

**Built heritage and archaeology** - The muddy foreshore which dominates the intertidal zone provides a favourable burial environment for archaeological remains. This, combined with the considerable trade carried on up the Eden Estuary from 1104 when David 1 granted it a charter conferring port status, until the mid 19th Century when coastal schooners and sloops operated from two quays at Guardbridge (Dobson 1997,11) illustrates the archaeological potential of the area. However, the thick mud which covers the banks and foreshore of the Eden makes field investigation very difficult and those features which the survey identified were almost all viewed at a distance. Foreshore features of interest included four stakes in a square formation (NO445301930) perhaps marking a fish trap site, and two substantial stone piles on a shingle spit below R.A.F. Leuchars (NO46501990). Probably the most important monuments in this section are the series of bridges crossing the River Eden, the 15th Century Old Eden Bridge (NO452188), the circular stone foundation pillars from the Old Railway Bridge (NO45151890), and the smaller 18th Century Old Motray Bridge (NO45021975) which crosses Motray Water nearby the industrial monument of Guardbridge Paper Mill (NO45051950). All of these appear to be in fair condition. The history of R.A.F. Leuchars dates back to 1911 when the Royal Engineers used the area for balloon experiments before establishing a proper airfield there in 1918. Due to M.O.D. restrictions, the team's survey of the coastline adjacent to R.A.F. Leuchars was limited to coverage of the foreshore with a strict prohibition of photography of buildings on the coast edge belonging to the M.O.D. The positions of pillboxes, aircraft buildings, and radio masts were noted in two main groupings (NO46081990, NO46431980).

**Hinterland geology and coastal geomorphology; Erosion class**-The hinterland geology of the outer Eden Estuary consists of blown sands with raised beach deposits while the inner estuary is composed of alluvium with raised beach deposits. Along the foreshore, the outer estuary has sand and shingle promontories at Coble Shore and Coble House Point, which extend into the silty muds of the lower foreshore. The inner estuary is dominated by muds which are stabilised with marsh as far as Guardbridge where fluvial influences dominate with the deposition of alluvium on the estuary banks. In the outer estuary the coast edge at Coble Shore and Coble Point is backed by low dunes. Along the south side of the inner estuary, a flat lying area of marsh extends inland. Along the north coast edge of the estuary a manmade wall extends to the weir. East of the weir, tipped wastes compose the coast edge. The outer estuary experiences both erosion and accretion, associated with the changing position and variable flow of the Eden. Human disturbance helps to protect the edge, with the placing of concrete slabs and rubble preventing erosion (Erosion Units 2,4). The inner estuary is mostly stable being dominated by thick muds and marsh development. However, where the estuary narrows the coast edge is being undercut during periods of high water flow.

**MAP 5 GUARDBRIDGE TO EDEN ESTUARY**

**EROSION UNITS**

**1**  
NO46891935  
0.6 km  
Both accreting and eroding  
*Coble Shore is a sand and shingle formation which projects into the Eden. Coble Shore experiences both erosion and accretion relating to changes in the position of the River Eden.*

**2**  
NO46681938  
0.3 km  
Definitely eroding  
*West of Coble Shore the coast edge is susceptible to erosion at high waters. Farmers posts are close to the undercut edge. The tipping of rubble and large concrete slabs is to protect the edge.*

**3**  
NO45951911  
1.3 km  
Accreting or stable  
*The upper foreshore is stabilised by mud flats with marsh and reed beds which extend inland over a wide flat lying tidal area. The lower foreshore is associated with accreting muds and silts where the estuary widens.*

**4**  
NO45251925  
0.4 km  
Definitely eroding  
*The Estuary narrows as it curves towards Guardbridge and the variable waterflow of the Eden erodes the low lying edge at high water. Erosion has created an irregular terrace edge, along which fence posts have come adrift. The tipping of bricks and concrete debris provides some protection to the coast edge.*

