

## APPENDIX 1: MAIN EXTERNAL SOURCES OF DATA

| <b>Ref No.</b> | <b>Title</b>   | <b>Author</b>  | <b>Year</b> | <b>Source</b>  | <b>Brief Description or Statement of Relevance</b>  | <b>Habitat info</b> | <b>Map tile</b>      |
|----------------|--|--|-------------|--|---|---------------------|----------------------|
| 1              | Assessment of the possible establishment of an Ecological Network in Galway City.                          | Kinderman, Gesche                                      | 2003        | MSc thesis, Ecosystem Conservation and Landscape Management, NUIG    | Covers habitats and many fauna species found in city. Maps their locations and possibilities for linking them.  | Yes                 | All                  |
| 2              | A Study of the Rusheen Bay, Barna Woods and Silver Strand Area (Galway), and Proposals for its Management. | Long, Maria  | 2001        | MSc thesis, Ecosystem Conservation and Landscape Management, NUIG    | Detailed habitat map of Rusheen Bay, Barna Woods and Silver Strand area (including Gentian Hill and Knocknagoneen). Also discussion of management issues. | Yes                 | 25<br>31             |
| 3              | Galway's Woodlands: Inventory, Social Context and Prospects for the Future.                                | van der Sleesen, A. (Sasha)                            | 2000        | PhD thesis, NUIG   | Detailed study of some woodland areas within City, along with discussion of how community use and view them.  | Yes                 | All                  |
| 4              | A vegetation study of Merlin Park woodland, Co. Galway in relation to management objectives                | Ryder, Elizabeth                                       | 2004        | BSc Thesis, Environmental Science (supervisor M. Sheehy Skeffington) |   | Yes                 | 14<br>15<br>22<br>23 |
| 5              | A vegetation study of Menlo woodland, Galway with a view to future management                              | Lawlor, Siobhan  | 2004        | BSc Thesis, Environmental Science (supervisor M. Sheehy Skeffington) |   | Yes                 | 1<br>5               |
| 6              | An assessment of the conservation value of a blanket bog landscape to the west of Galway City.             | Conaghan, John, Enviroscope Environmental Consultants, | 2000        | Heritage Council funded (from Julie Fossitt)                         | Probably very useful – extends inside City boundaries at north-west of City.  | Yes                 | 10<br>11<br>18<br>25 |

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|----------------|---|---|-------------|----------------------|---|---------------------|-----------------|
| 7              | The flora and fauna of Menlo, Galway.   | Allison, James                                    | 2000        | (from Julie Fossitt) | Will be very useful – there is lots of detailed info on flora, fauna and habitats of the Menlo area.  | Yes                 | 1<br>5?         |
| 8              | Galway City Outer Bypass - R336 Western Approach. Constraints Study Report.   | Ryan Hanley WSP Ltd, for Galway City Council      | 2000        | (from Julie Fossitt) | Brief ecology section. Note – this report is from June, but there is also one from March – it may have more detailed descriptions.                                |                     | 25              |
| 9              | Route Selection Report. Galway City Outer Bypass - R336 Western Approach Link.  | Ryan Hanley WSP Ltd, for Galway City Council      | 2001        | (from Julie Fossitt) |   |                     | 25              |
| 10             | N6 Galway City Outer Bypass. Route Selection Report   | Ryan Hanley WSP Ltd, for Galway City Council      | 2001        | (from Julie Fossitt) | Includes large, excellent quality aerial photographs.   |                     |                 |
| 11             | Sailin to Silverstrand Coastal Protection Scheme EIS.   | Kirk, McClure and Morton                          | 2003        | (from Julie Fossitt) | Will be very useful – detailed info. on habitats, flora and fauna of Lough Rusheen area. (They used Long 2001 and also Micheline Sheehy Skeffington re-surveyed.) | Yes                 | 25<br>31        |
| 12             | Galway Harbour Enterprise Park at Renmore, Galway. Further information required by Galway Corporation Planning Authority for the borough of Galway on planning application 68/95. | Patrick J Tobin and Co. Ltd. Consulting Engineers |             | (from Julie Fossitt) |   |                     | 21              |

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|----------------|---|---|--------------------------|--|---|---------------------|-----------------|
| 13             | EIS in respect of a mixed development at Briarhill, Ballybrit, Galway.                                      | Mulryan Developments Ltd. – Ergo Consulting. (with John Conaghan on Flora, and Rob Saunders on Fauna) | (probably 2000 or later) | Galway City Council planning office                  | Good descriptions, but habitats not very interesting.... Improved grassland, stone walls, farm buildings and yards, mound of limestone rubble and waste ground. | Yes                 | 14?<br>15?      |
| 14             | EIS for Quarry Extension at Coolagy, Ballindooley, Co. Galway   | Lackagh Quarries Ltd. – Patrick J. Tobin and Co. Ltd.   | 1999                     | Galway City Council planning office (file 553/99)    | Karst and karst grasslands.   | Yes                 | 6?              |
| 15             | EIS for proposed development at Ballindooley, Co. Galway.   | Keville and O’Sullivan Associates, Ltd.   | 2003                     | Galway City Council planning office (file 923/02)    | Good flora and fauna information. Probably worth getting – but double check location. Ballindooley might not be in City boundary                                |                     | ?               |
| 16             | “Conservation and Protection of Natural Heritage and Biodiversity in Galway City – Development Plan Review” | Submission on behalf of Galway City Development Board   | 2003                     | Julie Fossitt Nature and Wildlife Habitats sub-group | Details a number of important biodiversity areas in Galway City   | Yes                 | All             |
| 17             | Draft Management Plan for Galway Bay pcSAC  | NPWS  | ??                       | Maria Long   | Gives very broad descriptions of habitats in Galway Bay area  | Yes                 |                 |
| 18             | National Coastline Survey CD No. 6  | Marine Institute  | 2001                     | NATURA office  | Excellent photos (in infra-red) of coastline  |                     |                 |
| 19             | A Phytosociological and Paleoecological Study of the Wetlands of the Lower Lough Corrib Basin.              | Mooney, Enda  | 1990                     | PhD thesis, NUIG                                     | Detailed information on wetlands vegetation of lower Lough Corrib Basin.  | Yes                 |                 |

