

MAP 6 SHELLY POINT LEUCHARS TO TENTSMUIR SANDS

Built heritage and archaeology - The soft muds and sands which form a wide intertidal zone at the mouth of the Eden estuary provide a favourable burial environment for archaeological remains. Taking this into account it may be surprising that more sites were not found suggesting pre 20th Century useage of the area. Intertidal sites which were recorded all date to the 20th Century and represent features relating to wartime defence of the Leuchars airforce base complex. None of these sites have been previously recorded and follow up work is needed in most cases. The southern boundary of Leuchars airfield (NO42SE59) extends right up to the coast edge and hangars, storage huts, and a radar tower are all located within the survey zone. These were not recorded by photograph due to MOD restrictions. Offshore, apart from scattered debris from the airfield there is not much to be seen on the west side of Shelly Point. However, on the east side of the point a network of wooden stakes extends north east along the foreshore NO48452047 to an area centred NO500210. These are probably glider trap defences from World War II. A large timber frame platform visible low down on the foreshore (NO49452119) was built during the 1970's by St. Andrews University as a tide recording platform which is no longer used. From NO49020287 to NO49452305, a line of tank traps continues along the back of the dune system, covered over in places by blown sand. The dunes obscure this line of traps completely at NO49402205 before they reappear briefly at NO50042424, exposed by the dune erosion caused by the pathway leading from Kinshaldy beach car park down to the beach. An interesting group of World War II buildings can be seen in the vicinity of Earlsall Bird Sanctuary (NO4922). These unrecorded monuments consist of a probable generator storage hut (NO499732279), two pillboxes (NO49892286 and NO49862302), and two collapsed brick buildings (NO49772263 and NO49892286).

Hinterland geology and coastal geomorphology; Erosion class- South facing beaches occur on the north side of the Eden Estuary and east facing beaches south of Kinshaldy. The foreshore of the north Eden estuary consists of broad wet mud beaches of the tidal estuarine flats, with fringing dry sands on the upper foreshore. At Shelly Point there is a sand beach which gives way westwards to a silty embayment with marsh and substantial areas colonised by algae. East of Shelly Point mobile beaches of sand create Sanctuary spit, which experiences both erosion and accretion as it migrates to the south. East of the spit the coastline is strongly influenced by the open North Sea and the position of the outlet channel of the estuary. In the hinterland the RAF base is situated on a low raised beach and links surface. Leuchars is sited on slightly higher ground of the former glacial coastline.

From the entrance of the Eden northwards to Reres Wood the coastline is eroding. The high water mark is advancing landward. Defences protect the runway to the airfield however antitank blocks are exposed several metres from the coast edge (Erosion Unit 8) and the dunes at the coast edge display vertical sand cliffed faces son the dunes indicative of undercutting by the sea. The erosion of this area of coastline is associated with the accretion at the spit. The open undulation links of Earshall occur between Tentismuir to the north and Reres Wood to the south, with a low lying area stretching far inland and displaying well developed marsh. In the hinterland, there are relic dune ridges composed of blown sands with intervening marsh slacks, and behind that, there is a transition between the blown sands of the links and raised beach surfaces. To the north the dune zone widens at Kinshaldy where Marram and prograding dune species lead to a stable backshore area with accreting dunes nourished by blown sands supplied by and extensive foreshore zone

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SANDS**

EROSION UNITS

1
NO46542005
0.2 km
Stable
Marsh and reed beds stabilise the upper foreshore and protect the coast edge.

2
NO46762031
0.4 km
Eroding or stable
Human disturbance has resulted in a 4m high coast edge of tipped wastes. In the east the tipped wastes at the edge are protected by a vegetation cover. Reeds stabilise the upper foreshore. To the west, high waters undercut the tipped waste.

3
NO47032031
0.2 km
Definitely eroding
The coast edge is composed of sandy raised beach deposits and tipped wastes, both of which are susceptible to erosion. There is some human disturbance to combat erosion.

4
NO47252028
0.2 km
Stable
The low edge is protected by mud flats, with marsh and reed bed development.

5
NO47462000
0.4 km
Both accreting and eroding
Shelly Point is a dynamic sand peninsula that experiences both accretion and erosion. Accretion of blown sands has built up the level of the foreshore and marram grasses trap blown sands at the coast edge. To the east, the dunes are undercut and display bare dune edges with deflation hollows.

