

### 3.1 Ullapool to Ardmair

1. **Hinterland Geology and Coastal Geomorphology:** Loch Broom is a deep sea loch, or *fjord*, located at the mouth of a drowned, glaciated valley, characterised by a 'U'-shaped profile, steep valley sides and truncated spurs descending to sea level. The predominant bedrock along this section of coast is Torridonian sandstone. Due to the sheltered aspect of the loch side there has been only limited development of erosional landforms, though steep cliffs (<30m in height) have developed around the exposed headland of Meall Garbh at the mouth of the loch. The presence of raised beach deposits indicate a drop in relative sea level post-dating the initial flooding, resulting from the partial re-emergence of the land surface caused by isostatic uplift.

The foreshore consists predominantly of a semi-continuous shingle and cobble beach along the edge of Loch Broom, with occasional rock platforms occurring at the base of exposed headlands and truncated spurs. The shingle beach profile along the shore of the loch is very shallow and there is little evidence of storm beach development, indicating a lack of exposure to long shore wave activity. Substantial alluvial deposits are located in the mouth of the Ullapool River valley..

2. **Erosion Class:** The north east shore of Loch Broom is an essentially sheltered, stable coastal environment with minor erosion only occurring at the base of truncated spurs (e.g. Sròn a' Bhuic), on the outside of a meander bend in a tidal stretch of the Ullapool River and at the edge of raised beach deposits at Lùib na Mór-choille, which is possibly a result of human interference. There are few indications of active accretion, though coarse beach material supplied by fluvial sources is being transported east along the foreshore by long shore drift, causing small spits to develop at stream outlets. An extensive part of the hinterland is low lying and would be susceptible to increased erosion and marine inundation in the event of a change in climatic conditions or rise in sea level. Much of the coast edge is composed of soft alluvial or raised beach deposits which would be eroded very fast in this event.

The headland of Meall Garbh at the mouth of the loch, in contrast, is an active erosional environment as indicated by the development of extensive coastal cliffs, rock platforms and boulder-filled coves. The underlying bedrock is highly resistant and the rate of regression is likely to be negligible for the purposes of cultural resource management.

3. **Built Heritage and Archaeology:** The settlement pattern along this part of Loch Broom is dominated by the 18th / 19th century crofting townships of Morefield (NH 19 NW 5) and Rhue (NH 19 NW 8). Comparatively few elements of these settlements occur within the coastal zone, and most buildings and structures are located 300-400m from the coast edge. There was no definite evidence of prehistoric or medieval occupation in the coastal zone, though some field system elements in the township of Morefield are possibly earlier than the majority of the extant remains (see Peter May's map of The Barony of Coigach; SRO/ RHP85395). It was difficult to conclusively identify prehistoric and medieval site elements on the basis of a rapid assessment alone.

The later 19th and 20th century use of the coastal zone is represented by a lighthouse at Rubha Cadail (NH 2092 8974), peat cuttings on Meall Garbh (NH 2097 8978 & NH 2103 8979), quarry (NH 2108 8960) and several abandoned hulks in or immediately adjacent to the intertidal zone. One degraded wooden hulk stranded at the mouth of the Ullapool River (NH 2123 8947) is probably 19th century in date and potentially of local significance (Plate 8).

There was no indication of coastal erosion affecting the recorded sites, with the exception of natural deterioration caused by exposure to the elements and human interference (e.g stone robbing. Some field system elements (e.g. stone field boundaries and clearance cairns) may be threatened by minor coast edge erosion at Lùib na Mór-choille. The threat is very slight and the affected cultural elements are considered of low significance. There is also some risk of site disturbance related to the development of land adjoining the southern edge of Morefield (Figure 6).

### 3.1.1 Hinterland Geology and Coastal Geomorphology

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#### 1. ULLAPOOL RIVER

NH 212 894

0.6 km

*Mainly shingle beach*

*Low edge < 5m*

*Alluvial deposits / raised beach*

Fluvial deposits situated at the mouth of a tidal river valley. A spit has formed on the updrift side of the river, fed by a combination of long shore processes and alluvial deposition.