**5**  
NO45231892  
0.3 km  
Accreting or stable  
*Sand bar accretion occurs around the*

*posts of the old bridge. The bars have developed parallel to the water flow.*

**6**  
NO45231865  
0.5 km  
Eroding or stable  
*The dynamic river system of the Eden changes position over time. The east bank is a concave river meander bend and is subject to undercutting erosion at high waters.*

**7**  
NO45091879  
0.3 km  
Definitely accreting  
*The west side of River Eden is associated with the deposition of silts and sands in the low energy zone of the river bend.*

**8**  
NO45191949  
0.9 km  
Stable  
*Along the frontage of the paper-mill the estuary widens and muds are deposited on the foreshore. An old stone wall, although in disrepair protects the edge under the bridge. The upper part of a concrete wall in front of the papermill is in very bad condition.*

**9**  
NO45211979  
0.2 km  
Definitely accreting  
*Mud accretion on the foreshore is increased at the weir entrance and where the Eden Estuary changes direction.*

**10**  
NO45381971  
0.5 km  
Eroding or stable  
*Boulders, tipped bricks and concrete provide some stability along the coast edge of the reclaimed land, however there are signs of undercutting at high waters.*

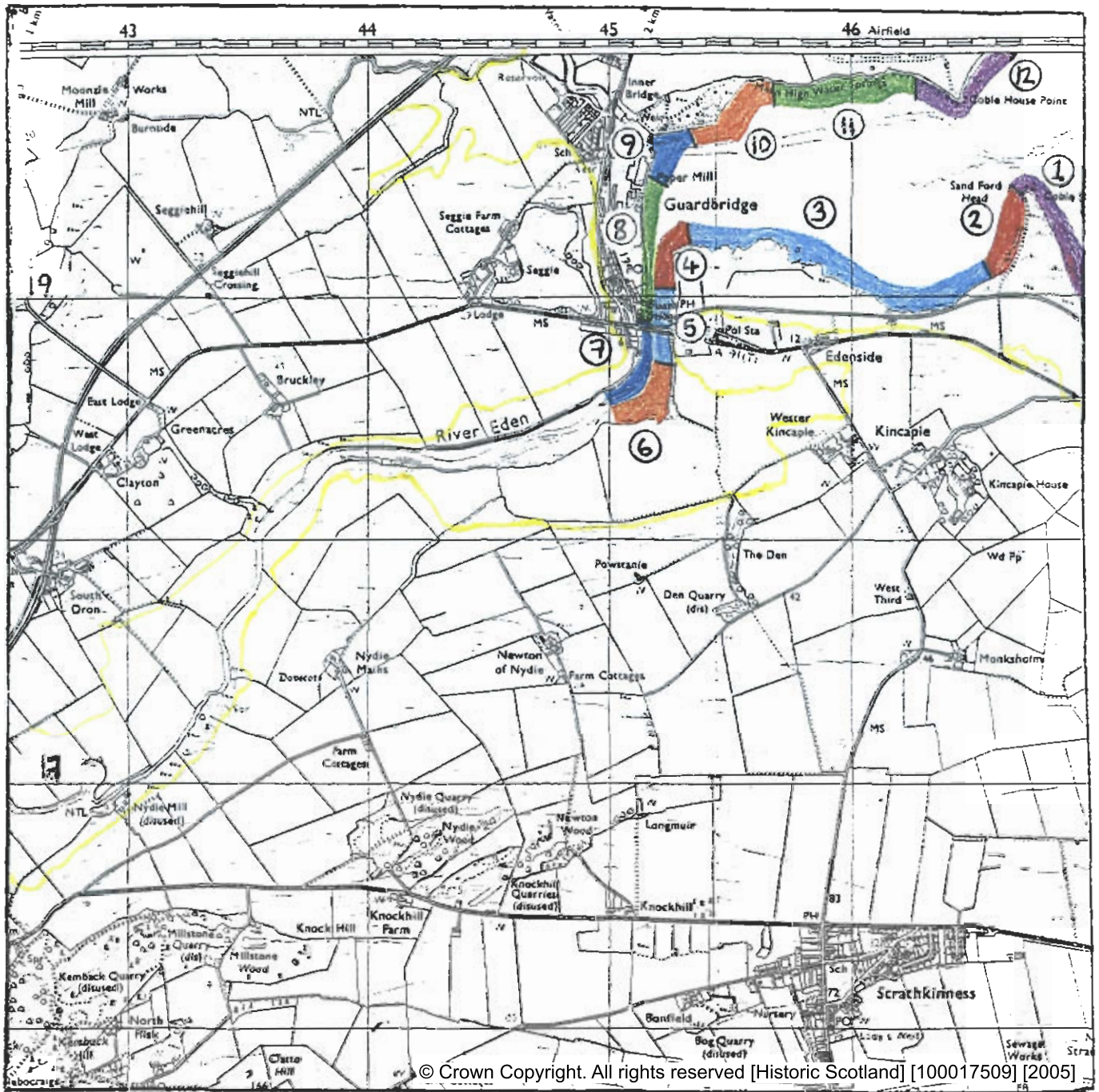
**11**  
NO45891990

0.8 km  
Stable  
*Wire mesh reinforcement and vegetation protect the coast edge. The mud flats on the upper foreshore are stabilised with reeds and marsh species. At high waters there is possible undercutting of the coast edge.*

**12**  
NO46571985  
0.6 km  
Both accreting and croding  
