large slabs of Lewisian Gniess and is up to 3 metres thick with complex stepped foundations visible where it crosses sloped ground at its south end. A simple entrance may be seen at the north end of the wall

measuring 2 metres in width. Enclosed by the wall are between 3 and 5 platforms all of which are cut into the south facing slopes of the stack. Excavations concentrated on a platform that was the site of a circular stone built structure showed it to be underlain by pits suggesting the presence of an earlier timber built structure. As yet no firm date has been defined for this site.

The second excavated site is that of Gob Eirer (NB 03SW 21) near Crowlista. This site is believed to be Norse or early historic in date on the basis of excavations carried out during 1996 (see section 6.2.4.1). In general these sites could date from the Medieval through to the Bronze Age and may in many cases be the site of multi period occupation. In most cases they are to be found on the high sea cliffs that dominate the west shore of Lewis spaced at relatively regular intervals with a high degree of inter-visibility between sites.

Between Garenin and Bragar five such sites have been identified, situated between 900 and 1500 metres apart and ranging in size from less than 1 hectare up to 5 hectares. (NB14SE 7, NB 1869 4500, NB24NW 05, NB 2249 4635 and NB24NW 02).

The site to the south-west of Shawbost (NB24NW 02) is typical of the multivalate sites of this type recorded during this study (see Figure 16). Enclosing *circa* 2 hectares this promontory measures 200 metres x 100 metres (at its widest point) and is orientated north-west to south-east. At its southeast end (the shore end), the promontory is constricted to a width of 20 metres and it is at this point that it is enclosed.

Four lines of walls cut the promontory neck, the first, second and third all surviving as turf bank features with a break at their centre of *circa* 1.5 metres. These features are best-preserved at their north end and become indistinct at their south end and measure 4, 3 and 2.5 metres in width. All three features are suffering coastal erosion at their ends.

The fourth feature comprises a drystone 'wall' 25 metres long and varying in width from 5 metres at its ends to 15 metres at its centre. This feature shows signs of having internal features, either rooms or an intra-mural space between its inner and outer face. Also within the extent of this feature are several cellular structures 3 metres in diameter. It is not clear whether these features are primary, or whether they post date the original construction.

Two rectilinear stone settings are located immediately inside the stone built enclosure on the south side of the promontory. The remains of these features are fragmentary and measure 5 metres x 5 metres. 120 metres to the north-west of this on the north side of the promontory is a circle of large boulders. This feature measures 20 metres in diameter, consists of eleven stones and is situated on a north facing platform that appears to be a natural topographic platform. This stone circle is similar in size and form to the 'covenanters circle' immediately to the north of Garenin (outwith the extent of this survey).

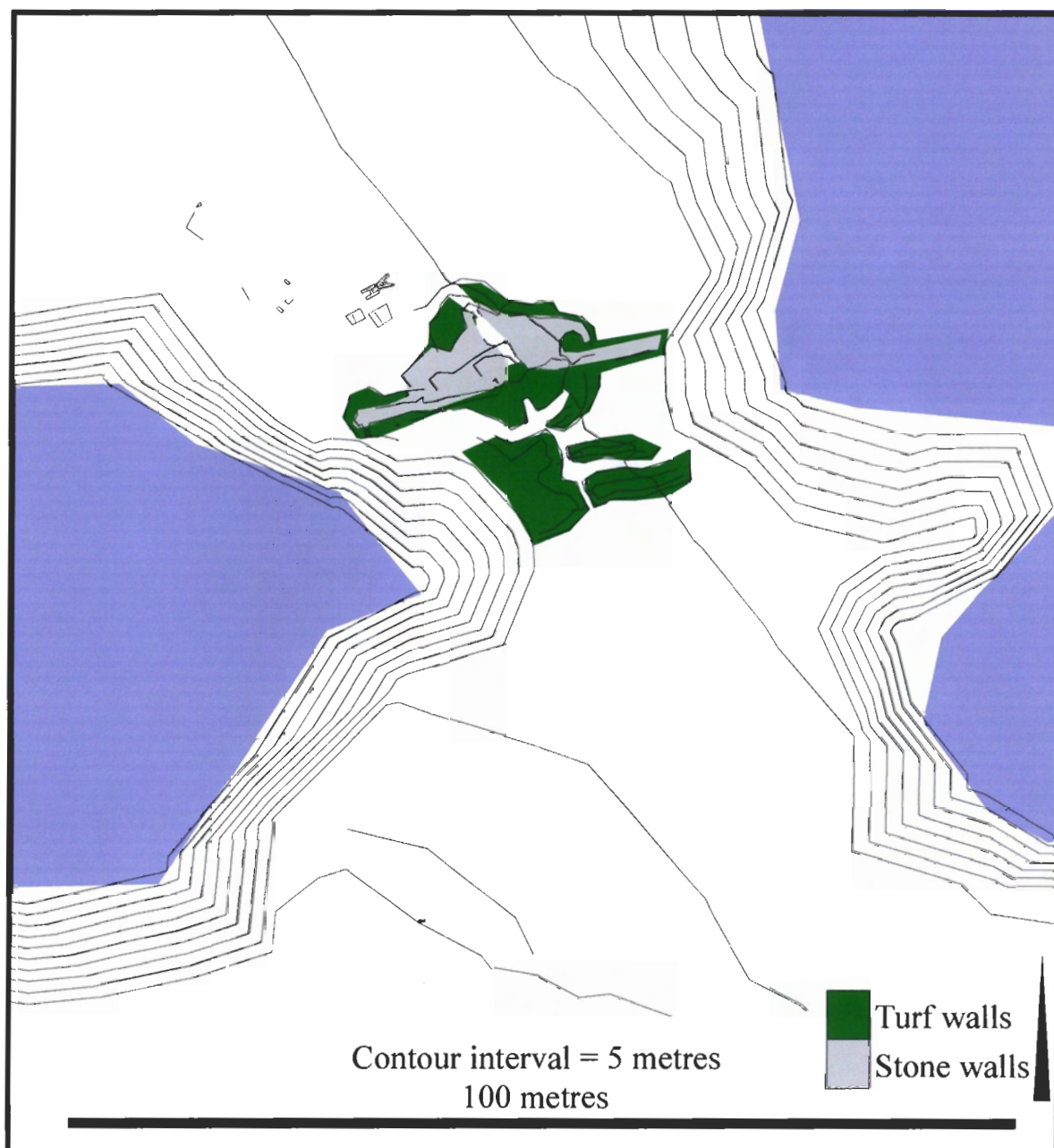


Figure 15a, Detail of the enclosing walls of the promontory enclosure at Shawbost (NB24NW 02)