#### 2. LÙIB NA MÓR-CHOILLE

NH 211 895

1.4 km

*Mainly shingle beach*

*Low edge < 5m*

*Raised beach*

An exposed section of shingle foreshore in front of a raised beach terrace.

#### 3. SRÒN A' BHUIC

NH 210 895

0.9 km

*Mainly shingle beach with an isolated section of exposed rock platforms*

*Low edge < 5m with sections of cliff (10m)*

*Peat / soil over visible rock*

A slight headland formed by the submergence of the base of a truncated spur, flanked by shingle beaches. Low cliffs have developed at the base of the hill. The exposed rock has interrupted beach material movement along the shore of the loch

#### 4. LÙIB MORA

NH 210 896

1.2 km

*Mainly shingle beach*

*Low edge < 5m*

*Raised beach*

An exposed section of shingle foreshore in front of a raised beach terrace.

#### 5. MEALL GARBH

NH 209 897

2.5 km

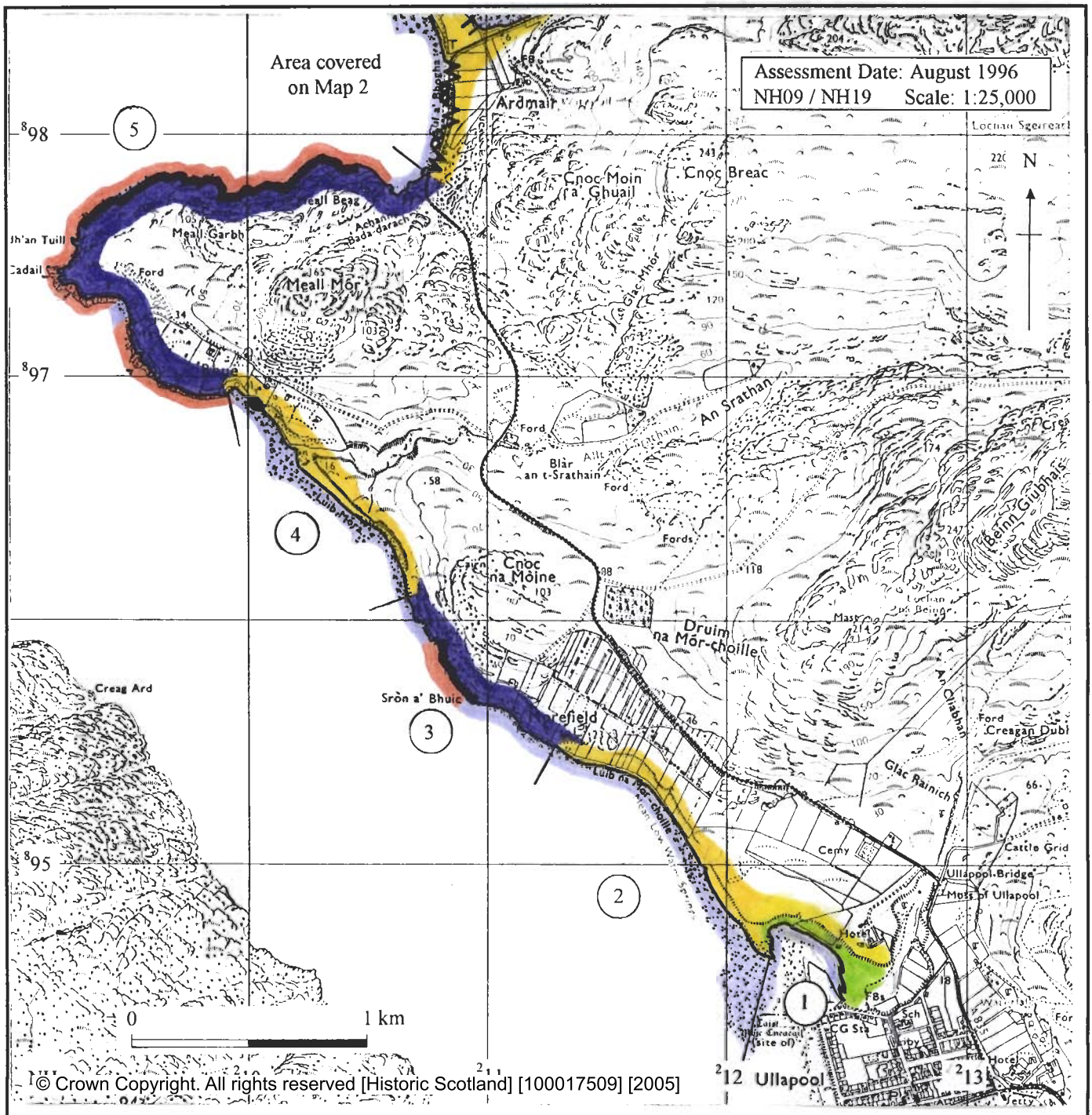
Mainly rock platform / boulder with occasional cobble and boulder beaches.