6
NO47792045
0.8 km
Stable
Gabion basket defences and dolerite boulders stabilise the coast edge.

7
NO48552055
0.6 km
Both accreting and eroding
Sanctuary Spit is dynamic experiencing both erosion and accretion, as it responds to the changing position of the Eden. There is erosion in the east which is balanced with accretion on the spit. Accretion of shelly sands is causing the spit to migrate to the southwest. To the east an old eroded soil horizon on the foreshore reflects the changing position of the spit. The 1941 antitank blocks on the foreshore are several metres from their original position at the coast edge which is undercut and protected with gabion baskets.

8
NO48882079
0.7 km
Definitely eroding
The coast edge of the airfield runway is protected with concrete slabs and rubble. To the northeast erosion is severe, the antitank blocks are up to 40metres from the undercut coast edge.

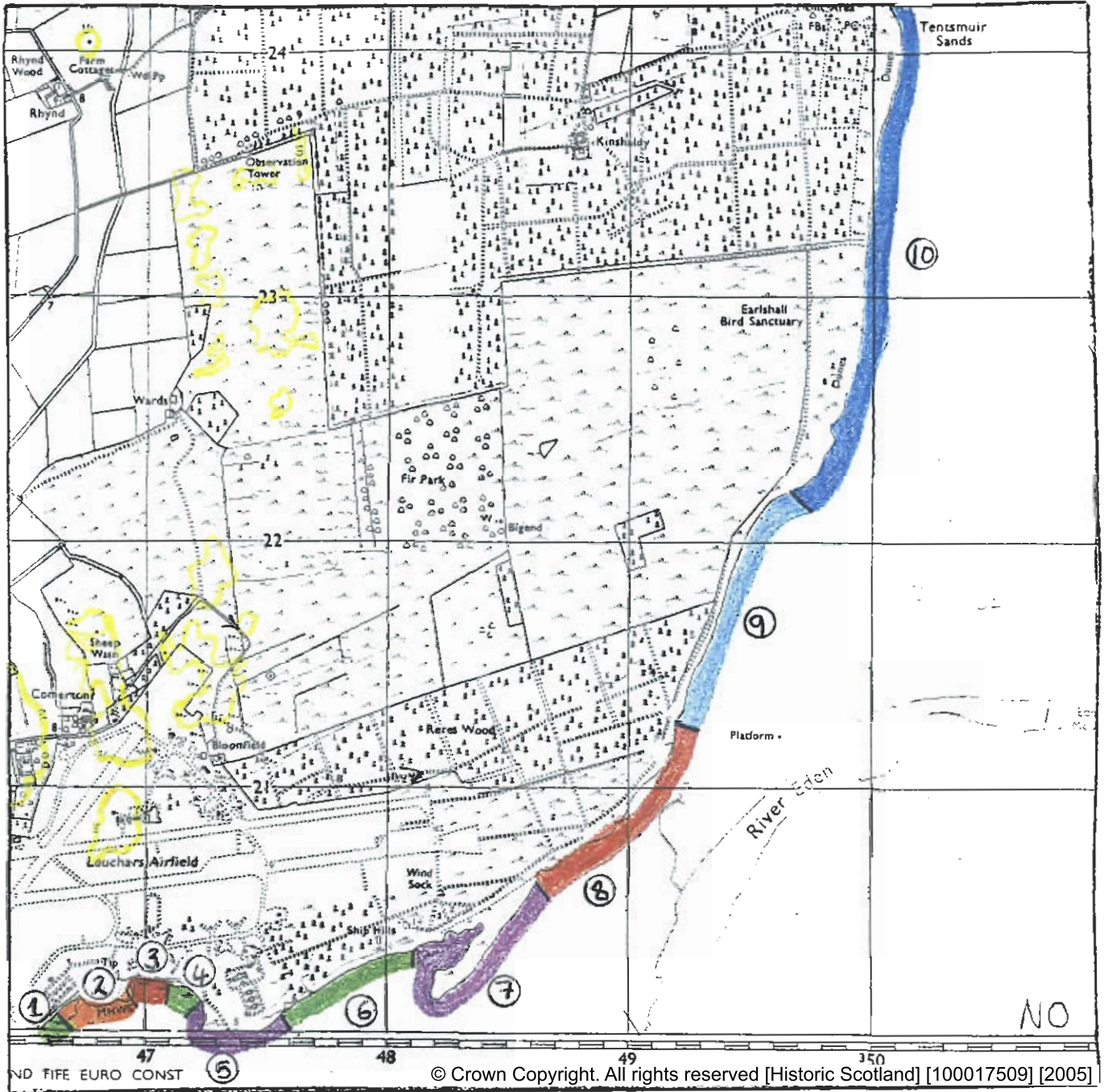
9
NO49812155
1.2 km
Accreting or stable
Antitank blocks cross the present coast edge and are 30-40 metres inland, suggesting that there has been the long term accretion of sand. Sand is accreting on the wide flat beach and wind blown sand is stabilised at the low dune edge by prograding marram grasses. In the mature dune areas there are old erosion areas face, however with the exception of rabbit infestation there is little present erosion. Earshall Muir has an extensive area stabilised