*Accretion of silty sands and shingle occurs on the upper foreshore at Coble House Point, the sand and shingle formation projects into the estuary. Boulders are placed at the coast edge for protection as there is variable water flow through this narrower section of the Estuary.*

MAP CLASS: EROSION  
 (Assessment date: 3 October 1996 )  
 NO 41/51. Scale 1:25,000

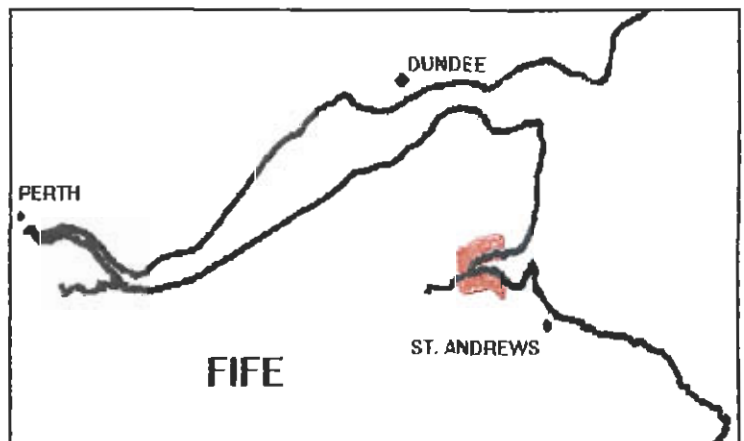
**GUARDBRIDGE TO TIDAL ESTUARY OF RIVER EDEN**



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**KEY**

| Erosion class              | Staedtler colour | Colour |
|----------------------------|------------------|--------|
| Definitely Accreting       | ultramarine blue |        |
| Accreting or stable        | light blue       |        |
| Stable                     | light green      |        |
| Eroding or stable          | orange           |        |
| Definitely Eroding         | scarlet          |        |
| Both accreting and eroding | purple           |        |
| No access                  | blank            |        |
| Land below 10m             | canary yellow    |        |



**MAP 5 GUARDBRIDGE TO EDEN ESTUARY**

**GEOLOGY UNITS**

**1**  
NO46831935  
0.6 km  
Sand  
Low edge (<5 metres)  
Blown sands with raised beach and marine deposits  
*The upper foreshore is composed of sand, with a variable proportion of shingle. Towards the lower foreshore silty sands change to mud. The hinterland progress from blown sands which create a dune ridge at the coast edge to raised beach deposits.*

**2**  
NO46681935  
0.3 km  
Alluvial/marine muds  
Human disturbance  
Blown sands with raised beach and marine deposits  
*Silty sands and muds compose the foreshore with shingle on the upper foreshore. Human disturbance along the coast edge involves tipping and the placing of concrete slabs.*