*High cliffs (>30m) to the north west, and low edge < 5m on the south.*

*Peat / soil over visible rock.*

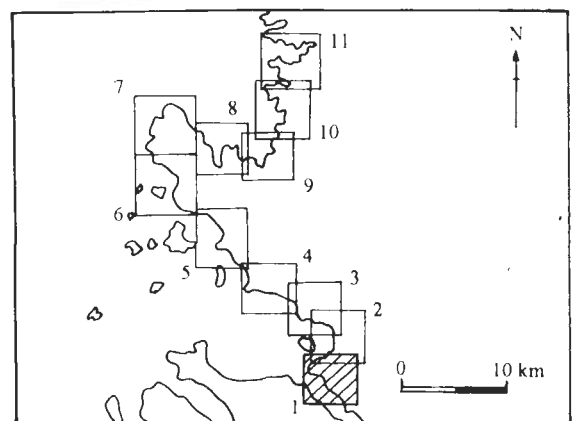
An exposed Torridonian sandstone headland with cobble and boulder beaches in infrequent sheltered bays. Peat filled shelves occur above the shoreline on steep glaciated slopes. Steep cliffs and wave cut platforms have formed around the base of these slopes.

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Key:

<b>Hinterland Geology</b>	
Peat / soil over visible bedrock	
Raised beach and marine deposits	
Blown sand	
Alluvial deposits	
<b>Coast Edge</b>	
Low edge (<5m)	
Cliff (>5m)	
Man made barrier	
Storm beach	
Human disturbance	
<b>Coastal Geomorphology</b>	
Mainly rock platform/boulders	
Mainly shingle/cobbles/boulders	
Mainly sand	
Marsh	



### 3.1.2 Erosion Class

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#### 1. ULLAPOOL RIVER

NH 212 894

0.6 km

##### *Definitely eroding*

The Ullapool River is gradually cutting back through prior alluvial and raised beach deposits on the outside of a tidal meander bend. Recent erosion scars are visible along the edge of a terrace above the river. Gabions have been placed at the upper reaches of the tidal stretch, presumably to prevent erosion at high tide levels or under storm conditions.

#### 2. GOB AN T-SEID

NH 212 894

0.8 km

##### *Accreting or stable*

The movement of shingle along the north east shore of Loch Broom and the deposition of fluvial deposits at the mouth of the Ullapool River have caused a small spit to develop.

#### 3. ALLT NA BEISTE

NH 211 895

0.25 km

##### *Stable*

A present shingle foreshore abuts earlier raised beach deposits to the west of the outlet of a small stream. There are no indications of either active erosion or accretion.

#### 4. LÙIB NA MÓR-CHOILLE

(EAST)

NH 211 895

0.3 km

##### *Definitely eroding*

There is evidence of minor tidal / wave erosion to raised beach deposits, in the form of vertical soil banks on the edge of the shingle foreshore at this point. It is possible that the concentration of erosion at this point is a result of a

combination of boat wash (Bryan 1994, 23.3) and the influence of the stranding of a large fishing vessel on the updrift side, consequently interfering with long shore drift (Hanson 1988, 82-83). The affects of this process on the hinterland township and field systems of Morefield (NH 19 NW 5) are considered negligible, though some attempts have been made to prevent further erosion by the placement of concrete blocks at the coast edge. This process could correct itself over time, however the erosion is concentrated at an obvious curve on the north shore of the loch and may be a reflection of a long term process.