## APPENDIX 2: CLASSIFICATION SCHEME FOR IRISH HABITATS

(AFTER FOSSITT 2000)

| <b>NON-MARINE</b>                |  |  |
|----------------------------------|--|--|
| <b>F</b> Freshwater              | <b>FL</b> Lakes and ponds                      | <b>FL1</b> Dystrophic lakes<br><b>FL2</b> Acid oligotrophic lakes<br><b>FL3</b> Limestone/marl lakes<br><b>FL4</b> Mesotrophic lakes<br><b>FL5</b> Eutrophic lakes<br><b>FL6</b> Turloughs<br><b>FL7</b> Reservoirs<br><b>FL8</b> Other artificial lakes and ponds |
|                                  | <b>FW</b> Watercourses                         | <b>FW1</b> Eroding/upland rivers<br><b>FW2</b> Depositing/lowland rivers<br><b>FW3</b> Canals<br><b>FW4</b> Drainage ditches   |
|                                  | <b>FP</b> Springs                              | <b>FP1</b> Calcareous springs<br><b>FP2</b> Non-calcareous springs   |
|                                  | <b>FS</b> Swamps                               | <b>FS1</b> Reed and large sedge swamps<br><b>FS2</b> Tall-herb swamps  |
| <b>G</b> Grassland and marsh     | <b>GA</b> Improved grassland (highly modified) | <b>GA1</b> Improved agricultural grassland<br><b>GA2</b> Amenity grassland (improved)  |
|                                  | <b>GS</b> Semi-natural grassland               | <b>GS1</b> Dry calcareous and neutral grassland<br><b>GS2</b> Dry meadows and grassy verges<br><b>GS3</b> Dry-humid acid grassland<br><b>GS4</b> Wet grassland   |
|                                  | <b>GM</b> Freshwater marsh                     | <b>GM1</b> Marsh   |
| <b>H</b> Heath and dense bracken | <b>HH</b> Heath                                | <b>HH1</b> Dry siliceous heath<br><b>HH2</b> Dry calcareous heath<br><b>HH3</b> Wet heath<br><b>HH4</b> Montane heath  |



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| <b>NON-MARINE<br/>(CONTD.)</b>             |  |   |
|--|--|---|
|  | <p><b>WD</b> Highly modified/non-native woodland</p> <p><b>WS</b> Scrub/transitional woodland</p> <p><b>WL</b> Linear woodland/scrub</p> | <p><b>WD1</b> (Mixed) broadleaved<br/><b>WD2</b> woodland<br/><b>WD3</b> Mixed broadleaved/conifer<br/><b>WD4</b> woodland<br/><b>WD5</b> (Mixed) conifer woodland<br/>Conifer plantation<br/>Scattered trees and parkland</p> <p><b>WS1</b> Scrub<br/><b>WS2</b> Immature woodland<br/><b>WS3</b> Ornamental/non-native shrub<br/><b>WS4</b> Short rotation coppice<br/><b>WS5</b> Recently-felled woodland</p> <p><b>WL1</b> Hedgerows<br/><b>WL2</b> Treelines</p>     |
| <b>E</b> Exposed rock and disturbed ground | <p><b>ER</b> Exposed rock</p> <p><b>EU</b> Underground rock and caves</p> <p><b>ED</b> Disturbed ground</p>                              | <p><b>ER1</b> Exposed siliceous rock<br/><b>ER2</b> Exposed calcareous rock<br/><b>ER3</b> Siliceous scree and loose rock<br/><b>ER4</b> Calcareous scree and loose rock</p> <p><b>EU1</b> Non-marine caves<br/><b>EU2</b> Artificial underground habitats</p> <p><b>ED1</b> Exposed sand, gravel or till<br/><b>ED2</b> Spoil and bare ground<br/><b>ED3</b> Recolonising bare ground<br/><b>ED4</b> Active quarries and mines<br/><b>ED5</b> Refuse and other waste</p> |
| <b>B</b> Cultivated and built land         | <p><b>BC</b> Cultivated land</p> <p><b>BL</b> Built land</p>   | <p><b>BC1</b> Arable crops<br/><b>BC2</b> Horticultural land<br/><b>BC3</b> Tilled land<br/><b>BC4</b> Flower beds and borders</p> <p><b>BL1</b> Stone walls and other<br/><b>BL2</b> stonework<br/><b>BL3</b> Earth banks<br/>Buildings and artificial surfaces</p>  |

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|                                 |  |   |
|---------------------------------|--|---|
| <b>C Coastland</b>              | <b>CS Sea cliffs and islets</b>  | <b>CS1 Rocky sea cliffs</b><br><b>CS2 Sea stacks and islets</b><br><b>CS3 Sedimentary sea cliffs</b>  |
|                                 | <b>CW Brackish waters</b>  | <b>CW1 Lagoons and saline lakes</b><br><b>CW2 Tidal rivers</b>  |
|                                 | <b>CM Salt marshes</b>   | <b>CM1 Lower salt marsh</b><br><b>CM2 Upper salt marsh</b>  |
|                                 | <b>CB Shingle and gravel banks</b>   | <b>CB1 Shingle and gravel banks</b>   |
|                                 | <b>CD Sand dune systems</b>  | <b>CD1 Embryonic dunes</b><br><b>CD2 Marram dunes</b><br><b>CD3 Fixed dunes</b><br><b>CD4 Dune scrub and woodland</b><br><b>CD5 Dune slacks</b><br><b>CD6 Machair</b> |
| <b>CC Coastal constructions</b> | <b>CC1 Sea walls, piers and jetties</b><br><b>CC2 Fish cages and rafts</b> |   |