**3**  
NO45951911  
1.3 km  
Marsh  
Low edge (<5 metres)  
Alluvium with raised beach and marine deposits  
*The muds of the wide foreshore create flats with marsh and reed development. The marsh extends inland to form the wide low lying area of sanctuary zone. The old raised shoreline rises from the flat lying zone towards Kincapple farm in the south.*

**4**  
NO45231900  
0.6 km  
Alluvial/marine muds  
Human disturbance  
Alluvium with raised beach and marine deposits  
*As the River Eden narrows the foreshore is dominated by alluvial*

*muds. Tipping and emplacement of rubble have occurred along the low coast edge.*

**5**  
NO45231875  
0.3 km  
Alluvial/marine muds  
Low edge (<5 metres)  
Alluvium with raised beach and marine deposits  
*The river bend is associated with the deposition of alluvial muds. The hinterland consists of alluvial deposits associated with the changing positions of the river.*

**6**  
NO45131942  
0.5 km  
Alluvial/marine muds  
Manmade barrier  
Alluvium with raised beach and marine deposits  
*Along the frontage of the papermill towards the weir the edge of the estuary is bordered by stone or concrete walls. The embankment behind is vegetated with trees and shrub. The hinterland is a built up area however the drift consists of raised beach deposits.*

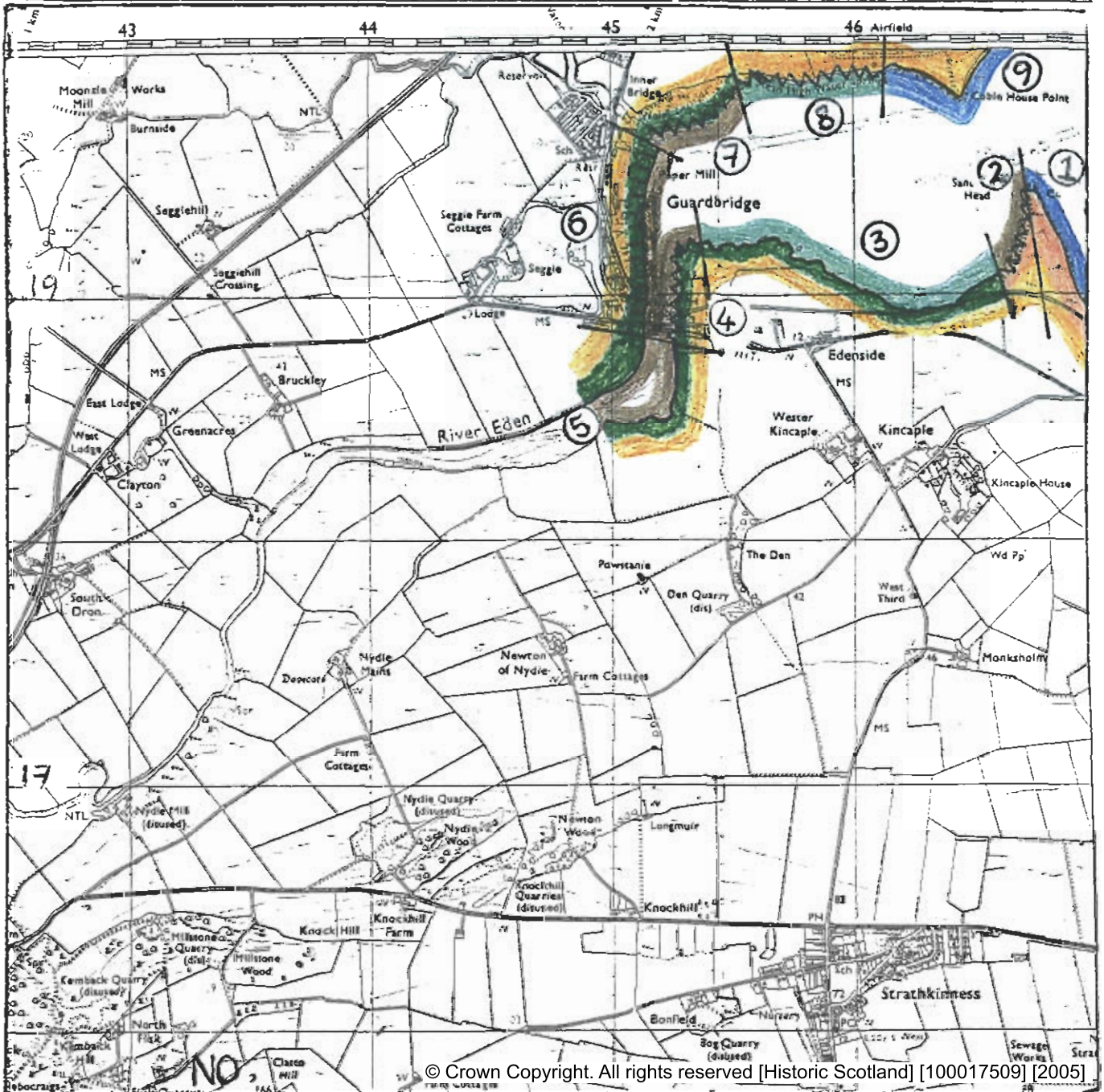
**7**  
NO45251975  
0.6 km  
Alluvial/marine muds  
Human disturbance  
Alluvium with raised beach and marine deposits  
*The north coast of the Eden is composed of muds. Human disturbance results in an edge composed of tipped wastes.*