#### 5. LÙIB NA MÓR-CHOILLE

(WEST)

NH 211 895

0.3 km

##### *Stable*

A present shingle foreshore abuts earlier raised beach deposits. There are no indications of either active erosion or accretion.

#### 6. SRÒN A' BHUIC

NH 210 895

1.2 km

##### *Eroding or stable*

Rock platforms, cliffs and pebble beaches occur across the coastal frontage of the truncated spur of a steep, rocky hill. The environment is slightly erosional, though the rate of regression is probably negligible.

#### 7. LÙIB MORA

NH 210 896

0.35 km

##### *Stable*

A present shingle foreshore abuts earlier raised beach deposits. There

are no indications of either active erosion or accretion.

#### 8. ALLT AN T-SRATHAN

NH 210 896

0.25 km

##### *Accreting or stable*

Fluvial deposition has caused a small tidal fan to occur at the mouth of a small stream.

#### 9. RHUE (EAST)

NH 209 896

0.25 km

##### *Stable*

A present shingle foreshore abuts earlier raised beach deposits. There are no indications of either active erosion or accretion.

#### 10. RHUE (CENTRAL)

NH 209 897

0.7 km

##### *Eroding or stable*

Rock platforms on the edge of a coastal terrace. The environment is slightly erosional, though the rate of regression is probably negligible.

#### 11. RHUE (WEST)

NH 209 897

0.1 km

##### *Stable*

A small enclosed bay containing a pebble beach. There are no active indications of erosion, though the beach is located in a very exposed situation.