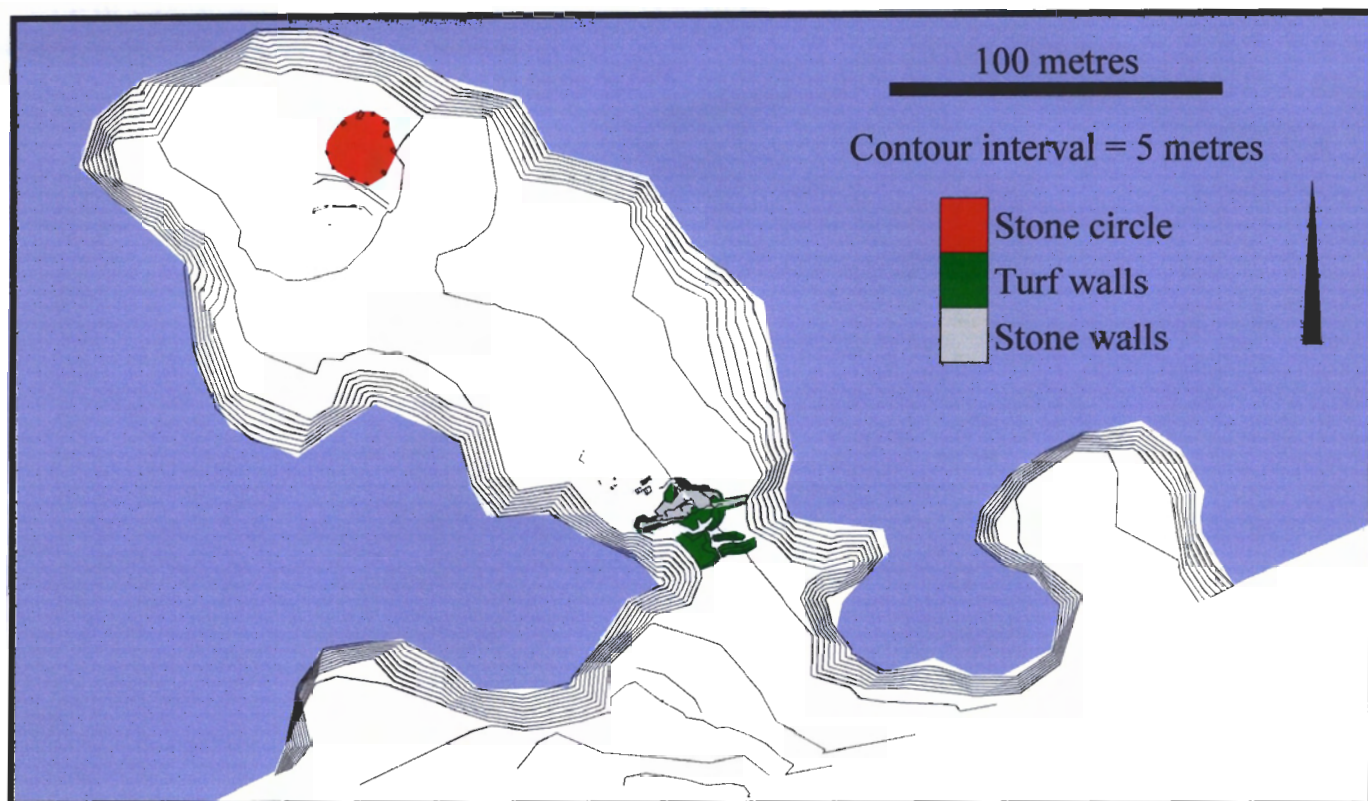


Figure 15b, Plan of the promontory enclosure at Shawbost (NB24NW 02)

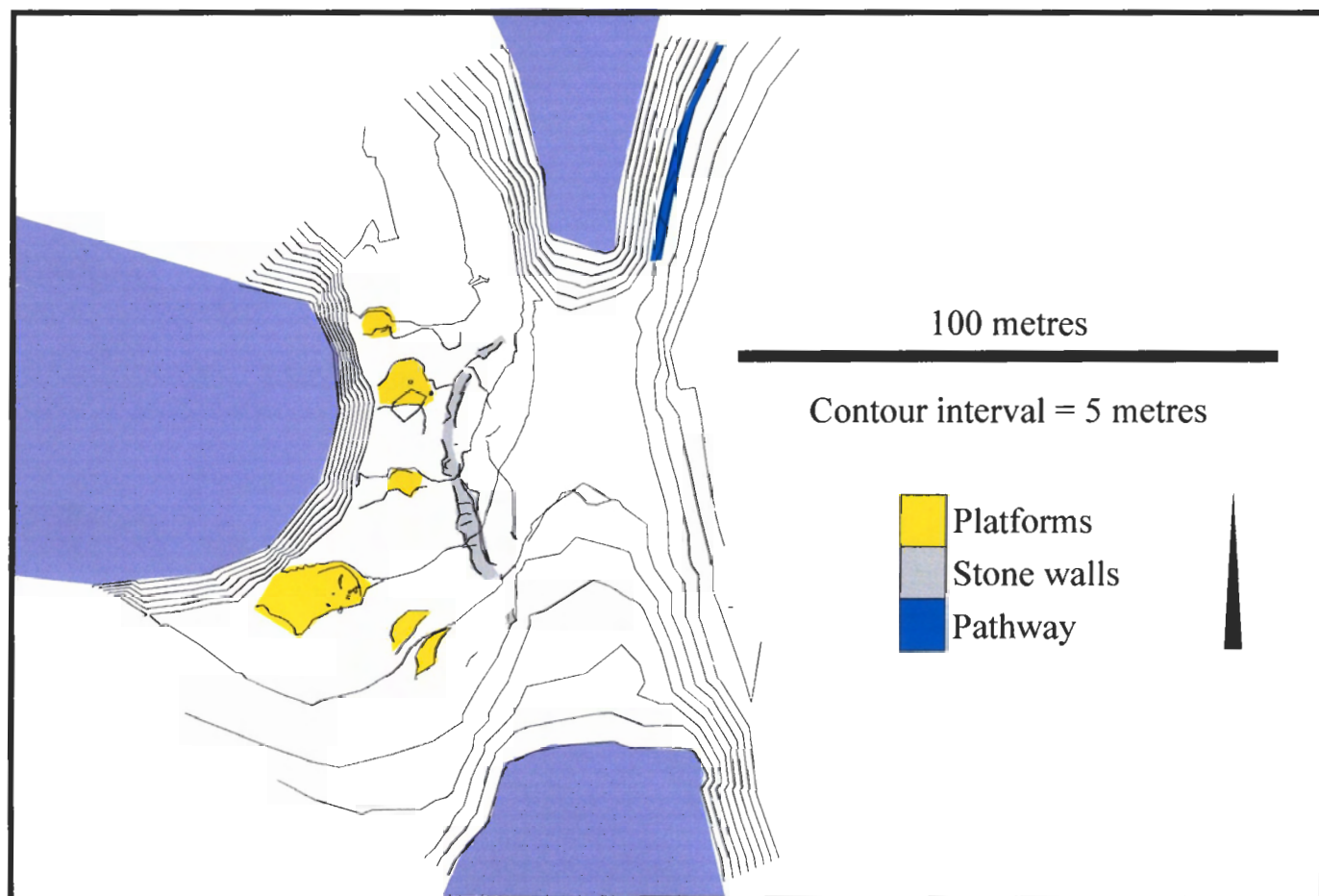


Figure 16, Plan of the promontory enclosure at Garenin (NB1869 4500)



### 6.2.3 Site state and recommended actions for Prehistoric sites

Figure 17 shows the breakdown of the erosion states of all the sites assigned a 'Prehistoric' date throughout the entire study area. This shows that almost half the sites are definitely eroding, with a further 15% eroding/stable and only 36% stable. If these figures are compared to those for the entire survey, it can be seen that the prehistoric sites are much more likely to be eroding than any other period grouping. This has implications for management as many of these sites are considered to be important site types located and assessed during this study.