## APPENDIX 3: SCIENTIFIC NAMES OF PLANTS AND ANIMALS CITED IN THE TEXT

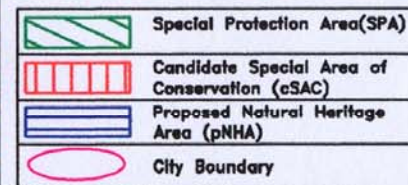
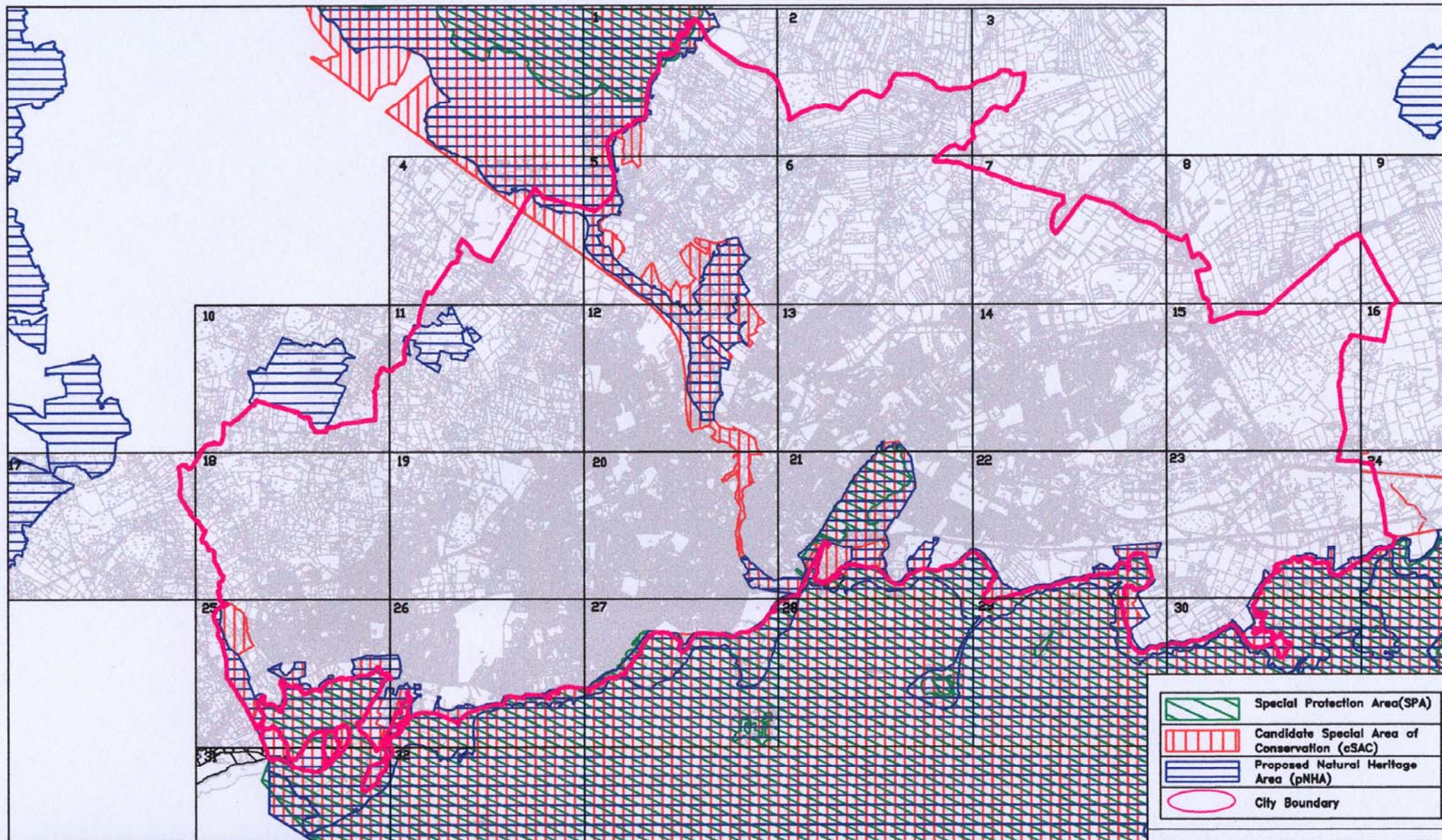
| Common name             | Scientific name                    |
|-------------------------|------------------------------------|
| <b>FAUNA</b>            |                                    |
| Common Seal             | <i>Phoca vitulina</i>              |
| Badger                  | <i>Meles meles</i>                 |
| Otter                   | <i>Lutra lutra</i>                 |
| Lesser horseshoe bat    | <i>Rhinolophus hipposideros</i>    |
| Zebra mussel            | <i>Dreissena polymorpha</i>        |
| Sea lamprey             | <i>Petromyzon marinus</i>          |
| Freshwater pearl mussel | <i>Margaritifera margaritifera</i> |
| White Clawed Crayfish   | <i>Austropotamobius pallipes</i>   |
| Common blue butterfly   | <i>Polyommatus icarus</i>          |
| <b>FLORA</b>            |                                    |
| Rhododendron            | <i>Rhododendron ponticum</i>       |
| Hazel                   | <i>Corylus avellana</i>            |
| Beech                   | <i>Fagus sylvatica</i>             |
| Oak                     | <i>Quercus</i> sp.                 |
| Japanese knotweed       | <i>Reynoutria japonica</i>         |
| Laurel                  | <i>Prunus laurocerasus</i>         |
| Horse-chestnut          | <i>Aesculus hippocastanum</i>      |
| Indian balsam           | <i>Impatiens glandulifera</i>      |
| Lime                    | <i>Tilia</i> sp.                   |
| Cross-leaved heath      | <i>Erica tetralix</i>              |
| Sycamore                | <i>Acer pseudoplatanus</i>         |
| Ash                     | <i>Fraxinus excelsior</i>          |
| Flag iris               | <i>Iris pseudacorus</i>            |
| Willow                  | <i>Salix</i> spp.                  |
| Alder                   | <i>Alnus glutinosa</i>             |
| Gorse                   | <i>Ulex europaeus</i>              |
| Hawthorn                | <i>Crataegus monogyna</i>          |
| Common reed             | <i>Phragmites australis</i>        |
| Bracken                 | <i>Pteridium aquilinum</i>         |