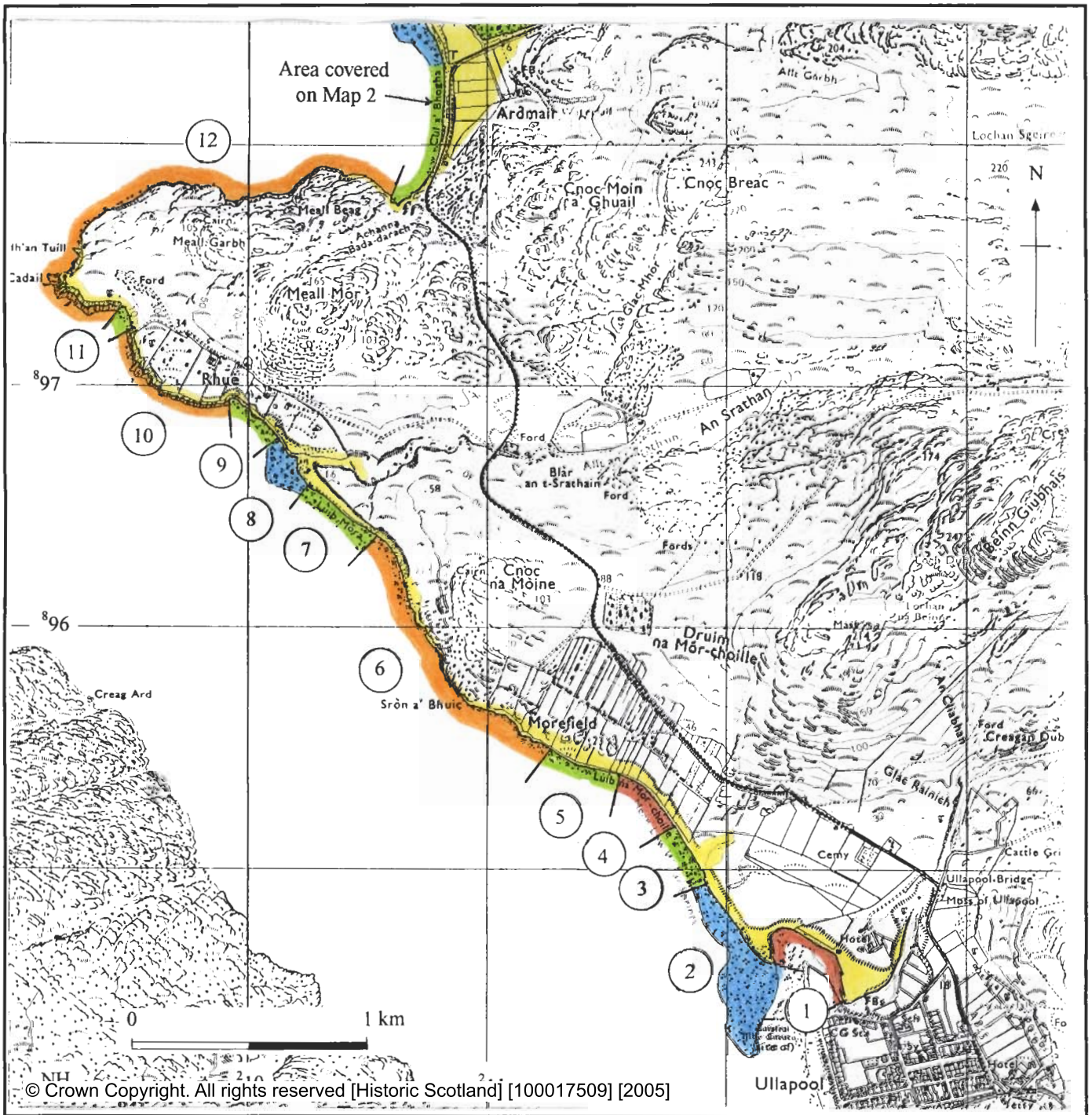
#### 12. MEALL GARBH

NH 210 897

1.8 km

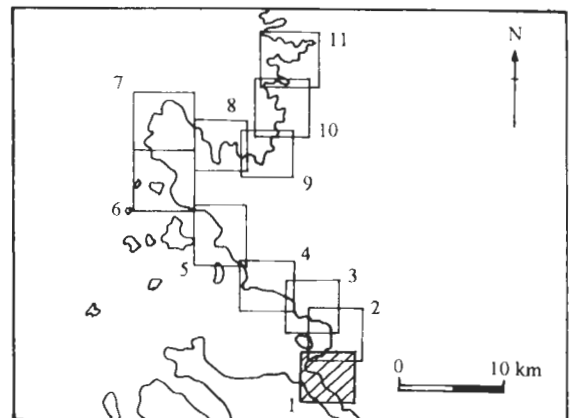
##### *Eroding or stable*

High cliffs and boulder beaches around the base of an exposed headland. The rate of erosion is considered to be very slow owing to the resistance of the bedrock.



Key:

Erosion Class	
Definitely accreting	
Accreting or stable	
Stable	
Eroding or stable	
Definitely eroding	
Both accreting and eroding	
Land below 10m	



### 3.1.3 Built Heritage and Archaeology

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1. MOREFIELD COTTAGE Building NH 2124 8947 18th-19th Century Fair Nil	Nil	16th-19th Century Fair Nil
2. ULLAPOOL RIVER Hulk NH 2123 8947 19th-20th Century Poor Survey	6. MOREFIELD Hulks NH 2116 8953 20th Century Good Nil	10. RUBHA CADAIL Lighthouse NH 2092 8974 20th Century Good Nil
3. GOB AN T-SEID Field systems, posts NH 2122 8948 18th-20th Century Fair Survey	7. MOREFIELD Township, field systems NH 19 NW 5 7.1 Building, boat naust NH 2103 8955 7.2 Boat naust NH 2111 8956 16th -20th Century Fair Nil	11. MEALL GARBH Peat cuttings NH 2097 8978 19th-20th Century Fair Nil
4. GOB AN T-SEID Circular stone features (?) NH 2120 8949 Pre-modern Fair Survey	8. CNOC NA MOINE Quarry NH 2108 8960 19th-20th Century Good Nil	12. MEALL BEAG Peat cuttings NH 2103 8979 19th-20th Century Fair Nil
5. MOREFIELD Hulks NH 2117 8952 20th Century Good	9. RHUE Township, field systems, cultivation NH 19 NW 8 9.1 Building complex NH 2102 8966	13. ACHANA BADA DARACH Cultivation NH 2106 8977 16th-19th Century Fair Nil

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