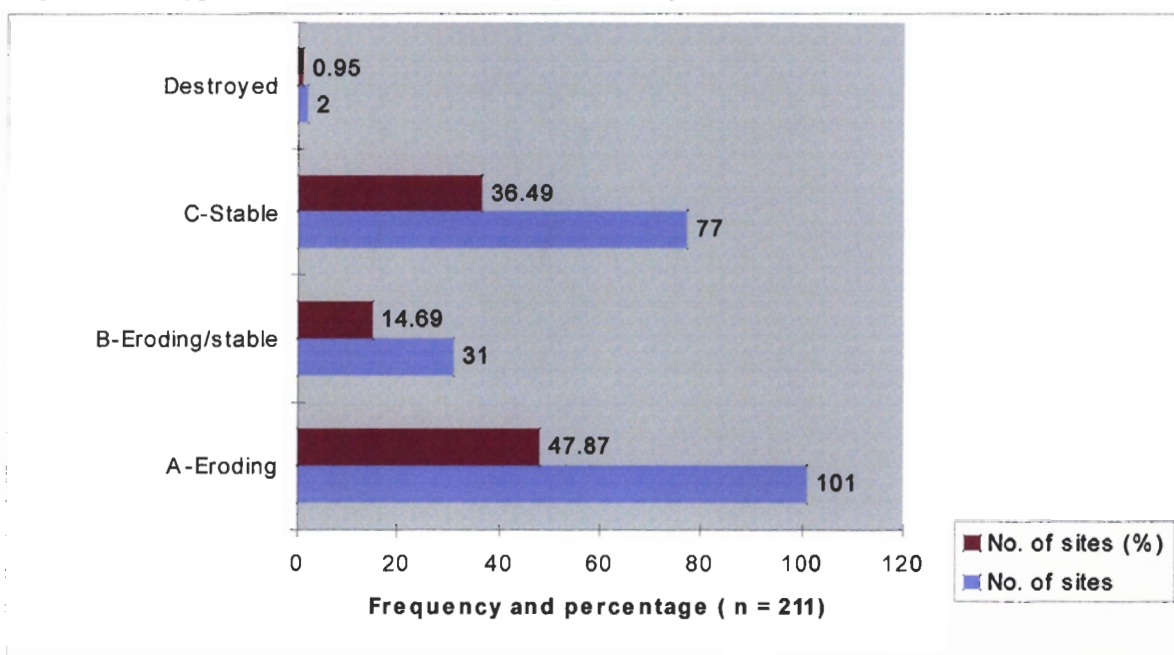


Figure 17, Site state for prehistoric sites by erosion class

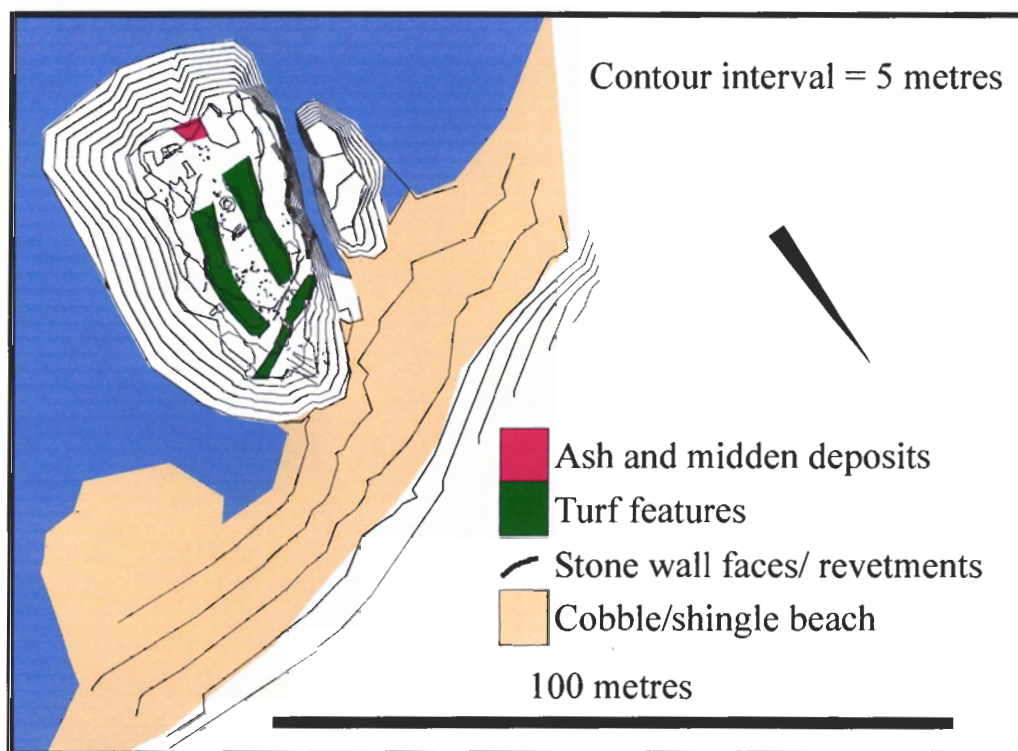


Figure 18, Plan of the features at Goc Eirer, (NB03SW 21)



#### 6.2.4 *Norse, Early Historic and Medieval*

##### 6.2.4.1 *Norse*

The firm identification of Norse sites is hampered by the lack of dated excavated sites from this period within the study area. Only one site is firmly identified as being Norse on the basis of primary evidence gathered during the field activities of 1996. That is the settlement mound in Board Bay (NB 4418 3523) where artefacts have been firmly identified as being Norse in origin (pers. comm. M McLeod 1996).

Three other sites have been suggested as Norse though the evidence is as yet inconclusive. These are the promontory enclosure Gob Eirer (NB03SW 21) (see Figure 18) at Camas Uig, the metal working site identified in the machair at Swainbost (NB56SW 14) and the settlement and field system at Liamashader (NB 1858 4220) to the south of Garenin. One other excavated site has also shown evidence of Norse occupation, the settlement at Bostadh Beach (NB14SW 2) which included the fragmentary remains of a rectilinear structure and midden deposits that contained Norse ceramic and fragments of a steatite vessel.

While dated sites are scarce for this period, place name evidence suggests a concerted Norse presence all around the west coast of Lewis. The *-shader* and *-bost* extensions are to be seen all around the coast. Primary settlements with the *-bost* name include Kirkibost, Shawbost and Bostadh and sheiling/pasture sites or secondary settlements with the *-shader* name include Ungersshader, Liamashader, Linshader and Shader (pers. comm. M McLeod 1996)

The physical evidence associated with these names is at present noticeable by its absence (except for at Liamashader). The reason for this absence of evidence is again the destruction of features by later settlement that probably re-used site locations and building materials from the Norse settlements.

##### 6.2.4.2 *Early Historic and Medieval*

Settlement evidence for this period within the study area is practically non-existent in the current record. As with distributions of earlier periods the only surviving sites tend to be monumental or ritual in nature providing an unclear picture of the settlement activities of everyday life.

Those sites that do survive tend to be 'castle' or stronghold sites (again monumental in nature), though many of these sites survive purely in folklore with no visible remains (i.e. NB24NW 01, the

site of Rubh' an Dunain). A fine example of this is the possible site of the McKlellan castle at Loch Seaforth (outwith the scope of this study) where the site has strong a oral historical record but the only extant remains are included in a later 'grey house' (for a full definition of grey house see Burgess 1995 78).

The other class of site that survives in numbers and is often associated with the early historic and Medieval period are religious sites. Mostly monastic sites, these include the 'Teampuls' of the west coast (including those at Bragar - NB24NE 03, at Shader - NB35SE 10 and at Borge - NB45NW 05), and a number of sites that are not named 'Teampull' but are believed to be monasteries. These 'monastic sites' include the site of the Black Nuns (NA92 SE 01), and the monastic settlements at Aird Uig, Eorope and Suighean (NB03NW 01, NB 5130 6563 and NB 52NW 01 respectively). The survival of religious sites (and little else) gives this period of settlement a profile similar to that of the Neolithic. It could be said that the survival of ritual monuments is due in both cases to similar reasons. Specifically the reverence of a ritual site, even if a site is not relevant to the culture of the day, aiding its survival. This phenomenon leads to such monuments surviving well after evidence of the associated society has disappeared (in the case of the Medieval these sites are Celtic and Catholic and survive in an area where the present religion, and that of the last 300 years, is one of Protestantism.)

Other evidence of medieval society, both habitation and agricultural, is obscured by several factors including the apparent similarity of features of this period to those of later periods (right up to and including some of the typical crofting sites). Misidentification and re-use of such features is augmented by the destruction of sites by later phases of settlement. Longhouse/blackhouse usage tends to last for 80-100 years before a house is rebuilt. The rebuilding occurs on adjacent locations and not on top of the original site (Dodgshon 1993). Many building materials would be re-used, particularly stones from the walls and wooden member of roof structures. This would leave only the earth core, or if the walls were entirely of turf construction, just the walls of any structure abandoned. These remains would be susceptible to erosion and obliteration through ploughing, obscuring the location of such sites.

The effects of erosion for sites of this period are reviewed in Figures 19 and 20.