with reed beds and marsh.

10
NO49982333
2 km
Definitely accreting
The dunes are accreting and there is evidence of prograding vegetation. Mature dunes are situated 150 metres inland and are stabilised with tall marram grasses. The wide upper beach provides a large nourishment zone of dry sand for the dunes.

MAP CLASS: **EROSION**
 (Assessment date: 4 October 1996)
 NO 42/52. Scale 1:25,000

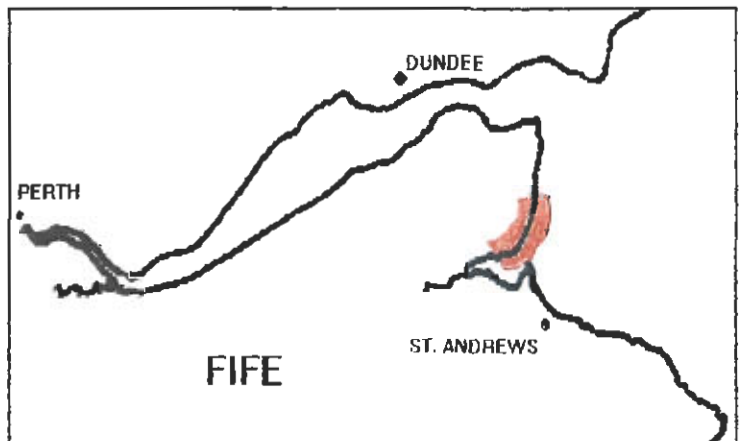
**SHELLY POINT, LEUCHARS TO
 TENTSMUIR SANDS**



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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 6 SHELLY POINT LEUCHARS
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GEOLOGY UNITS

1
NO46482015
0.3 km
Mainly alluvial/marine muds
Low edge (<5 metres)
Raised beach and marine deposits
A silty clay embayment has fringing sands on the upper foreshore. The mud flats at the coast edge are dominated by marsh and reed beds.

2
NO46852025
0.3 km
Mainly alluvial/marine muds
Human Disturbance
Alluvium with blown sand
In the west, the silty sands on the upper foreshore are stabilised with reed beds. There is human disturbance along the coast edge, with an artificial bank 3-5 metres high of tipped waste. To the east the reed beds are absent on the upper foreshore.

3
NO47112045
0.3 km
Mainly alluvial/marine muds
Low edge (<5 metres)
Blown sand
Silty sands as opposed to muds compose the foreshore. The low edge is stabilised by marram grasses and reed beds.

4
NO47462000
0.4 km
Mainly sand
Low edge (<5 metres)
Blown sand
Shelly Point is a natural shelly sand bank, with 3-4 metre high dunes at the coast edge.

5
NO47792041
0.8 km
Mainly sand
Manmade barrier
Blown sand
Gabion baskets and dolerite boulders

protect the coast edge. Wide sand flats compose the foreshore.