## APPENDIX 4: CONSERVATION DESIGNATIONS IN GALWAY CITY AREA

| <b>Code</b> | <b>Site name</b>                       | <b>Summary description of entire site</b>   | <b>Site within Galway City</b>  | <b>'Heritage sites'</b>  |
|-------------|--|---|---|--|
| 297         | Lough Corrib cSAC<br>(also pNHA)       | Lough Corrib and River Corrib and islands, including fringing wetlands and terrestrial habitats of ecological value, Oweriff River to Lough Agrafield and Addergoole Bog (raised bog). Selected for the conservation of 13 Annex I habitats, of which six are priority types, and for seven Annex II species (otter, lesser horseshoe bat, salmon, sea lamprey, slender naiad, freshwater pearl mussel and white-clawed crayfish). Contains other species and habitats of national and local importance | River Corrib and fringing wetland habitats down to Wolfe Tone Bridge, including Coolagh wetlands, Jordan's Island and the south-west end of Lough Corrib<br><br>Note that the Corrib (including Lough Corrib) is also a Designated Salmonid Water | River Corrib (16)<br>Coolagh wetlands (14)   |
| 4042        | Lough Corrib SPA                       | Lough Corrib, including open water to the high water mark and most of the lake islands (area=17,728ha). Selected for the conservation of 11 Annex I bird species; important for many other bird species   | A small part of the south-east of Lough Corrib SPA - to high water mark   |  |
| 268         | Galway Bay Complex cSAC<br>(also pNHA) | Marine, intertidal and coastal areas from Silver Strand around the inner bay to Ballyvaughan in Co. Clare, and including some nearby woodland and wetland areas. Selected for the conservation of 12  | Galway Bay, River Corrib up to Wolfe Tone Bridge, Barna Woods, Lough Rusheen, Silver Strand, Knocknagoneen, Gention Hill, seafront along Salthill, Lough  | Lough Rusheen,<br>Silver Strand and<br>Gention Hill (1)<br>Lough Atalia (2)<br>Roscam Point (3)<br>Hare and Rabbit |

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|      |                      |  |   |  |
|------|----------------------|--|---|--|
|      |                      | <p><b>Annex I habitats, of which three are priority types, and for two Annex II species (otter and common seal). Contains other species and habitats of national and local importance</b></p>                        | <p><b>Atalia, Roscam Point, Hare and Rabbit Island, and Mutton Island</b></p> <p>Lough Rusheen is also a Wildfowl Sanctuary</p> | <p><b>Island (4)<br/>Mutton Island (5)<br/>Barna Woods (6)</b></p> |
| 4031 | Inner Galway Bay SPA | <p><b>Marine and intertidal areas from Silver Strand around the inner bay to Ballyvaughan (area = 11,905ha). Selected for the conservation of 10 Annex I bird species; important for many other bird species</b></p> | <p><b>Galway Bay, Lough Atalia and Lough Rusheen - to high water mark</b></p>   | <p><b>Lough Rusheen (part of 1)<br/>Lough Atalia (2)</b></p>       |



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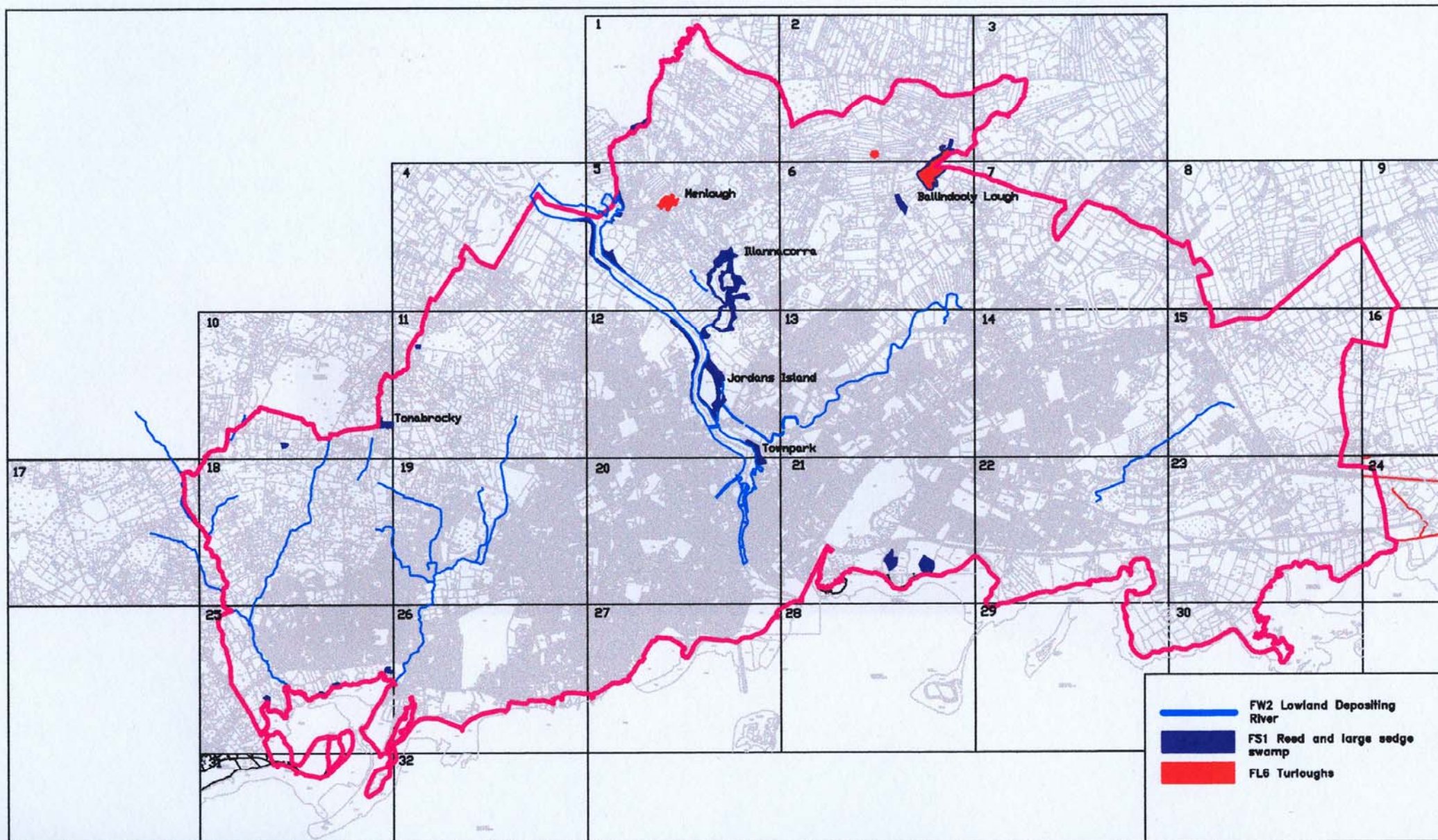
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Figure 1: Study area showing designated areas & tile numbers