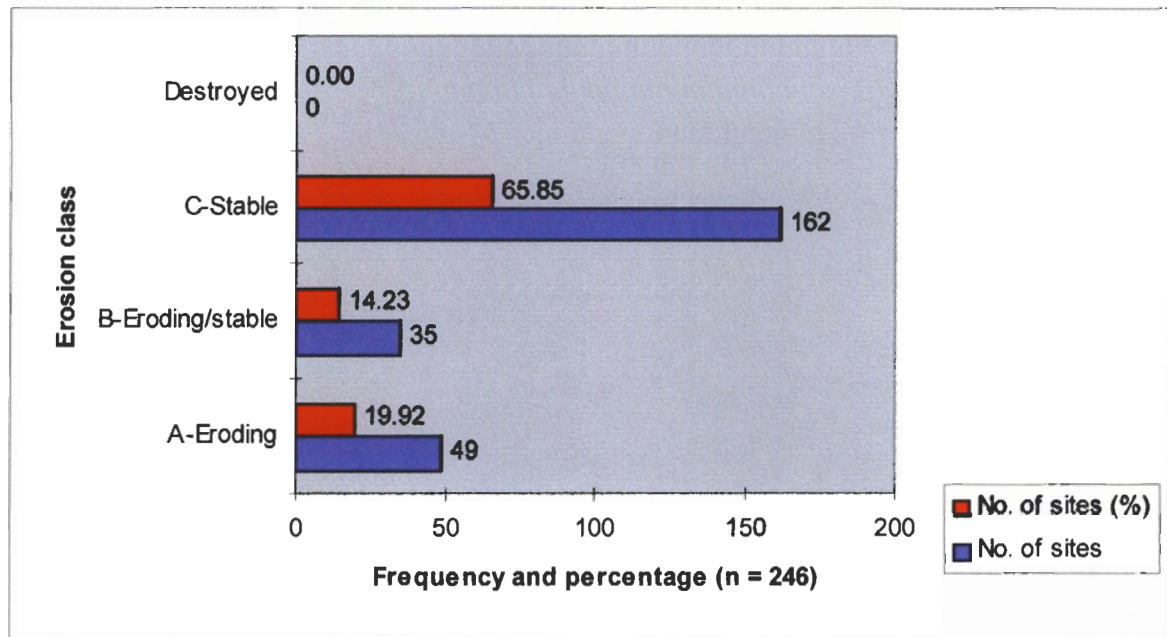


Figure 19, Site state for Norse and Medieval sites by erosion class

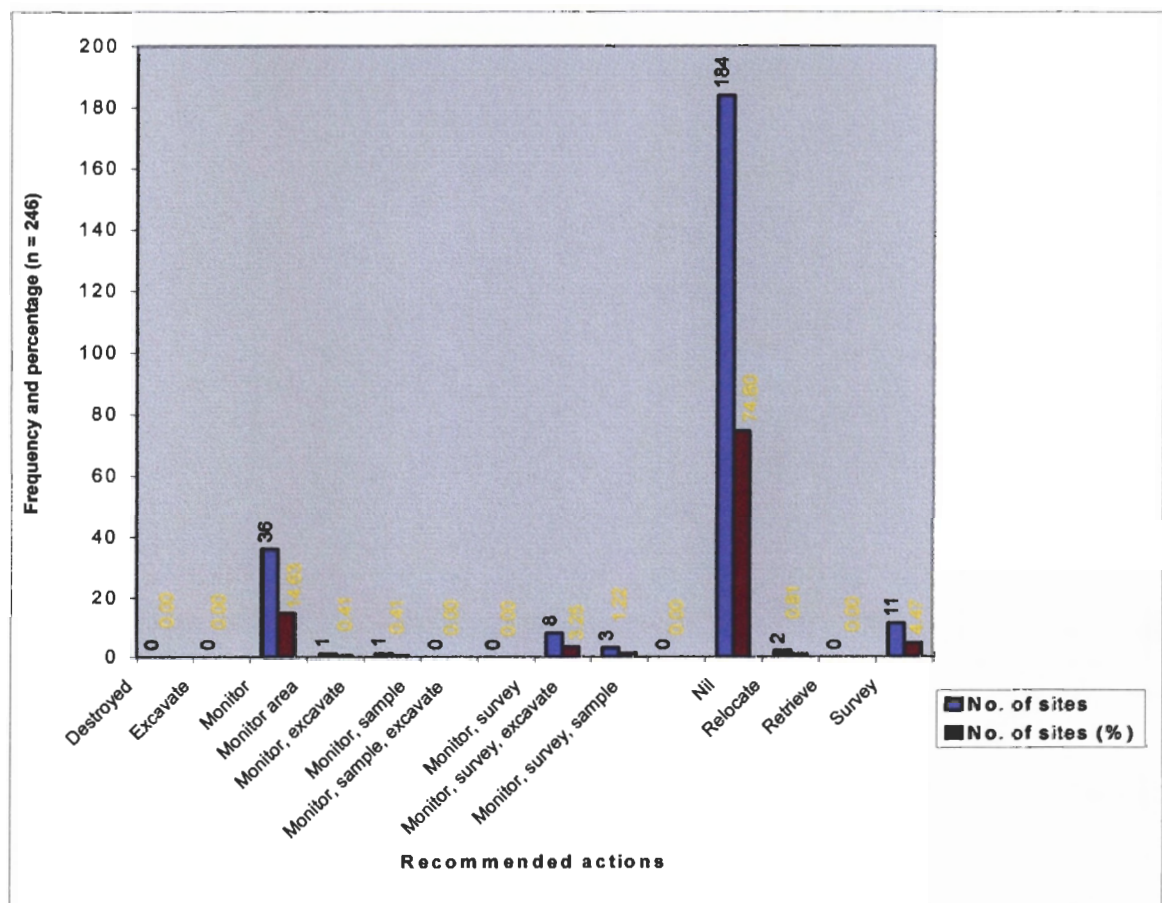


Figure 20, Recommended actions for Norse Medieval sites

### 6.2.5 *Post-Medieval and pre-crofting/pre-clearance*

16<sup>th</sup>, 17<sup>th</sup> and 18<sup>th</sup> settlement can be best seen in and around the crofting townships of Lewis. As with the Medieval features specific identification is difficult. This is made even harder if it is to be taken that some of the features believed to date from this period could actually date to earlier Medieval activities. The most complete landscape that falls within the study area is that at Beirero (NB03SW 14) on the east shore of the Traigh na Surban which is recorded in local parish records as being abandoned as a settlement in the 1730s as the village or *clachan* itself had become 'too wet to occupy'.

While the date of abandonment of this site is certainly post-medieval (the site being abandoned voluntarily during the earliest phases of the enforced clearances), survey and excavation evidence on the site suggests that it dates back to at least the 1530s (Burgess and Church 1995, Burgess et al. 1996b).

The true origin of this settlement is unclear and could conceivably be medieval or early historic in date. The possibility that Norse and prehistoric phases exist on the site also cannot be ruled out either as the name "Beriero" is a derivation of the 'Berie' name typically associated with later prehistoric sites elsewhere on Lewis. Also this site is at the core of the concentration of prehistoric monuments that may be seen all around the area of the Camas Uig and Crowlista.

Beriero is a prime example of pre-clearance settlement with a field system typified by un-intensive fields, filled with *feanags* or deep hand dug lazy beds, that radiate away from the settlement. Elsewhere within the study area remains are more fragmentary with a few *feanags* surviving frequently divorced from their wider field systems or the occasional early blackhouse being recorded with no associated features. These records of the pre-clearance landscape are quite frequent but are sufficiently fragmentary to prevent easy dating or association with other features.

There is a temptation to assume that such features date to the immediate pre-crofting period of the 18<sup>th</sup> and 19<sup>th</sup> century. This is because they have survived the replacement of the un-intensive pre-crofting landscape they relate to, by the cleared landscape of the crofting period. In reality without an extensive programme of investigation it will be impossible to say for sure from which period such features date. Even if investigation does occur and/or documentary evidence gives an indication of

date of the immediate pre-crofting period it would still be impossible to tell whether the origins of such sites are not much earlier.

#### 6.2.6 *Modern and Military*

Crofting phase settlement is the first phase of settlement that has a clearly identifiable set of features that can be distinguished from other historic features attributed to the Medieval and post-medieval period. The longhouse/blackhouse becomes diagnostic during this period and begins to take on features more usually associated with a 'whitehouse', leading to the development of the 'greyhouse' (Burgess 1995 p78).

Features are also easier to date due to their location within the more regimented crofts that have the added advantage of being mapped not only by the Ordnance Survey but by the various estates during and after the process of apportioning crofts. Crofting settlement has further contributed to the destruction of the settlement remains that predate it, leaving only fragmentary disjointed remains frequently surviving as re-used structures turning up in the lines of more recent fields and sheep pens (Burgess 1995, p59-60 and Burgess and Church 1996, 73).

It should be noted however that the systematic destruction of evidence of a pre-crofting date in the name of agricultural clearance is now being mirrored within the crofts with systematic destruction of disused drystone-skinned, earth cored, buildings. In the recent past this has occurred with the encouragement of local government and it is only recently that the preservation of examples of such sites has become a priority.