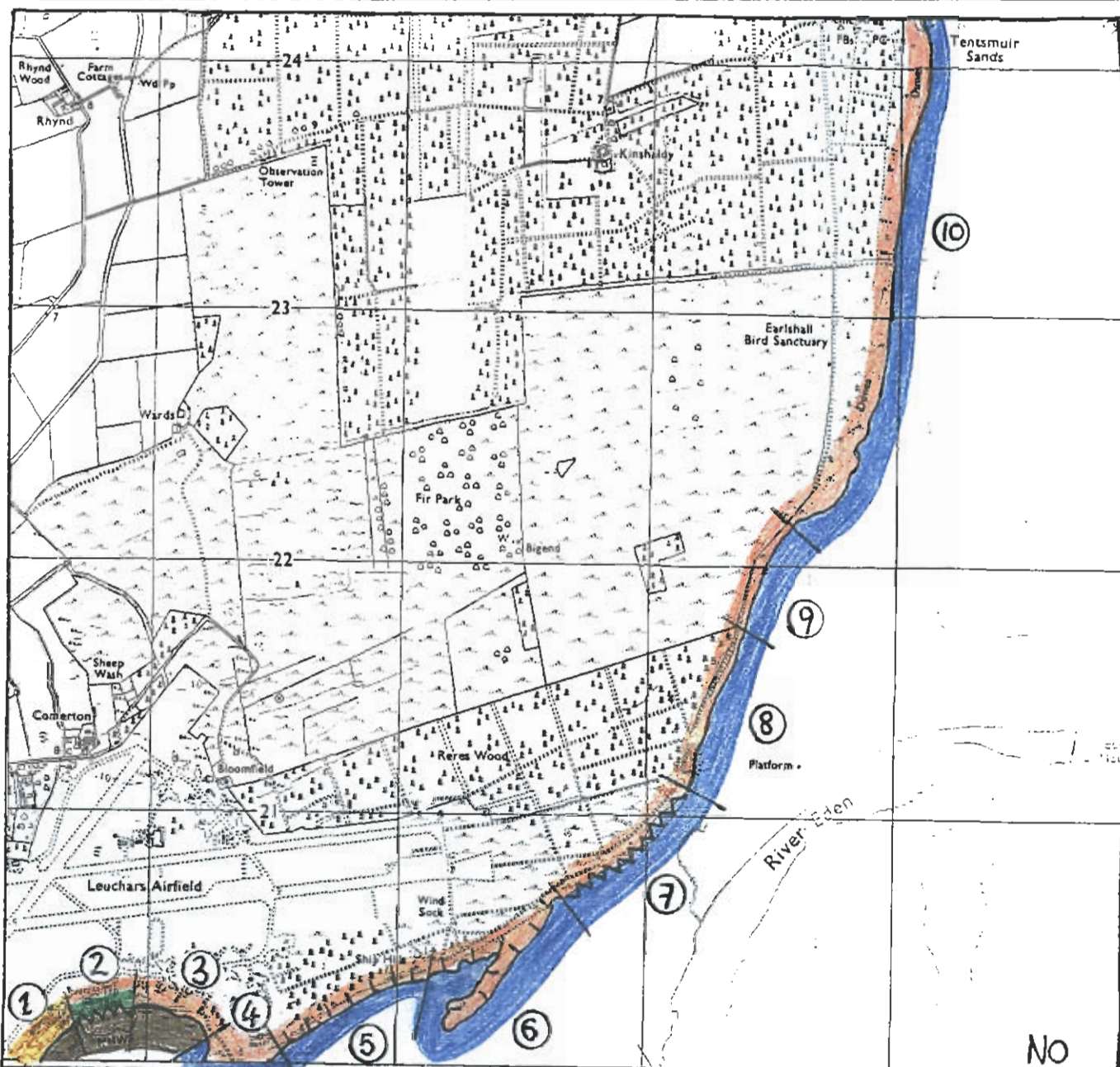
6
NO48552055
0.6 km
Mainly sand
Manmade barrier
Blown sand
A shelly sand spit on the foreshore encloses a tidal depression with salt marsh. Dune development has occurred on the landward side of the spit. The coast edge is manmade with gabion baskets.

7
NO48882085
0.7 km
Sand
Human disturbance
Blown sand
A wide sand beach forms the foreshore. Human disturbance protects the undercut dune edge with concrete slabs and rubble.

8
NO49252155
0.7 km
Sand
Low edge (<5 metres)
Blown sand
The foreshore has a wide shelly sand beach with a low gradient. At the low coast edge there are blown sand deposits.