**8**  
NO45891990  
0.8 km  
Marsh  
Human Disturbance  
Raised beach and marine deposits  
*The mud composing the foreshore has a covering of algae. Marsh and reeds develop on the upper foreshore. Human disturbance along the low coast edge consists of the deposition of rubble and wire mesh reinforcement*

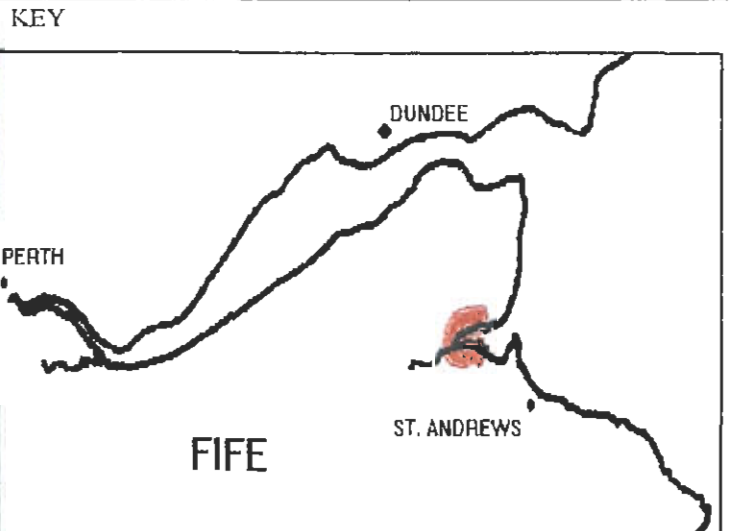
*protects the sandy raised beach deposits of the hinterland. Elsewhere, the low edge is vegetated with reeds or shrub.*

**9**  
NO46571985  
0.6 km  
Mainly sand  
Low edge (<5 metres)  
Raised beach and marine deposits  
*Coble House Point is a sand and shingle formation which projects into the muds at low water. The low edge is protected with rubble and is vegetated with marram grasses.*





| Hinterland Geology                    | Shedder colour         |  |
|---------------------------------------|------------------------|--|
| Drift, boulder clay                   | light grey             |  |
| Drift, boulder clay over visible rock | Caran D'ache violet    |  |
| Raised beach and marine deposits      | golden brown           |  |
| Blown sand                            | peach                  |  |
| Glacial sand and gravel               | magenta                |  |
| Alluvium                              | grass green            |  |
| <b>Coast edge</b>                     |                        |  |
| Low edge (< 5m)                       | thin black line        |  |
| Cliffs (> 5m)                         | solid black line       |  |
| Man-made barrier                      | black line with spines |  |
| Shingle beach                         | small circles          |  |
| Human disturbance                     | black corals           |  |
| <b>Coastal Geomorphology</b>          |                        |  |
| Mainly rock platform                  | vermillion             |  |
| Mainly sand                           | indigo                 |  |
| Mainly alluvial/marine mud            | sienna brown           |  |
| Marsh                                 | tree green             |  |



