

MAP 1: CLACHNAHARRY TO PHOPACHY

Hinterland Geology and Coastal Geomorphology: This section of coastline forms part of the southern shore of the Beaulay Firth. The basement geology consists of sedimentary Middle Old Red Sandstone of the Moine Series. Boulder clay dominates the main lithology away from the coast. Clachnaharry sits on a low-level delta that flanks the river Ness. A degraded Holocene raised shoreline runs west parallel with the present shore. This feature is discontinuous and hard to recognise owing to presence of a road and railway line but it becomes more prominent in the region of Bunchrew. From here and towards the head of the Beaulay Firth, Holocene marine deposits become the dominant coastal lithology. The foreshore is linear until Bunchrew Mains where a foreland at c.5-10m OD juts out into the firth. West of Bunchrew the shoreline is dominated by saltmarshes, mud and shingle that overlook extensive intertidal mudflats.

Erosion Class: The Beaulay Firth is sheltered from larger swell and storm waves from the east in the Moray Firth by the promontories at Chanonry and Fort George. As a result of this, the predominant character of this the coastline between Clachnaharry and Bunchrew Mains is classified as eroding or stable with accretion predominant in parts. Erosion is mainly confined to scour zones at the base of sea walls and at Bunchrew caravan site where concrete rubble and old tree stumps have been placed in an attempt to stabilise erosion at the HWM. Degraded saltmarsh also points to local erosion induced by wave attack. This is less noticeable to the north of Englishton where a sheltered bay is accreting and saltmarsh is well developed. Offshore where bladder-wrack seaweed covers rocks and shingle conditions are considered to be stable.

Built Heritage & Archaeology: The first archaeological remains recorded in this coastal survey consist of the major 19th century engineering works of the Caledonian Canal, designed and built by Telford in 1810 (Butt 1967). The excellent state of preservation of not only the canal, sea locks and basin are complimented by the associated workman's cottages, workshops and hand crane. This example of Industrial heritage is contrasted by the Mesolithic ? shell midden situated on the raised sea beach behind the canal. Further built heritage include Buchrew House and designed landscape gardens, built 1615. To the west of Buchrew house, the remains of an 18th/19th century landing place and associated storehouse were located, although they were both in a very poor state. To conclude, this area shows a varied group of sites in age, location and fabric.

Map 1: Hinterland Geology and Coastal Geomorphology

**1. CLACHNARHARRY: CALEDONIAN
CANAL PIER to CNOCH COTTAGE.**

NH 635 460

2.2km

Mainly mud and sand

Low edge (<10m)

Raised beach and marine deposits

This unit has a low cliff backed by marine sands and gravel overlain by boulder clay. The foreshore is mainly mud with shingle.

Breakwaters protect the canal entrance.