##### 6.2.6.1 *Military Monuments*

Military monuments of three major periods have been recorded within the study area. These are the sites and possible remains of the Cromwellian defences of Stornoway (NB43SW 10 and NB 4375 3208) the preservation of which (even if only by record) must be a priority at least at a local level. The World War Two defences of Stornoway including the gun emplacement at Arnish (NB43SW 27) which is now a Scheduled Ancient Monument and the defences of the same period around the Airport (NB 4414 3116 and NB 4510 3565). Finally there is a



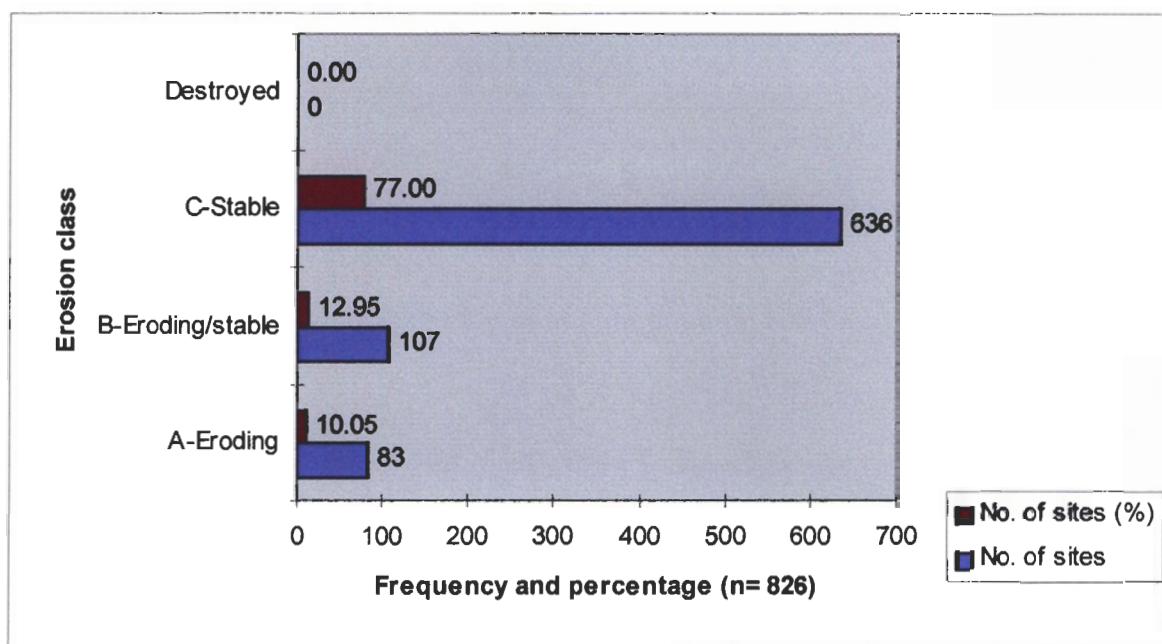


Figure 21, Site state for Post-Medieval to Modern sites by erosion class

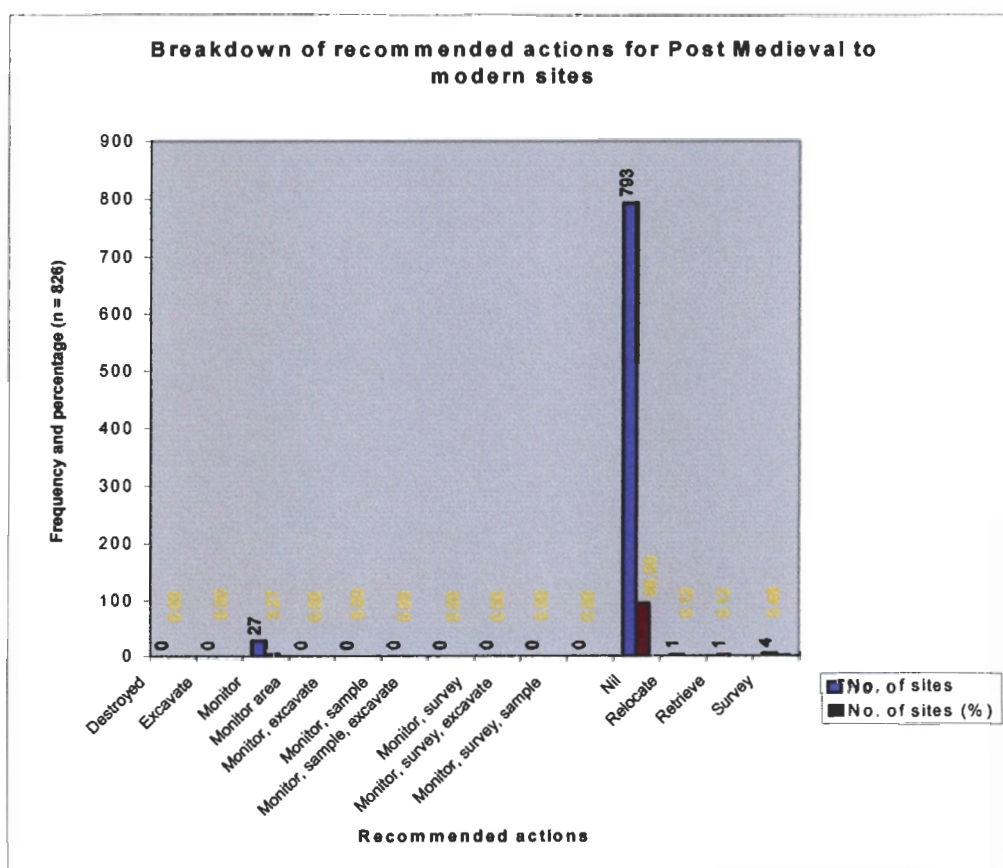


Figure 22, Recommended actions for Post-Medieval to Modern sites

group of sites that date to the 1950s and can be seen in two locations, at the airport and around the Township of Aird Uig, where the Royal Air Force still has a signal station (NB 0480 3895 and NB 0494 3809).

The effects of erosion on sites of the post-medieval and modern period are reviewed in Figures 21 and 22

#### 6.2.7 *Sites of unknown date*

Of all of the sites recorded in this study 29% are of uncertain date. This option tends to be applied either where the form and nature of a site is uncertain or with features that provide no pointers at all towards date such as cairns, field walls (surviving as fragmentary remains of obscured field systems) and some of the cellular structures and shielings. The future dating of such structures will be reliant on a new programmes of investigation of such sites providing new typologies of features that could at present date to any period from the Bronze Age through to the pre-crofting period.

The effects of erosion on sites of unknown date are reviewed in Figures 23 and 24

### 7.0 *CONCLUSIONS*

The erosion mechanisms threatening specific lengths of the coastline are summarised by Ramsay and Brampton (1995) and the erosion summaries within this Report.

#### 7.1 *SUMMARY OF EROSION AND ITS RELATIONSHIP TO CULTURAL HERITAGE*

The specific threats and erosion focuses for the archaeology can be summarised into three general classes. These apply for both the west and east coasts within the study area.

- Erosion of the sites (such as promontory enclosures) located on incised cliffs.
- Dynamic erosion/deposition system of machair impacting on the concentration of many types and ages of site within this zone.
- A small, number of areas threatened within alluvial systems.

Any future monitoring and management schemes will need to address these three conditions.