Drawn by: FB  
Checked: RN  
Sheet no: 1 of 1

Project no: 1143  
Scale: 1:55000  
Date: 14.01.2005



— FW2 Lowland Depositing River  
■ FS1 Reed and large sedge swamp  
■ FL6 Turloughs



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|                                    |                  |
|------------------------------------|------------------|
| Figure 2: Main freshwater habitats |                  |
| Drawn by: ED                       | Project no: 1143 |
| Checked: RN                        | Scale: 1:55000   |
| Sheet no: 1 of 1                   | Date: 14.01.2005 |

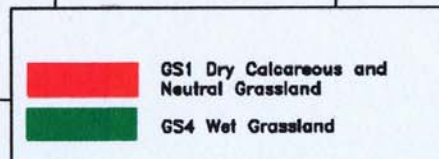
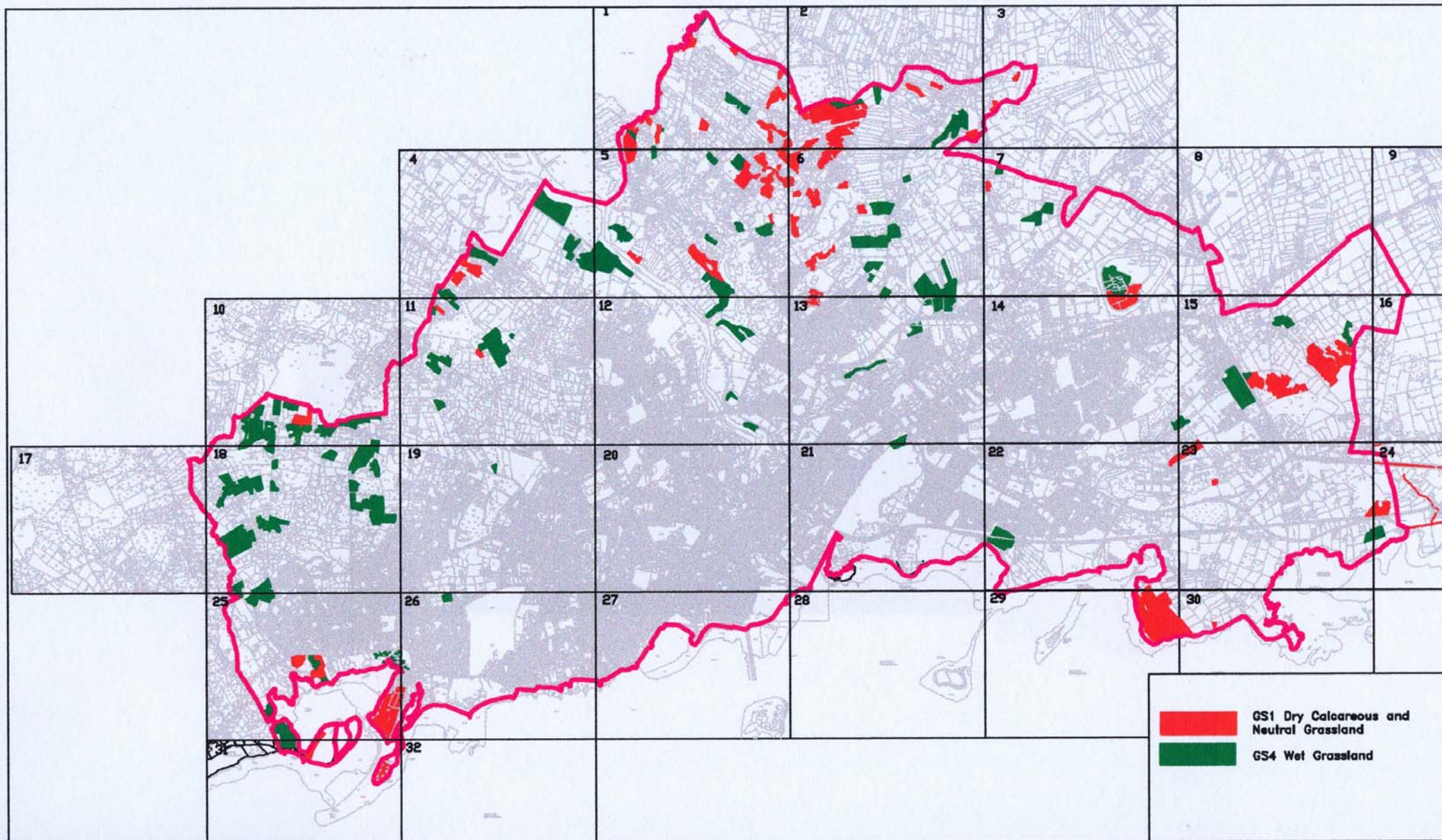