**2. North of CNOCH COTTAGE to east of
PHOPACHY FARM**

NH 617 460

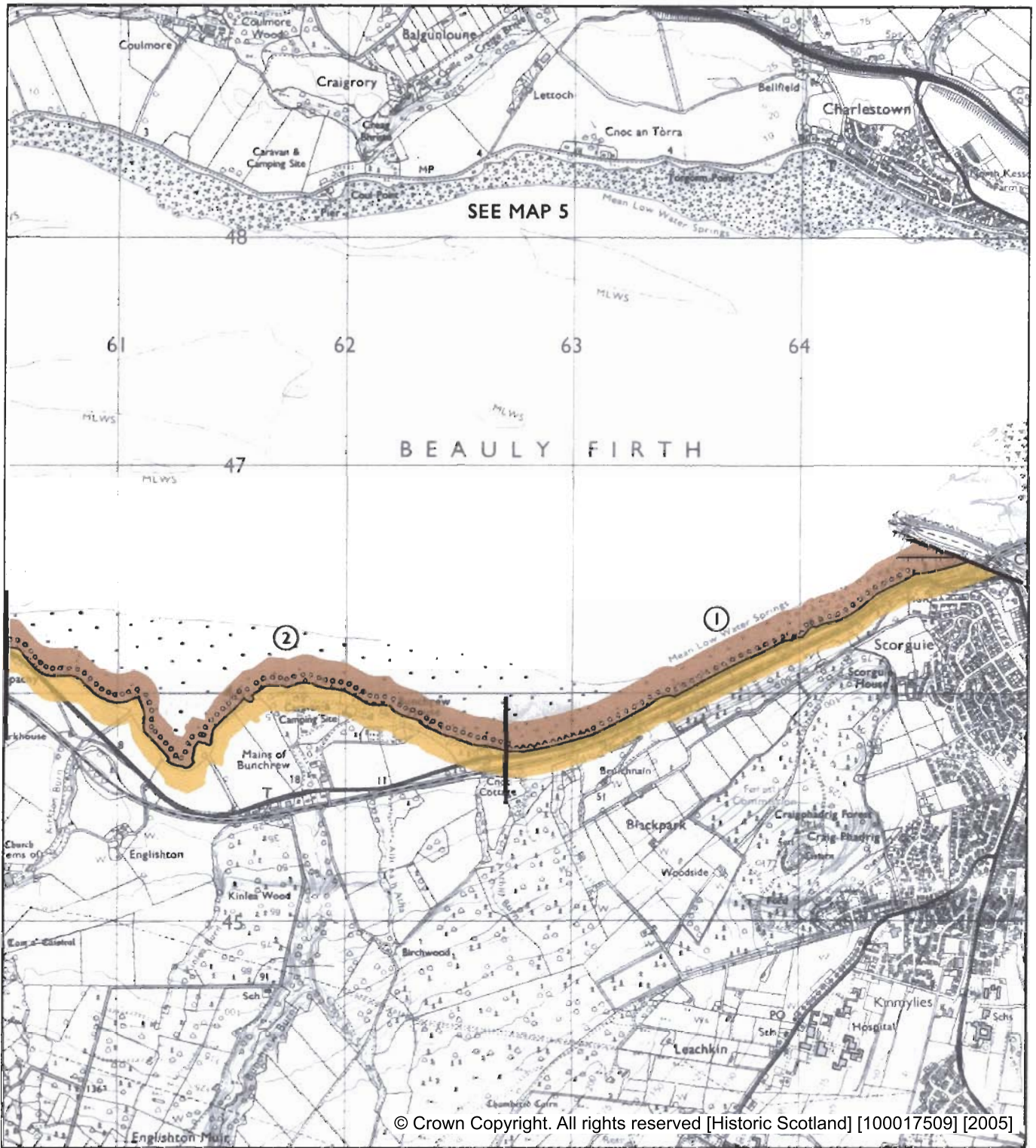
3km

Mainly mud and shingle

Low edge (<10m)

Raised beach and marine deposits

Curvilinear low cliff-edge backed by marine derived sands and gravel consolidated by boulder clay. Estuarine tidal flats of mud and shingle.



MAP 1: CLACHNARRY TO PHOPACHY

MORAY FIRTH SURVEY Grid ref: NH 61-65/44-49

1:25 000

Basemap: O.S. Pathfinder Series
Sheet 177

© Crown Copyright Reserved

HINTERLAND GEOLOGY AND FORESHORE GEOMORPHOLOGY

Assessment date: 08 September 1998

Hinterland:

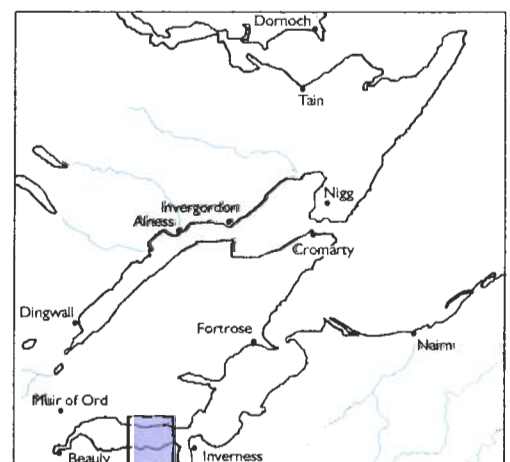
- Drift, boulder clay
- Drift, boulder clay over visible rock
- Raised beach and marine deposits
- Blown sand
- Glacial sand and gravel
- Alluvium

Coast edge:

- Low edge (< 5m tall)
- Cliff over 5m tall
- Man made barrier
- Shingle/storm bank
- Human disturbance

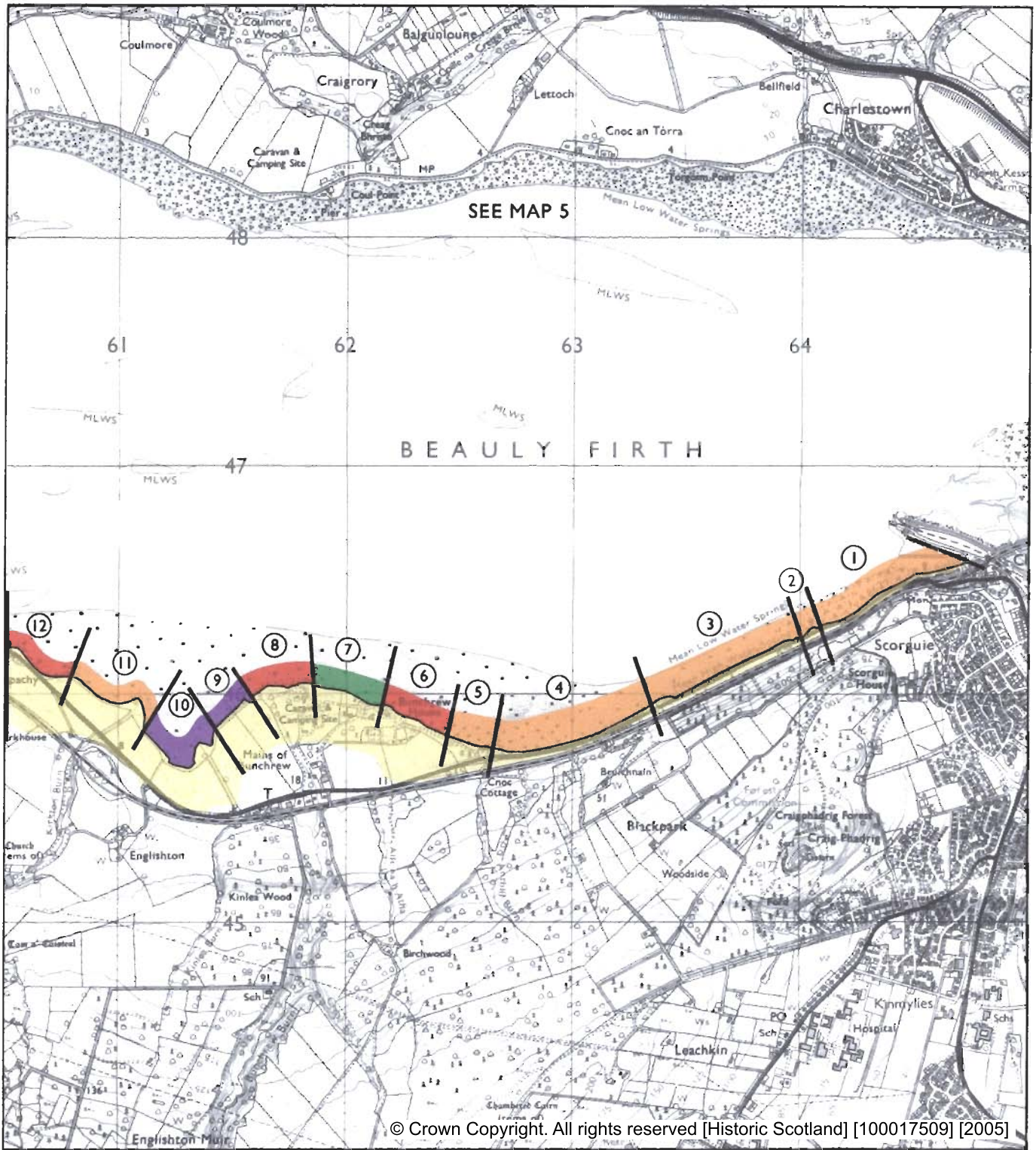
Foreshore:

- Mainly rock platform
- Mainly sand
- Mainly alluvial/marine mud
- Marsh



Map 1: EROSION

- 1. CLACHNARRY to SCOURUIE**
NH 644 464
0.8km
Eroding or stable
Concrete sea defences are being eroded by scour at their base. Mudflats contain patches of boulders and shingle that has evidence for accretion.
- 2. WEST SCOURUIE**
NH 640 463
0.5m
Eroding or stable
This unit of coastline is defended by concrete rubble that is eroding at the base. Mudflats are accreting
- 3. WEST OF SCOURUIE to north of BRUICHCHAIN**
NH 635 462
7.2km
Eroding or stable
A concrete sea wall defends this unit of coastline that is being effected by scour at the base. Mudflats are accreting with shingle banked against the MHW.
- 4. North of BRUICHCHAIN to North of CNOC COTTAGE**
NH 630 458
0.7km
Eroding or stable
A concrete sea wall defends this unit. Erosion is occurring at the MHW. Dumped rubble also shows signs of erosion. The intertidal zone appears to be stable with the accretion of mud and shingle
- 5. North of CNOC COTTAGE to BUNCHREW HOUSE**
NH 625 458
0.2km
Eroding or Stable
Sea defences being effected by erosion. Foreshore scoured seaweed and rocks.
- 6. BUNCHREW HOUSE**
NH 623 459
0.3km
Definitely Eroding
The land immediately in front of Bunchrew House is defended by a sea wall that shows signs of scouring at its base. There appears to be a noticeable lack of shingle against the MHW which suggest that sediment supply is reduced here for reasons that are not clear
- 7. East of BUNCHREW HOUSE to BUNCHREW CARAVAN HOUSE**
NH 620 460
0.3km
Stable
This unit is stable with a wide range of different particle sizes on a low angled beach. Vegetation at the MHWMS lends additional stability to the backshore. Accreting mud and shingle form the wide intertidal area.
- 8. BUNCHREW CARAVAN SITE**
NH 618 461
2.8km
Definitely Eroding
Demolition rubble and large tree stumps have been dumped at the HWM in an attempt to defend this section of shoreline. In parts the sea has scoured out some of this material from the base of the rubble. The foreshore is well exposed with boulders and shingle
- 9. MAINS of BUNCHREW**
NH 615 459
0.2km
Both Accreting and Eroding
This unit has a noticeable lack of saltmarsh and the fronting cobble beach appears to be eroding. Mud and shingle is accreting on the wide foreshore.
- 10. North of ENGLISTON**
NH 613 457
0.4km
Both Accreting and Eroding
Saltmarsh development is leading to accretion in parts of this sheltered bay. Out towards the intertidal flats a series of piles are exposed and it is not clear if these are old sea defences. Owing to the sheltered position mud is accreting on the foreshore.
- 11. North of PARKHOUSE**
NH 610 460
0.4km
Eroding or stable
The hinterland is well vegetated but saltmarsh is slowly eroding from the HWM. The beach consists of shingle and mud which appears to be accreting on foreshore.
- 12. PHOPACHY**
NH 607 461
3.2km
Definitely Eroding
Backshore well vegetated with an eroding saltmarsh at the HWM caused by scouring in storm conditions. Mud and shingle are exposed on the tidal flats.