**MAP 5 GUARDBRIDGE TO  
EDEN ESTUARY**

**BUILT HERITAGE AND  
ARCHAEOLOGY UNITS**

*Sites behind the coast edge*

**NO45101890**  
EDENSIDE HOUSE, ST  
ANDREWS RD  
LISTED BUILDING  
19th Century  
Not seen  
*Nil*

**NO41NE22**  
GUARDBRIDGE, OLD  
RAILWAY STATION  
RAILWAY STATION  
BUILDINGS  
Uncertain  
Not seen  
*Nil*

*Sites on the coast edge and  
foreshore*

**NO46951940**  
Circular mussel catching and  
collecting tank embedded in  
mud-flats  
20th Century  
Poor  
*Nil*

**NO465192**  
Metal stakes on foreshore  
20th Century  
Fair  
*Nil*

**NO45301930**  
4 stakes in square formation -  
possible eel trap or else.  
Uncertain  
Fair - seen from afar; mud too  
deep to examine closely  
*Nil*

**NO45501935**  
4 stakes in square formation -  
possible eel trap or else.  
Uncertain  
Fair - seen from afar; mud too

deep to examine closely  
*Nil*

**NO45251890**  
GUARDBRIDGE HOTEL &  
COTTAGES, ST ANDREWS  
RD

LISTED BUILDING  
18th Century  
Fair  
*Nil*

**NO45251890**  
WILLOWBANK,  
GUARDBRIDGE  
LISTED BUILDING  
19th Century  
Not seen  
*Nil*

**NO45281895**  
Remains of wooden jetty  
19th -20th Centuries  
Poor  
*Nil*

**NO45151890**  
Circular stone pillars of old  
railway bridge  
19th Century  
Fair  
*Nil*

**NO41NE1**  
GUARD BRIDGE,  
Bridge  
LISTED BUILDING AND  
PROTECTED ANCIENT  
MONUMENT  
15th Century  
Fair  
*Nil*

**NO45021975**  
OLD MOTRAY BRIDGE,  
GUARDBRIDGE  
LISTED BUILDING  
18th Century  
Fair  
*Nil*

**NO45051950**  
Guardbridge Paper Mill  
19th Century  