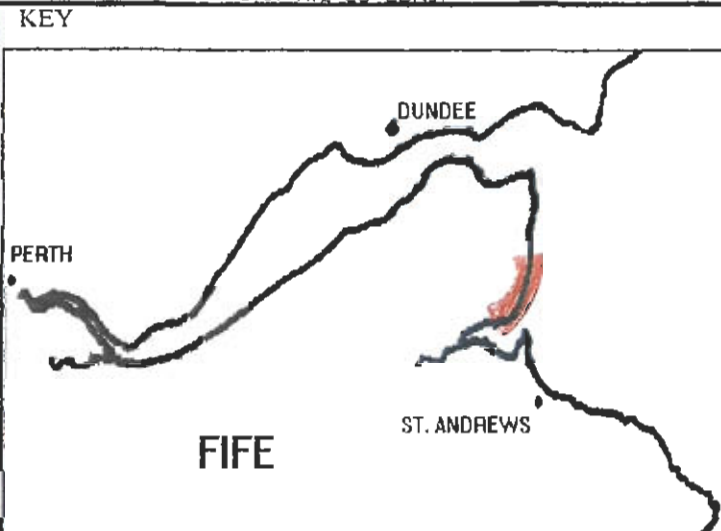
9
NO49452200
0.5 km
Mainly sand (marsh upper foreshore)
Low edge (<5 metres)
Blown sand
The upper foreshore has a wide tidal flat area with marsh and reeds which extends inland over a very low coast edge. Earlshall Muir consists of open undulating links between Tentsmuir and Reres wood, there are dune ridges with intervening slacks. A transition from links to raised beach occurs in the hinterland.

10
NO49982323
2 km
Sand
Low edge (<5 metres)
Blown sand
An extensive sandy beach with a low gradient creates the foreshore. At the coast edge there is a wide active dune zone, the high dunes are stabilised with marram grasses and advancing dune species. Older mature dunes are set 100 metres inland.



ND FIFE EURO CONST 47 48 49 350 No
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Hinterland Geology	Staeffler colour	
Enfl, boulder clay	light gray	
Enfl, boulder clay over visible rock	Carm D'acne violet	
Raised beach and marine deposits	golden brown	
Blown sand	peach	
Glacial sand and gravel	magenta	
Alluvium	grass green	
Coastal edge		
Low edge (< 5m.)	thin black line	
Cliff (> 5m.)	solid black line	
Man made barrier	black line with spines	
Shingle beach	small circles	
Human disturbance	black curats	
Coastal Geomorphology		
Mainly rock platform	vermillion	
Mainly sand	indigo	
Mainly alluvial/marine mud	sienna brown	
Marsh	true green	



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BUILT HERITAGE AND ARCHAEOLOGY UNITS

Sites behind the coast edge

NO42SE59
LEUCHARS AIRFIELD
AIRFIELD; BUILDINGS; RADAR
TOWERS; BOUNDARY FENCES; LANDING LIGHTS
20th Century
Good
Nil

NO49732279
Wartime shelter used as generator building
20th Century
Fair
Survey

Sites on the coast edge and foreshore

NO47841997 - area NO5021
Wooden stakes in foreshore arranged in grid formation
- probably glider traps
20th Century
Fair
Survey

NO49022087 - NO49202135
Pyramidal and square tank traps in front of approach to
Leuchars runway
20th Century
Fair
Nil

NO49452120
Large timber frame platform (8m. by 6m. by 2m.)
Tidal research platform
20th Century
Fair
Nil

NO49192127
Concrete pillbox
20th Century
Poor
Survey

NO49282148 - NO49402205
Line of square tank traps along dune system
20th Century
Fair
Nil

NO49772263

Foundations and one partially remaining wall of a brick
building
20th Century
Poor
Survey

NO49892286

Sheet metal dome pillbox and collapsed brick and concrete
building
20th Century
Poor
Survey