Figure 3: Semi-natural grasslands

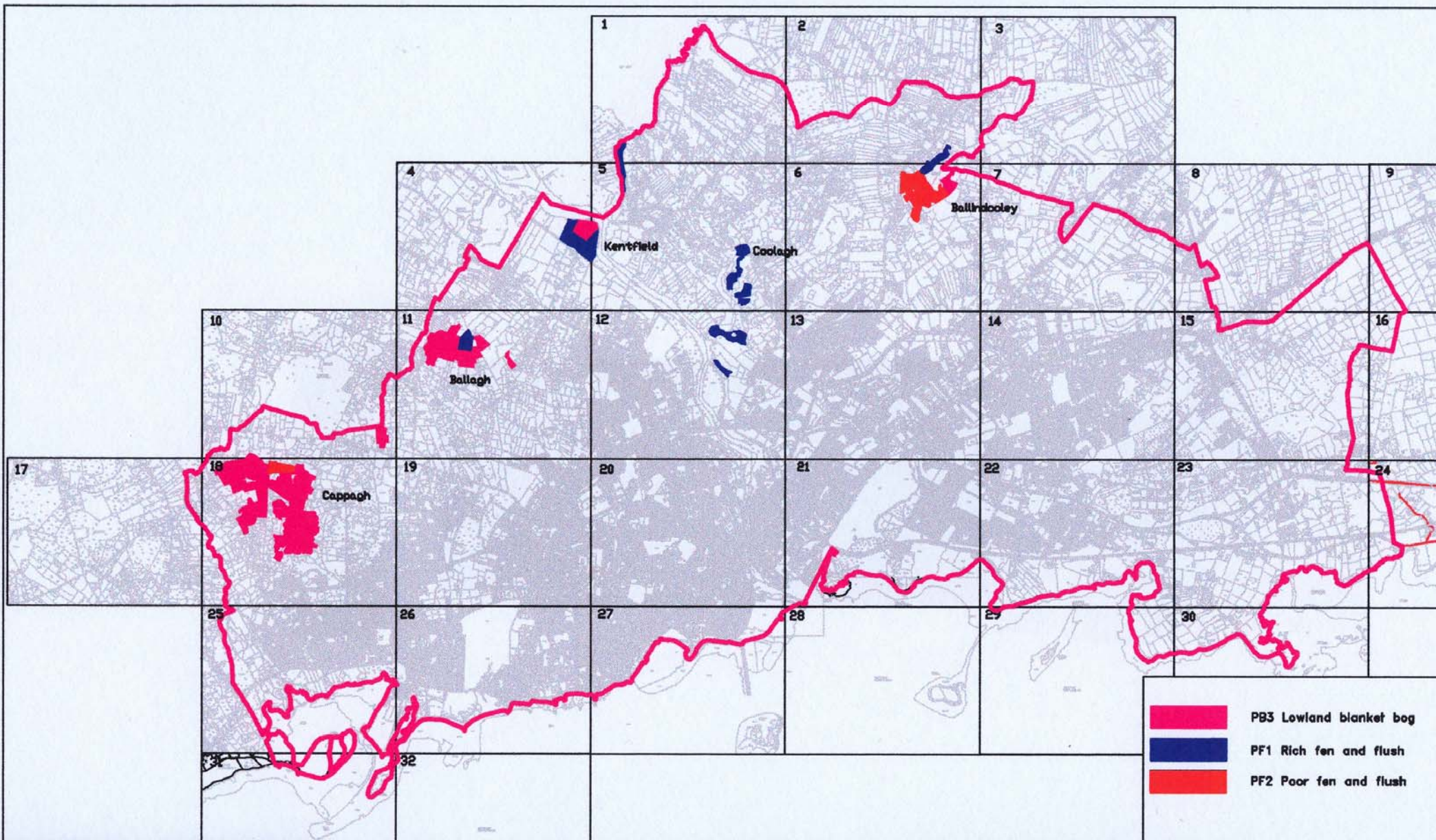
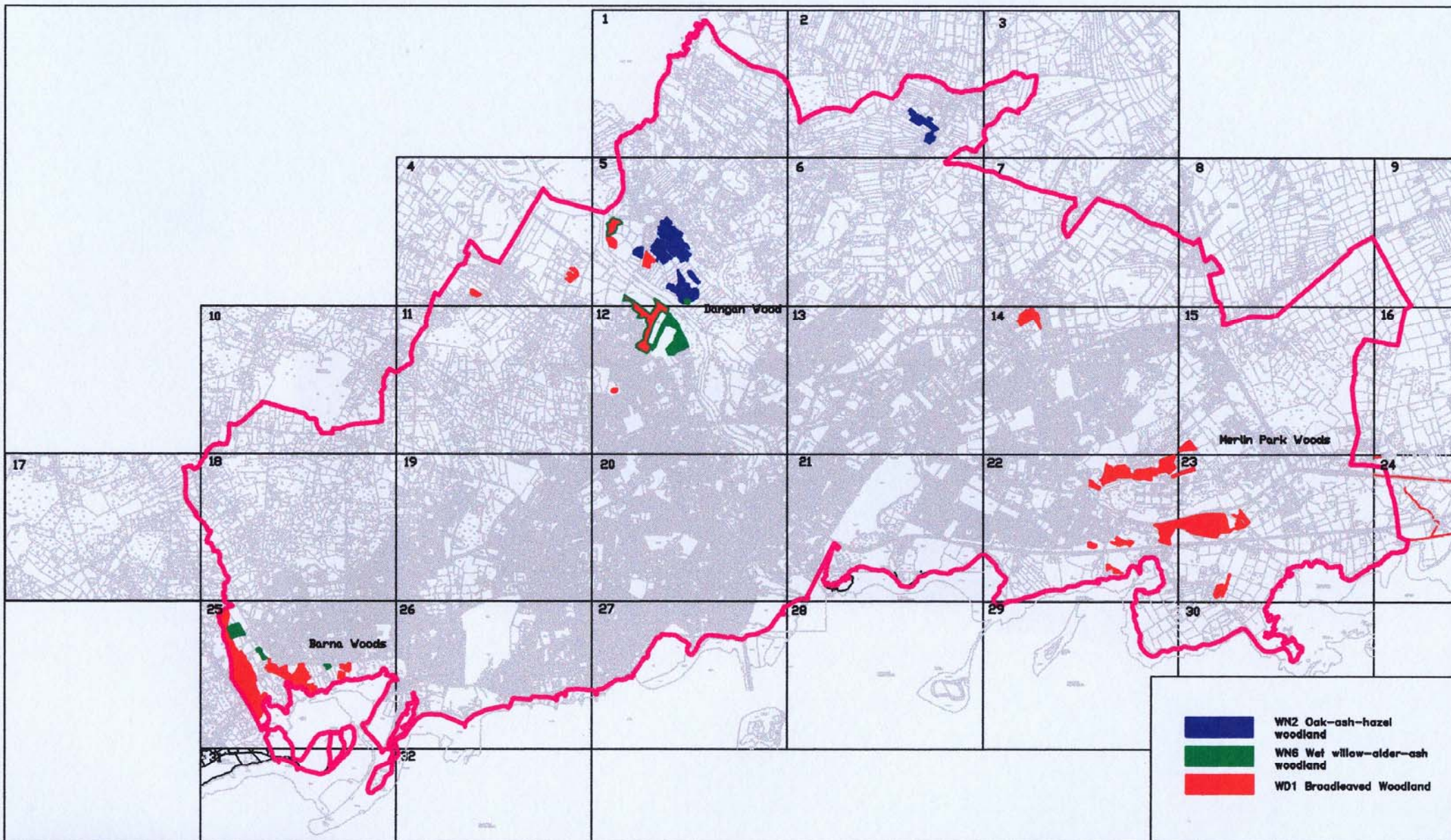