Fair  
*Nil*

**NO46081990**  
Pillbox at Leuchars airfield boundary  
fence  
20th Century  
Fair  
*Nil*

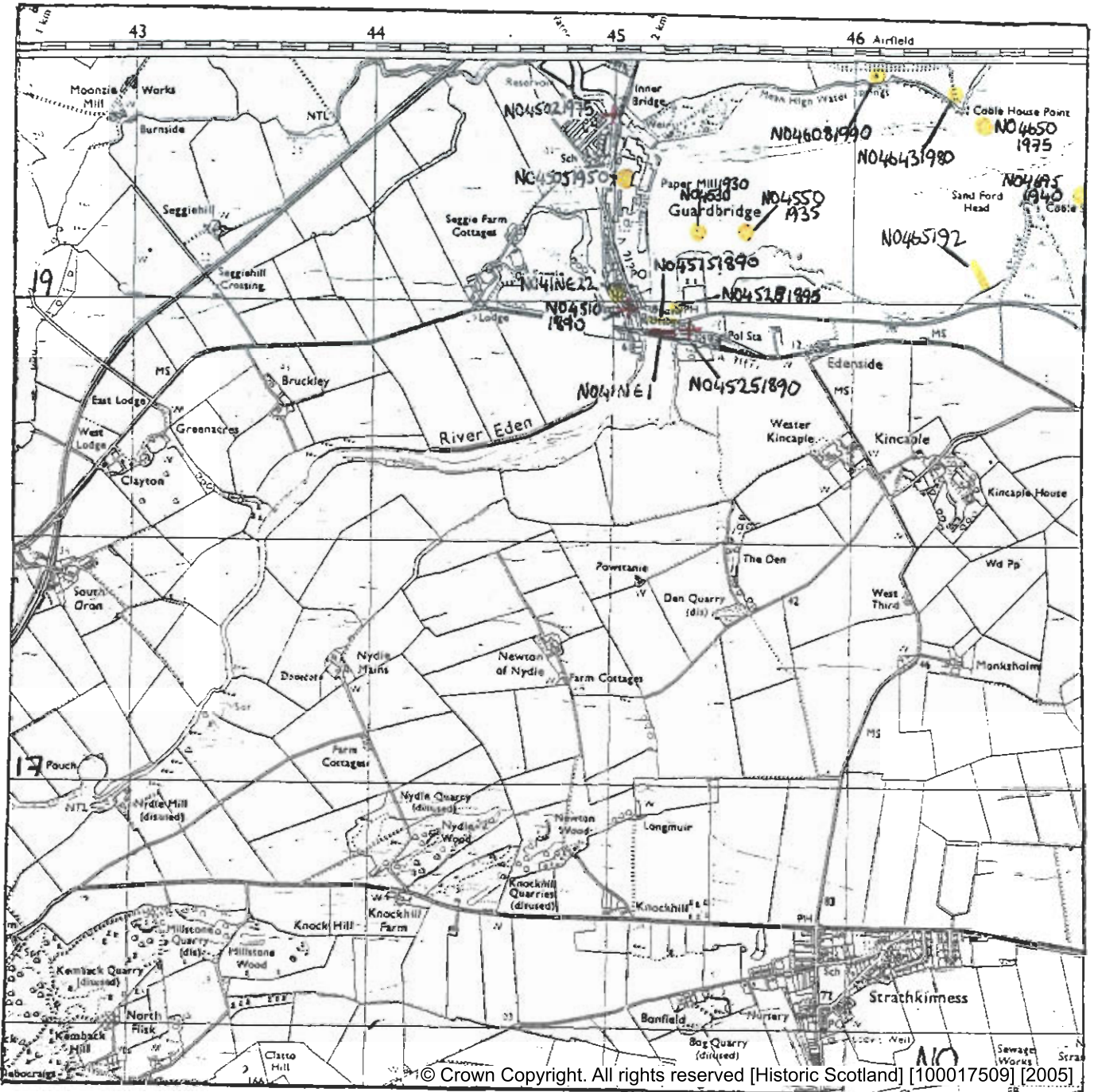
**NO46431980**  
Pillbox and Radio mast for Leuchars  
airfield  
20th Century  
Fair  
*Nil*

**NO46501975**  
Two stone piles on shingle beach  
Uncertain  
Poor  
*Survey*



MAP CLASS: Built Heritage and Archaeology  
 (Assessment date: 3 October 1996)  
 NO 41/51. Scale 1:25,000

**GUARDBRIDGE TO TIDAL ESTUARY OF RIVER EDEN**



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**KEY**

| Site location          | Symbol         | Staetler colour | Significance  |
|------------------------|----------------|-----------------|---|
| NGR e.g.<br>NO12345678 | solid roundel  | carmine         | Protected Ancient Monument  |
|                        | cross          | carmine         | Listed Historic Building  |
|                        | open roundel   | carmine         | Monument formally proposed by Historic Scotland for designation       |
| NMRS e.g.<br>NO28NW35  | solid roundel  | yellow ochre    | Other known monument  |
|                        | dashed outline | yellow ochre    | Designated landscape  |
|                        | open roundel   | yellow ochre    | Undesignated wreck  |
|                        | area           | green           | Insufficient information, more work needed (no access, or not walked) |
|                        | area           | blue            | Probably archaeologically sterile                                     |