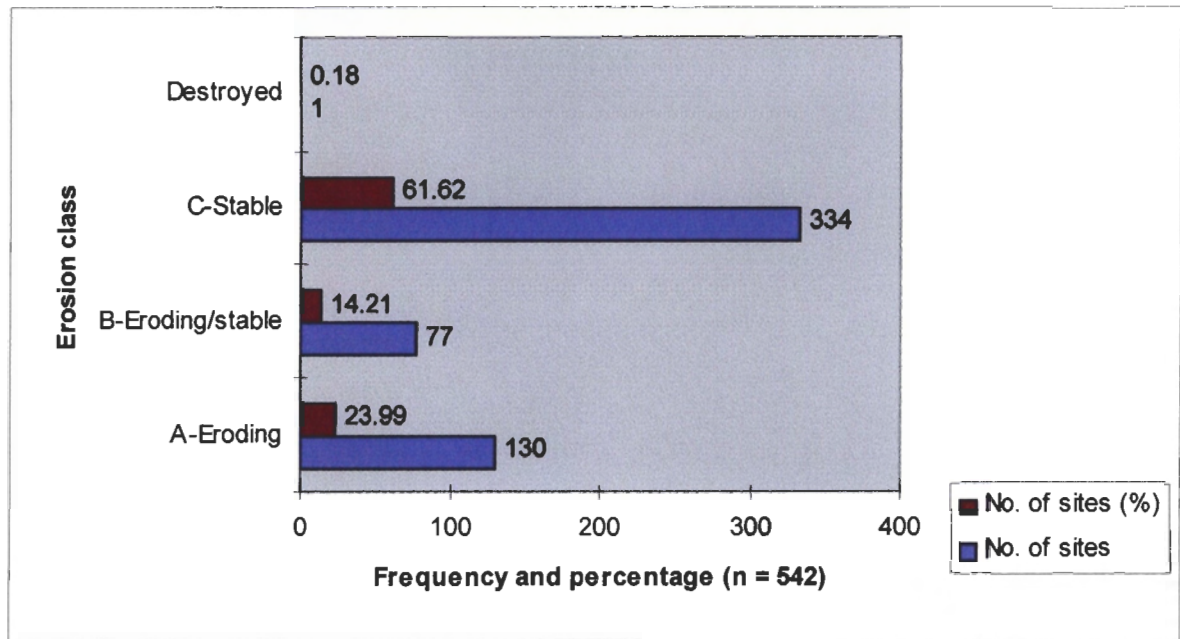


Figure 23, Site state for 'Unknown' sites by erosion class

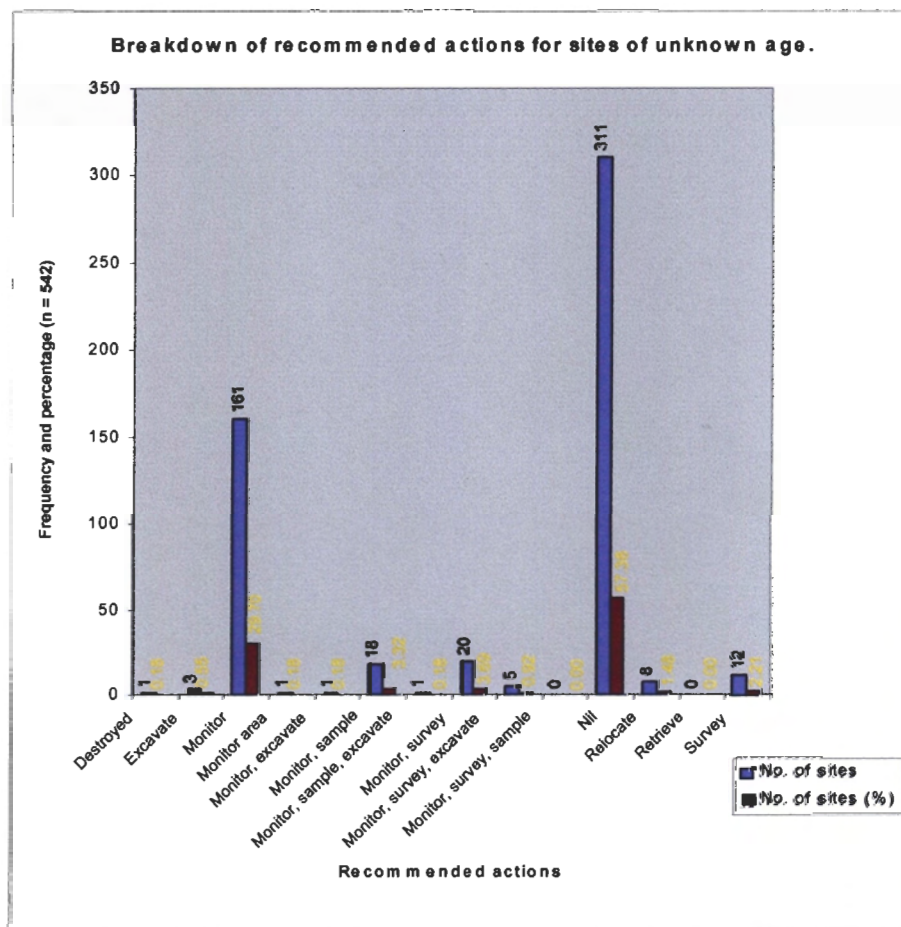


Figure 24, Recommended actions for 'Unknown' sites

**7.1.1 Class One: Sites on high cliffs**

Sites of this class are typified by promontory enclosures, of which over 60 individual examples have been identified. The class is threatened by the erosion of the incised cliffs upon which such enclosures are almost exclusively located. The cliffs are eroding through continuous small-scale slumping and erosion of the soil matrix coupled by low frequency, high magnitude cliff slip events which could destroy large portions of a promontory enclosure. Some of these events have reduced many examples of the promontory enclosure site type to little more than stacks of less than a few metres across.

The actual rate of erosion seems to vary depending on the underlying geology and the depth of substrate on which the site sits. For example sites located on the cliffs of Lewisian Gneiss are generally stable, the threat of erosion only increasing when sites are situated on deep soft substrates such as glacially derived sands and gravels.

Conversely, sites on the 'till cliffs' overlying Metasediments around north-west Lewis and the conglomerate cliffs of New Red Sandstone on the east coast are at a much greater risk as these areas are experiencing much higher rates of erosion of the relatively soft underlying geology.

**7.1.2 Class Two: Sites within machair zones**

Sand and machair zones are experiencing severe erosion which impacts on the archaeological sites within these dynamic systems. The erosion mechanisms stem from marine, aeolian, livestock and human activity. Marine erosion results in wave undercutting of the sand sections. This can vary in size from the small-scale, as seen in the eroding middens on Cnip headland (NB13NW 17 and 21), to the large continuous eroding sections of up to 5 m. at Galson (sites including NB45NW 02). Marine erosion is particularly marked at high spring tides and during high magnitude, low frequency storm events such as the storm which revealed archaeological remains at Bostadh (NB14SW 02) during the winter of 1993/4.

Aeolian erosion results in blow-outs and erosion scars which sometimes are very extensive (for example at Barvas machair). These basic erosion mechanisms and resulting features are exacerbated by animal and livestock grazing. Animals cause direct erosion through their tracks, especially up dune sides, and through extensive burrowing (*e.g.* at Mealista, Traigh na Berie, Barvas and Dal

Mor). Animal activity also impacts on the ability of the machair system to resist erosion through the removal and thinning of the vegetation which binds the unstable matrix together.

The delicate balance between the erosive faces and the erodibility of the machair is further impacted through human activity. The impact can result from direct exploitation of the zone, for example through sand extraction and cultivation at Barvas machair, or the more widespread impact from recreational activity. All these erosion mechanisms create eroded material which then is deposited, usually further inland by aeolian activity unless constrained by topography.

Both the erosion and deposition within these zones can be very local and the general regime of an erosion cell may hide the fact that an important site is being eroded or covered up. Also, as has been mentioned above, the dynamic erosion regime which exists in many of these zones can switch from erosion to deposition. Because of this machair zones with their high concentration of important prehistoric sites need a particularly rigorous monitoring and management scheme.

#### 7.1.3 *Class Three: Sites effected by alluvial action*

This class is limited to the points along the coastline where rivers and streams enter the sea or within wider areas of alluvial erosion and deposition, for example at Broad Bay. Generally the erosion is not too severe as most of the water bodies are not of the size to cause extensive damage. Along certain stretches of incised coastline streams are providing a further erosive mechanism at point of weakness which may directly impact sites located there. Alluvial action is also one of the few observed mechanisms for deposition within the coastal zone. This is particularly marked at Broad Bay with a number of sites being both eroded and covered over by the sands and muds, including the probable Norse settlement (NB 4418 3523).

## 7.2 *RECOMMENDATIONS*

Actions recommended in the gazetteers of cultural heritage (section 5) are divided into 5 basic groups. These responses (listed below) are augmented by a series of other responses that cover eventualities that are not otherwise catered for with the standard responses; these additional actions are discussed in section 7.2.6.



**7.2.1 Action 1: Nil**

This response is proposed when no further action is required. This situation occurs when a site is not threatened by erosion because it is situated well behind the active erosion focus. This action is also recommended when other action would give little or no additional information about the site.

A representative sample of every site type that has been identified as subject to erosion should be monitored. Similarly some of the sites which at present are covered by recommendations of no further action (Nil) should be represented in a control group of sites to be monitored to prove that no erosion is occurring. This control group is not represented in the present recommendations in section 5; the authors recommend that the size and composition of such a group should be decided upon by Historic Scotland in consultation with interested parties such as bodies currently carrying out research in the region, local archaeological and historical societies and any local authority archaeological curatorial service in existence.

**7.2.2 Monitor (Baseline Survey)**

This action allows for the recording of continuing erosion or deposition. The use of this action has two main aims; firstly to quantify the speed and extent of erosion occurring on a site based level, this information could also be used to produce a wider picture of erosion occurring along the coastline of the study area. Secondly, monitoring can be used to establish the nature of a site, or to gather more data about a site through the recording of features and the collection of artefacts and samples that have been revealed by erosion.

In the overviews of cultural heritage (section 5) monitoring is augmented with “(Baseline survey)”. This qualifying statement recognises the fact that before any programme of monitoring can commence baseline information should be gathered about the sites to be monitored. This information during future monitoring visits and should consist at a minimum of a drawing or measured sketch with a written description. Experience has shown during this and earlier studies carried out by the authors (Burgess and Church 1996) that a written description alone does not provide enough information to make sensible assessments of the state of a site compared to a previous survey visit.