MAP 1: CLACHNARRY TO PHOPACHY

MORAY FIRTH SURVEY Grid ref: NH 61-65/44-49

1:25 000

Basemap: O.S. Pathfinder Series Sheet 177

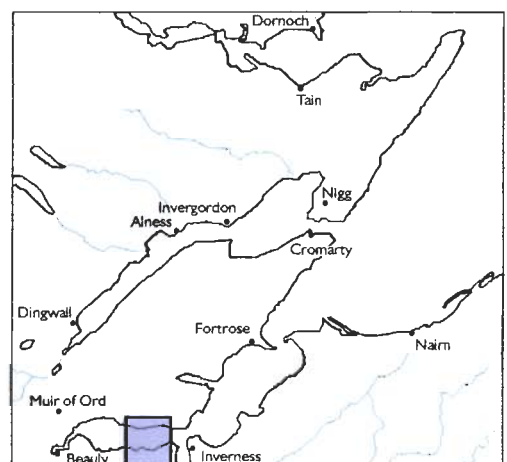
© Crown Copyright Reserved

EROSION CLASS

Assessment date: 08 September 1998

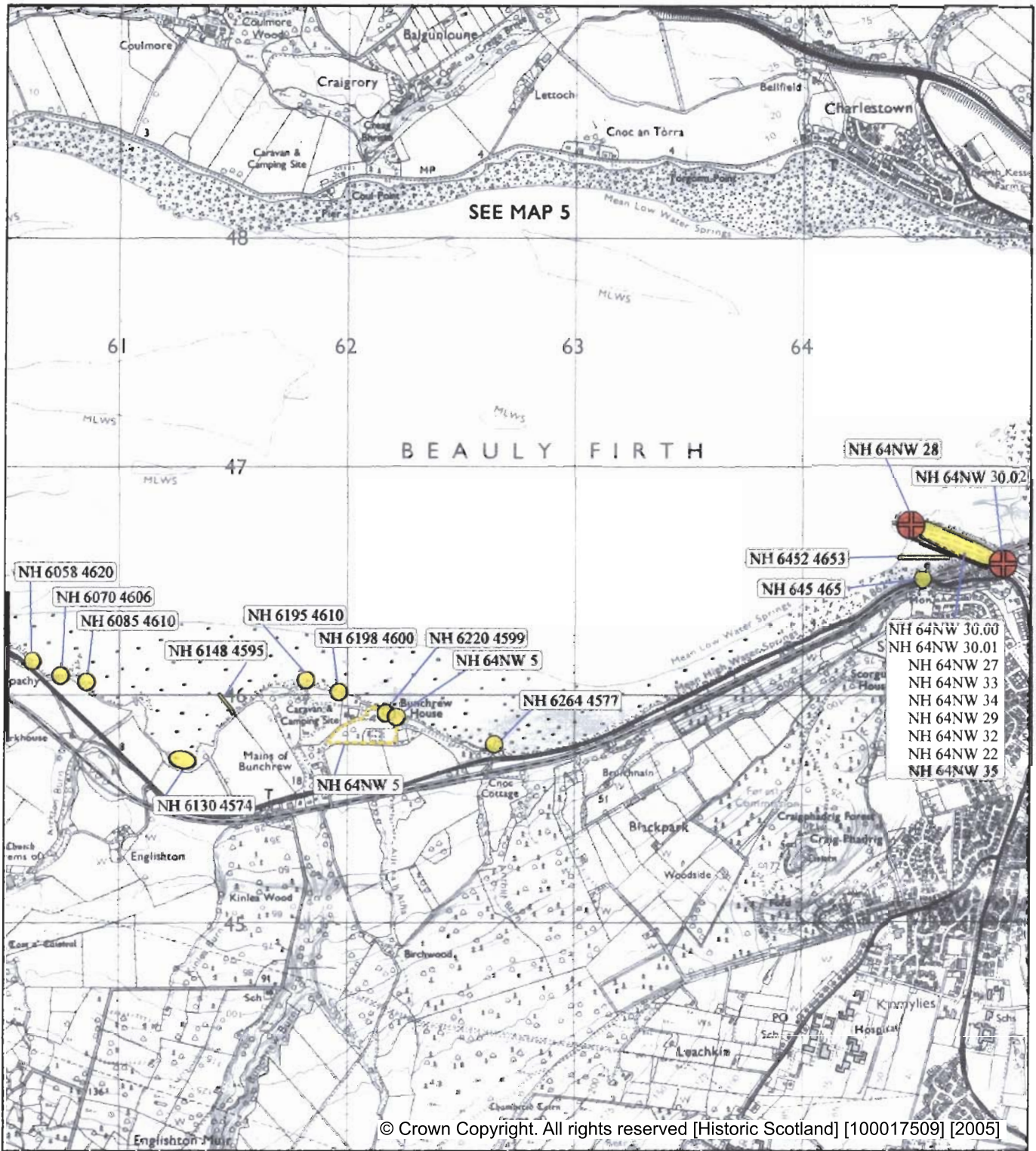
Key:

- Definitely accreting
- Accreting or stable
- Stable
- Eroding or stable
- Definitely eroding
- Both accreting and eroding
- No access
- Land below 10m



MAP 1: BUILT HERITAGE AND ARCHAEOLOGY

Coastal Edge & Foreshore	Sites in the Hinterland	Coastal edge & Foreshore	Sites in the Hinterland	Sites in the Hinterland
NH 6452 4653 CLACHNAHARRY Disused pier 19 th century AD Poor Nil	NH64NW 30.00 NH 6442 4676 - 6500 4645 CLACHNAHARRY Caledonian Canal 19 th century AD Good Nil	NH 6148 4595 BUNCHREW Wooden piles forming fence line Uncertain Good Nil	NH64NW 29 NH 6473 4657 CLACHNAHARRY, 2 Low St Cottages 19 th century AD Good Nil	NH64NW 28 - Scheduled & Listed C NH 6447 4673 CLACHNAHARRY Caledonian Canal; sea lock & lock keeper's cottage 19 th century AD Good Nil
NH64NW 2 NH 645 465 CLACHNAHARRY Shell midden (not located) Uncertain Unknown Nil	NH64NW 30.01 NH 6479 4649 CLACHNAHARRY Caledonian Canal, hand crane 19 th century AD Good Nil	NH 6130 4574 BUNCHREW Wooden posts across inlet, possible fish trap Uncertain Poor Survey	NH64NW 32 NH 6471 4667 CLACHNAHARRY Canal cottages 19 th century AD Good Nil	NH64NW 5 NH 6217 4591 BUNCHREW Residential house; designed landscape 17 th century AD; built 1615 Good Nil
NH 6264 4577 ANTHILL Groyne Unknown Fair Nil	NH64NW 30.02 - Scheduled NH 6488 4656 CLACHNAHARRY Caledonian Canal, lock 19 th century AD Good Nil	NH64NW 37 NH 6085 4610 PHOPACHY Stone rubble remains of landing place and storehouse 18 th /19 th century AD Poor Survey	NH64NW 5 NH 6217 4591 BUNCHREW Residential house; designed landscape 17 th century AD; built 1615 Good Nil	
NH 6222 4591 BUNCHREW Wooden posts and concrete pipe Unknown Fair Nil	NH64NW 27 - Listed C NH 6487 4653 CLACHNAHARRY Caledonian Canal; lock, workshops 19 th century AD Good Nil	NH6070 4606 PHOPACHY Land drain outfalls 20 th century AD Good Nil	NH64NW 72 NH 6044 4612 PHOPACHY Residential country house 18 th /19 th century AD Good	
NH 6220 4599 BUNCHREW Concrete slipway 20 th century AD Poor Nil	NH64NW 33 NH 6483 4659 CLACHNAHARRY Caledonian Canal, railway swing bridge 20 th century AD; built 1909 Good Nil	NH 6058 4620 PHOPACHY Wooden piles Uncertain Poor Nil	NH 6466 4654 CLACHNAHARRY, 10 Low St Cottages 19 th century AD Good Nil	
NH 6198 4600 BUNCHREW Wooden piles Uncertain Good Nil				
NH 6195 4610 BUNCHREW Metal pipe, land drain 20 th century AD Good Nil	NH64NW 34 NH 6481 4657 CLACHNAHARRY, Station Railway signal box 20 th century AD Good Nil		NH64NW 35 Listed B NH 647 466 CLACHNAHARRY Caledonian Canal, sea lock basin 19 th century AD Good Nil	



MAP 1: CLACHNARRY TO PHOPACHY

MORAY FIRTH SURVEY Grid ref: NH 61-65/44-49

1:25 000

Basemap: O.S. Pathfinder Series Sheet 177

© Crown Copyright Reserved

BUILT HERITAGE AND ARCHAEOLOGY

Assessment period: September 1998

Key:

Protected Ancient Monument, or area of designated wreck

Listed Historic Building

Monument formally proposed by Historic Scotland for scheduling, or wreck for designation

Other known Ancient Monuments, or Undesignated wreck

Designated Landscape

Insufficient information; more work needed

Probably archaeologically sterile