Figure 4: Peatland habitats

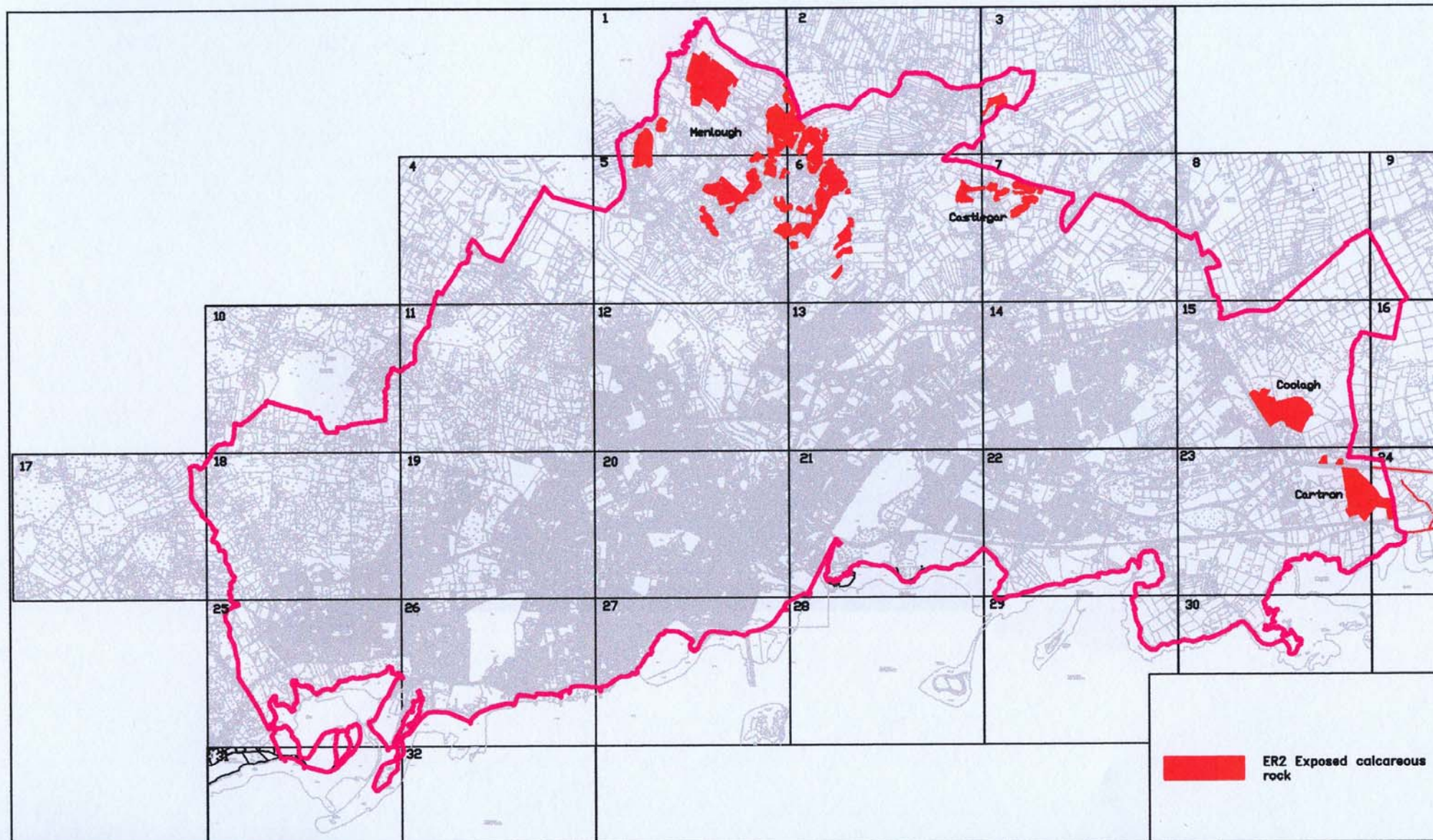


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Figure 5: Semi-natural woodland habitats

|                  |                  |
|------------------|------------------|
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| Checked: RN      | Scale: 1:55000   |
| Sheet no: 1 of 1 | Date: 14.01.2005 |