**7.2.3 Detailed Survey**

This action has been recommended where a site is considered to be of local, regional or national significance and has at yet no satisfactory survey. This response will *preserve by record* information about sites that may be at threat now or in the future due to erosion.

**7.2.4 Sample**

This action has been recommended where a site is considered to be of local, regional or national significance and is (or contains elements of) a midden or deposit of artefactual remains. Such action is designed to *preserve by record* sites of this type which may be lost extremely quickly and allow quantification, dating and analysis of any such deposit to characterise in more depth aspects of the site in the framework of a wider monitoring scheme.

**7.2.5 Excavate**

This action has been recommended where a site is considered to be of local, regional or national significance and is at immediate risk of being lost for ever due to erosion activities. Such action is designed to *preserve by record* sites suffering this threat allowing quantification, dating and analysis of any such deposit.

**7.2.6 Other responses**

Several other responses have also been suggested in the gazetteers to deal with specific situations, these include the *relocation* of sites that are known to have existed (due to their presence in the NMRS) but now cannot be seen on the ground. Other responses that occur only infrequently are those such as the *retrieval* of traditional boats and other large artefacts that have been abandoned on the shore line and have intrinsic cultural heritage value to the Western Isles.

**7.3 OVER VIEW AND SUMMARY OF RECOMMENDED ACTIONS**

The actions recommended in the gazetteers of cultural heritage in section 5 are considered on a site by site basis. Any monitoring and response programme that would be instituted within the extent of this study should consider the number of recommendations to be implemented on a study wide basis. Any group of sites to undergo monitoring (Baseline survey) should be a representative sample of monument types, terrain types and location around the coastline.

In the institution of any programme of sampling, excavation and detailed monitoring very careful consideration should be given to which sites should be adopted for such activities. All of the sites recommended for such action require some sort of recording due to the lack of an existing record and the increasing presence of a destructive erosional threat; but as ever the implementation of any programme of work will be reliant on the funds that are available to carry out such work.

Any extensive monitoring programme would be an expensive affair due in part to the sheer number of sites involved. Schemes that have been suggested to combat this may include the involvement of local enthusiasts to carry out regular monitoring visits to specific sites or groups of sites. Such visits would require that specific questions be answered, and possibly that specific measurements be taken.

To enact a programme of monitoring of this scale using volunteer staff on a day to day basis would require that baseline surveys be prepared to a high level of quality, and that good instruction be given to the monitors. Details of such monitoring could be further animated using *internet* or *WWW* links to Historic Scotland, the local archaeological curator or whichever body is carrying out the monitoring on behalf of these bodies.

It is possible that such a programme should be interspersed with regular professional visits either to all sites (*i.e.* every five years) or by sampling a random group of sites on a more regular basis to provide control to the monitoring carried out locally. The extreme expense involved in any scheme of this size would suggest that funds should be sought from more than one source. While Historic Scotland has provided guidelines for the execution of such work and may wish to maintain control of such work, research and heritage based objectives attached to such programmes could possibly attract from funds as diverse as Western Isles Enterprise and the National Lottery.

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## **8.2 ORGANISATIONS AND INDIVIDUALS CONSULTED**

Historic Scotland

Scottish Natural Heritage

RCAHMS, NMRS and APU

National Map Library

Dr Mike Cressey, Andy Dunwell and Ronan Toolis (Centre for Field Archaeology)

Dr Geraint Coles and Professor Denis Harding (Department of Archaeology, University of Edinburgh)

Richard Langhorne (Stornoway Museum)

HR Wallingford

Trevor Cowie

# *APPENDICIES*



9.0 **FORMAT FOR RECORDING OF ARCHAEOLOGICAL SITES**9.1 **RECORDING FORMAT FOR ARCHAEOLOGICAL SITES.**

FIELD NAME	OPTION	DESCRIPTION AND CONVENTIONS
Parcel	Input data	Based on map sheet.
Monument number / label	Input data	Generation through position in specific map sheet (Ashmore 1996, p13)
Site name	Input data	Only given if site has a recognised and accepted name, either by local tradition, by the Ordnance Survey or by the Royal Commission.
Locale	Input data	Nearest locality on 1:25000 OS map (in Gaelic).
Situation	See Table 1B	Position of site in landscape.
Structural elements	See Table 1C	Principal type of site. Sites with multiple types are further described by <i>Other structural elements</i> or on paper.
Other structural element	Input data	Site type or further description not covered by <i>Structural Element</i> field.
Dimensions	Input data	Dimensions of entire site coverage described by x (maximum length), y (maximum breadth) and z (maximum height or depth) axes. When different conventions to this are used they are described in field or text.
Orientation	Input data	Gives orientation along x axis with both compass points given (e.g. n to s). Also each of the four major points are abbreviated to their first letter with composite points hyphenated (e.g. n-e equals north-east.)
Artefact elements	See Table 1D	Describes principal artefactual components seen in site.
Other artefact elements	Input data	Describes further artefactual components not covered by <i>Artefact elements</i> .
Matrix state	See Table 1E	Both <i>Site state</i> and <i>Matrix state</i> describe the erosion state of the site and matrix respectively, using the categories outlined by Ashmore (1996, p14). These two fields replace the single field 'Condition' outlined by Ashmore (1996, p14).
Site state	See Table 1E	See above.
Date visited	Input data	Allows <i>Matrix state</i> and <i>Site state</i> to be assessed within the annual erosion regime of Lewis.
Aspect	Input data	This is described by giving the first compass point followed by the last compass point, then the clockwise direction indicated by the next principal compass point the aspect runs through (e.g. n to s through e).
Period	See Table 1F	This indicates the possible age of the site, as identified by the survey team of each site. This is given by general periods as opposed to numerical chronology due to the uncertain numerical chronologies of many of the site types in this region (see Armit 1996).
Recommended action	See Table 1G	Decided initially in field by survey teams with further consideration given during post-ex.

**9.2 OPTION LIST FOR SITUATION FIELD.**

OPTION	DESCRIPTION AND CONVENTIONS
Beach	Includes sand and shingle beaches.
Cliff bottom	-
Cliff side	Generally means that site was observed from a distance.
Cliff top	-
Dunes	Within dune systems between beach and machair.
Eroding face	Site generally seen in section.
Foreshore slope	Specific geomorphic term describing the position just beyond a low coastal edge.
Headland	-
Hill side	-
Hill top	-
Machair	Within machair system rather than <i>Dunes</i> or <i>Beach</i>
Stack	Generally means that site was observed from a distance.
Valley floor	-
Valley side	-

**9.3 OPTION LIST FOR STRUCTURAL ELEMENT FIELD**

OPTIONS	DESCRIPTION AND CONVENTIONS
Blackhouse	Regionally specific type of Post-Medieval structure common throughout the area
Boat naust	-
Burial	Describes any burial type that is not covered by the more specific options of <i>Burial cist</i> or <i>Burial cairn</i> .
Burial cairn	Describes a cairn which the survey team believed contains, or contained at some point, a burial.
Burial cist	Describes a burial with stone slabbing evident to form a stone 'coffin'.
Cairn	Single cairn
Cairns	Area of cairns
Complex Atlantic Roundhouse	Iron Age drystone structure, as defined by Armit (1992).
Cave	-
Cell	Single circular or oval drystone structure of relatively small size (<4m. in diameter).
Cellular complex	Complex of cells, which may be single or multi period
Cultivation	Small area of cultivation not meriting <i>Field system</i> description.
Cultivation, cord rigging	Cultivation which in cross-section and scale is similar to that of Bronze Age cord rigging.
Cultivation, square cut	Cultivation which in cross-section and scale seems to have been dug by spade.
Dwelling	-
Dyke	Wall or boundary, with or without ditch.
Dyke, drystone	Wall or boundary of drystone construction.
Dyke, stone and turf	Wall or boundary of stone and turf construction.
Enclosure, curvilinear	The landscape of Lewis is dotted with structures whose function is hard to identify from survey alone. Hence it was decided to describe these monuments as <i>Enclosures</i> of either <i>curvilinear</i> or <i>rectilinear</i> form, with the additional label of <i>habitational</i> if it was thought that the monument could have been a domestic dwelling. The construction of the walls was also important as this may have some chronological significance in the region (Burgess forthcoming).
Enclosure,	See above.