NO49862302

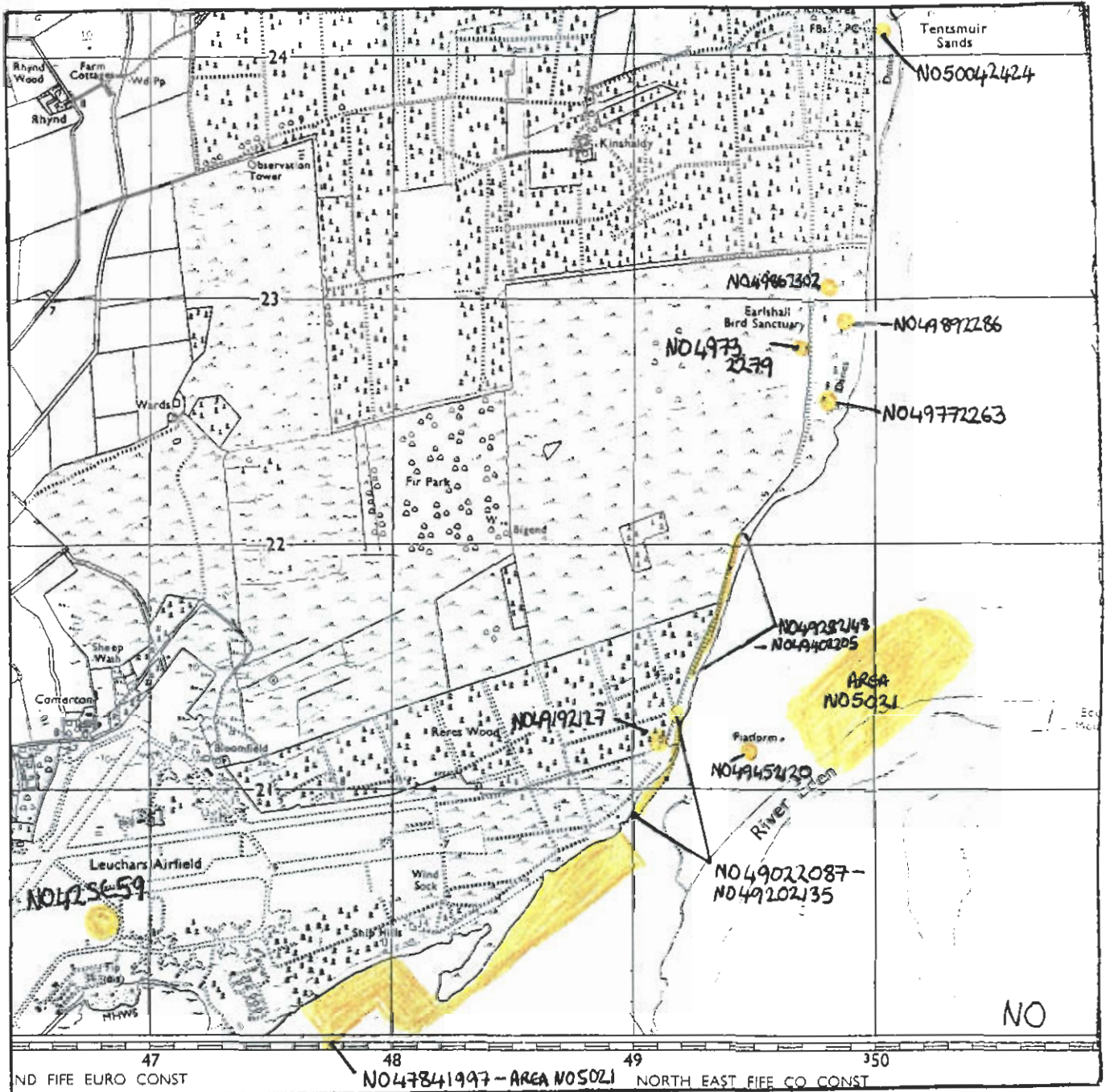
Concrete pillbox
20th Century
Fair
Nil

NO50042424

Line of square tank traps visible
20th Century
Fair
Nil

MAP CLASS: Built Heritage and Archaeology
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KEY

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Site location	Symbol	Standard colour	Significance
	solid roundel	orange	Protected Ancient Monument
NGR e.g.	cross	orange	Listed Historic Building
NO12345678	open roundel	orange	Monument formally proposed by Historic Scotland for designation
	solid roundel	yellow/white	Other known monument
NMRS e.g.	dashed outline	yellow/white	Designated landscape
NO28NW35	open roundel	yellow/white	Undesignated wreck
	area	green	Insufficient information, access/walk needed (no access, or not walked)
	area	blue	Probably archaeologically sterile