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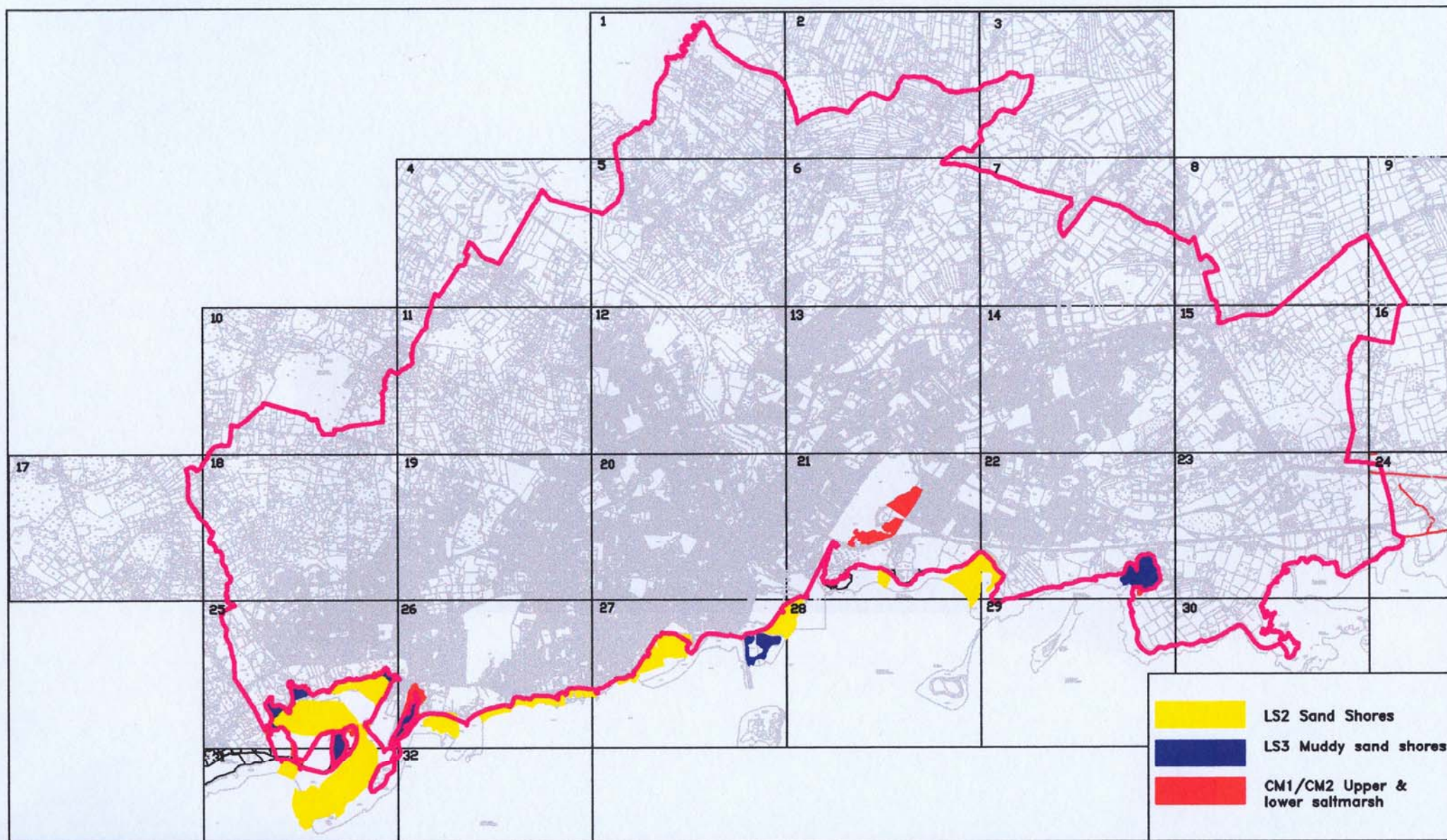
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Figure 6: Exposed Calcareous rock distribution

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Checked: RN  
Sheet no: 1 of 1

Project no: 1143  
Scale: 1:55000  
Date: 14.01.2005



- LS2 Sand Shores
- LS3 Muddy sand shores
- CM1/CM2 Upper & lower saltmarsh

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Figure 7: Soft coastal habitats

Drawn by: ED

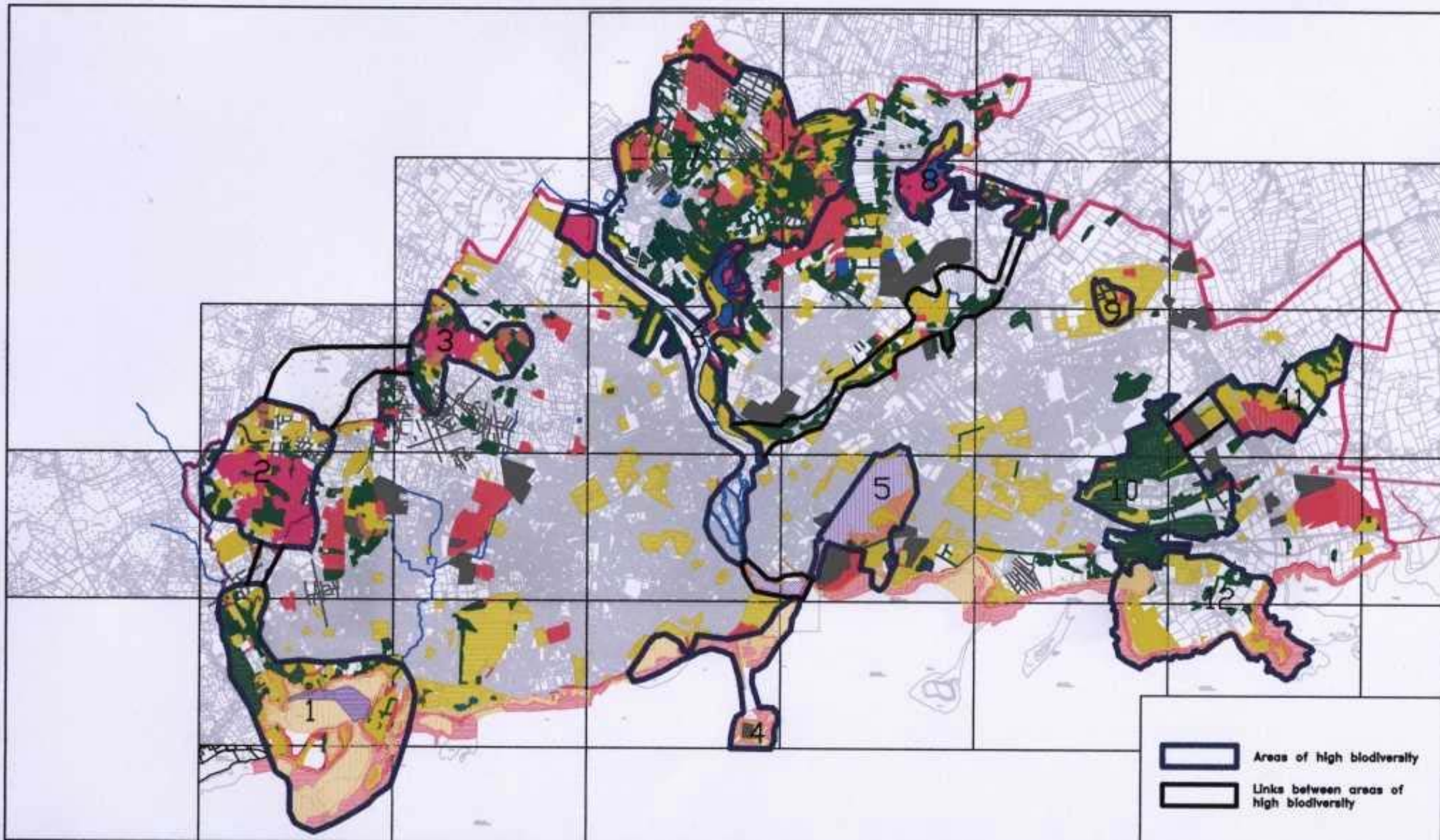
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Figure 8: Areas of high biodiversity value and links between them

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