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curvilinear, drystone	
Enclosure, curvilinear, stone and earth core	See above.
Enclosure, curvilinear, turf	See above.
Enclosure, curvilinear, turf and stone	See above.
Enclosure, habitational, curvilinear	See above.
Enclosure, habitational, curvilinear, drystone	See above.
Enclosure, habitational, curvilinear, stone and earth core	See above.
Enclosure, habitational, curvilinear, turf	See above.
Enclosure, habitational, curvilinear, turf and stone	See above.
Enclosure, habitational, rectilinear	See above.
Enclosure, habitational, rectilinear, drystone	See above.
Enclosure, habitational, rectilinear, stone and earth core	See above.
Enclosure, habitational, rectilinear, turf	See above.
Enclosure, habitational, rectilinear, turf and stone	See above.
Enclosure, rectilinear	See above.
Enclosure, rectilinear, drystone	See above.
Enclosure, rectilinear, stone and earth core	See above.
Enclosure, rectilinear, turf	See above.
Enclosure, rectilinear, turf and stone	See above.

Field system	Large area of cultivation with additional associated monuments, such as field boundaries.
Harbour	-
Marine industry feature	Type of monument which is usually situated on or near a beach, specifically associated with marine industry i.e. a kelp kiln.
Mill, horizontal	Type of mill by which the stones are driven horizontally as opposed to the more common vertical position.
Mill, vertical	See above.
None	-
Other	Description occurs in <i>Other structural elements</i> field.
Promontory enclosure	New term coined for the type of monument which is situated on a promontory and involves some form of dyke sealing off the rest of the site from inland. No chronological significance is implied and the function of the site may range from being a seemingly defensive site (previously termed a 'promontory fort') to a means of keeping sheep from danger.
Simple Atlantic Roundhouse	Iron Age drystone structure, as defined by Armit (1992). However, as Armit points out (1990, p54), identifying this type of monument in the Western Isles without excavation is unwise.
Settlement	-
Settlement Mound	Usually denotes a possible settlement site.
Sheiling	Usually describes a small cell used for transhumance purposes.
Standing stone	Generally implies a Bronze Age or Neolithic date.
Stone alignment	-
Stone circle	Generally implies a Bronze Age or Neolithic date.

**9.4 OPTION LIST FOR ARTEFACT ELEMENTS FIELD.**

OPTION	DESCRIPTION AND CONVENTIONS
Bone	Unidentifiable to type.
Bone, animal	-
Bone, human	-
Ceramic / pottery	-
Glass	-
Metal	-
Midden, kitchen	Midden with multiple eco-factual and artefactual remains.
Midden, shell	Midden with shell as the predominant ecofact present.
Other	Description in <i>Other artefact elements</i> .
Quern, rotary	Provides <i>terminus post quem</i> of approximately 2nd century B.C for deposition of artefact (Caulfield 1977; Armit 1991, p192).
Quern, saddle	Unlike <i>rotary quern</i> , this artefact has no chronological significance.
Shell	-
Stone (chipped)	-
Stone (polished)	-
Stone (vessel)	-

**9.5 OPTION LIST FOR MATRIX STATE AND SITE STATE FIELDS.**

OPTION	DESCRIPTION AND CONVENTION
A - Eroding	Describes area of definite erosion.
B - Eroding / stable	Some signs of erosion.

## COASTAL EROSION ASSESSMENT (LEWIS)

C - Stable	No signs of erosion or deposition.
D - Stable / Depositing	Some signs of deposition.
E - Depositing	Definitely depositing.
F - Eroding / Depositing	Signs of both erosion or deposition evident within metres of each other, a phenomenon possible especially in machair systems.

### 9.6 OPTION LIST FOR PERIOD FIELD.

OPTION	DESCRIPTION AND CONVENTION
Bronze Age	See Armit 1996 for chronological range within the region
Crofting	Specific period within <i>Post Medieval</i> during 18th and 19 <sup>th</sup> centuries.
Iron Age	See Armit 1996 for chronological range within the region
Medieval	See Armit 1996 for chronological range within the region
Mesolithic	See Armit 1996 for chronological range within the region
Modern	Specific period indicating the late 19th century up until 1945.
Neolithic	See Armit 1996 for chronological range within the region
Norse	See Armit 1996 for chronological range within the region
Pictish	Specific period used to describe the Late Iron Age in the Western Isles, characterised by cellular buildings at sites such as Berie (Harding and Armit 1990) and Bostadh (Neighbour and Burgess 1997).
Post Medieval	See Armit 1996 for chronological range within the region
Pre-Clearance	Specific period within <i>Post Medieval</i> prior to the Clearances.
Prehistoric	Generic term for sites prior to the Norse incursions in the latter quarter of the first Millennium A.D.
Unknown	-

### 9.6 OPTION LIST FOR RECOMMENDED ACTION FIELD.

OPTION	DESCRIPTION AND CONVENTIONS
Nil	Site does not merit any further action.
Monitor	Site is of sufficient importance or state of erosion to warrant monitoring.
Survey	Site is of sufficient importance or state of erosion to warrant survey.
Sample	Site is of sufficient importance or state of erosion to warrant sampling but not full excavation.
Excavate	Site is of sufficient importance or state of erosion to warrant full scale excavation. This applies to sites which would provide important information on periods or site types unknown or rarely excavated in the area, or to sites which would help to answer current major research questions.

## 10.0 FORMAT FOR RECORDING OF ENVIRONMENTAL SITES

### 10.1 RECORDING FORMAT FOR ENVIRONMENTAL SITES.

FIELD NAME	OPTION	DESCRIPTION AND CONVENTIONS
Site number / label	Input data	Generation through position in specific map sheet (Ashmore 1996, p13)
Parcel	Input data	Based on map sheet.
Type	See Table	Describes type of environmental site.



## COASTAL EROSION ASSESSMENT (LEWIS)

	2B	
Other data	Input data	Provides further information on site.
Situation	See Table 1B	Describes position in landscape.

### 10.2 OPTION LIST FOR TYPE FIELD.

OPTION	DESCRIPTION AND CONVENTIONS
Alluvial section	Section presently within fluvial system.
Holocene section	Section of any type but assumed to be within Holocene (past 10000 years).
Other	Description given in <i>Other data</i> field.
Palaesol	Section contains old ground surface (s).
Pre Holocene section	Section of any type but appears to be pre Holocene due to existence of glacially derived deposits.

## 11.0 RECORDING FORMAT FOR EROSION / GEOMORPHIC CELLS

### 11.1 RECORDING FORMAT FOR EROSION / GEOMORPHIC CELLS.

FIELD NAME	OPTION	DESCRIPTION AND CONVENTIONS
Cell number / label	Input data	Generation through position in specific map sheet (Ashmore 1996, p13)
NGR (centre of cell)	Input data	-
Erosion class	See Table 1E	Dominant erosion class within cell.
Locale	Input data	Nearest locality on 1:25000 OS map (in Gaelic).
Foreshore	See Table 3B	Dominant foreshore type within cell.
Hinterland	See Table 3C	Dominant hinterland type within cell.
Geology	Input data	Indicates solid and drift geology (cross-referenced to BGS maps during post-ex).
Modifier	See table 3D	Dominant modifier within cell.

### 11.2 OPTION LIST FOR FORESHORE FIELD.

OPTION	DESCRIPTION AND CONVENTIONS
Mainly alluvial sand / mud	Much of sediment derived from fluvial deposition of sand and mud.
Mainly rock platform	Much of foreshore covered by exposed solid geology.
Mainly sand	Much of sediment consists of sand, derived from processes other than fluvial.
Marsh	Marsh dominant.

### 11.3 OPTION LIST FOR HINTERLAND FIELD.

OPTION	DESCRIPTION AND CONVENTIONS
Alluvium	Much of sediment derived from fluvial deposition of sand and mud.
Drift, boulder clay	Diamicton observed.

## COASTAL EROSION ASSESSMENT (LEWIS)

Drift, boulder clay over visible rock	Diamicton overlying solid geology.
Glacial sand and gravel	Glacially derived sands and gravels observed, representing a different deposition regime to that of diamicton.
Raised beach and marine deposits	Describes raised beaches of early to mid Holocene or pre Holocene age.
Wind blown sand	Generally describes back of beaches or machair systems.

### 11.4 OPTION LIST FOR MODIFIER FIELD.

OPTION	DESCRIPTION AND CONVENTIONS
Cliff over 5 m.	-
Human disturbance	Describes area of accidental or deliberate modification by humans.
Low edge < 5 m.	-
Man made barrier	Specifically built by humans.
Shingle / storm bank	-