2. WETLAND MAP FOR NORTH WEST EUROPE
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Introduction
As part of the Planarch 2, Action 2A, a digital wetlands map for NWE was developed as one of the common outputs of the project. The map defines the different types of wetlands in the partner regions. The Planarch 2 partners in Essex, Kent, the Netherlands and Flanders have significant wetland areas and it has been recognised, both within the partnership and more widely, that these need approaches tailored to the specific characteristics of these low lying areas. Wetlands constitute significant areas in each of the different partner regions. In Flanders they constitute about 14% of the total area and in the Netherlands over half of the country may be considered as wetlands.

The discussions between the Planarch partners established that the broad definition of wetlands was similar and could in general terms be separated into three main groupings
- Active wetlands (eg coastal marshes)
- Former wetland (reclaimed or drained marshes)
- River related wetlands (eg river floodplains)

It became clear, however, that how such areas were mapped in each of the partner regions differed, with the available data that could be used to define these areas coming from non-archaeological sources, for example nature conservation bodies, planning maps and soil mapping. This made comparisons between the partner regions difficult and hampered the goal of bringing the different criteria into one coherent classification. Following evaluation of the different wetland classifications, it was agreed amongst the partners to divide the wetlands into 3 classes:
- areas below 5m (reclaimed and drained wetland)
- active wetlands
- river-related wetlands.

This classification contains sufficient detail to allow the specifics of the different types of wetland to be taken into account, and allows a synthetic view of the wetlands in the Planarch 2 region to be understood.

Development of the map
Certain technical problems were encountered primarily related to the use of software (Arcview 3.2) and the fact that the project encompassed several countries. As stated above, problems of content resulted mainly from the different ways in which wetlands were classified in the different regions (below 5m, indicative tidal, existing wetlands, active wetlands, polders, foreshore, coast, etc). The solution of dividing the wetlands into 3 main types provides apparent uniformity, but masks differences related to the different sources used to elaborate regional or country specific maps. For example in Flanders, the soil map and the atlas of landscapes were used. As well as issues related to content, Planarch partners experienced various technical issues. Essex, Kent, Rhineland, Wallonia and Flanders have digital information in shapefile format, but this was not the case for Nord/Pas-de-Calais, where a printed soil map was scanned, geo-referenced and transformed into a shapefile. The geo-referencing was difficult and time consuming. As a result the information from Nord/Pas-de-Calais is less detailed. This was also the case in the Netherlands, where there was no digital data for the areas below 5m. Here, data was only available for the 2m and 10m levels. It was decided, following testing that the difference between the 2m and 5m level was relatively small and so the 2m level was put onto the map rather than the geo-referenced but less precise 5m level. There was no shapefile available for active wetlands in the Netherlands either, so it was added by staff at VIOE who scanned the areas seaward of the dikes from soil maps and these were defined as ‘active wetlands’.

The different shapefiles were difficult to combine on one map. For each partner a different projection had to be specified to allow the integration of the cartographic data into one document.
This conversion of the different cartographic data to one projection was possible through Arcview, with the exception of the files from the Netherlands. The Dutch co-ordinate system is not at present integrated into the Arcview Projection Utility Manager (the extension to Arcview) and this had to be achieved by using ArcGis 8.3.

One of the problems that could not be resolved, was the difference in detail relating to certain information layers. For example, the river network in Flanders and Wallonia could be mapped with detailed information but for the Netherlands, only the most important branches of the river network were available.

**Data per partner**
Each partner provided data, an overview of which is presented here along with the classes into which the data were converted. The data was not necessarily readily available from archaeological sources, so information from elsewhere was utilised.

Kent:
- 2002 fluvial → river-related wetlands
- Foreshore → active wetlands
- 2002 tidal → wetlands below 5m

Essex:
- River-floodplains → river-related wetlands
- Existing wetlands → active wetlands
- Below 5m → wetlands below 5m

Flanders:
- Alluvial areas → river-related wetlands
- The Zwin natural reserve → active wetlands
- Polders → wetlands below 5m

The Netherlands:
- River or stream valleys → river-related wetlands
- Areas beyond dikes → active wetlands
- Below 2m (+ rectification) → wetlands below 5m

Wallonia:
- Alluvial areas → river-related wetlands

Rhineland:
- River-related wetlands → river-related wetlands

Nord/Pas-de-Calais:
- Zones along rivers → river-related wetlands
- Polders → wetlands below 5m

**Final results**
The project has resulted in a series of maps including one general map with data from all the partners and separates detailed local maps for each Action 2a partner on a larger scale: Kent, Essex, Flanders, The Netherlands and Nord/Pas de Calais. The detailed maps have been included in this report (Figs 2.1 to 2.5)
The creation of the wetlands maps, with classes of wetlands that have been applied across the partner regions, has enabled us to calculate the percentage of the regions which can be defined as wetlands:

- Netherlands: 58%
- Kent: 19%
- Essex: 17%
- Flanders: 14.5%
- Nord/Pas-de-Calais: 9.5%
- Wallonia: 4%
- Rhineland: 3%

**Conclusions**

The work of developing the Planarch North West European wetlands map has been important in recognising a number of issues about working on a trans-national project relating to heritage management and spatial planning. At the level of organisation represented by the Planarch partnership (state heritage bodies, local authorities etc) it has proven difficult to find common definitions and technical specifications for digital data relating to wetlands. This is significant as it is clear from the map finally produced that wetlands constitute a significant amount of the total Planarch 2 area. These are areas of high heritage potential and require detailed management. If this is to be achieved at a European scale where direct comparisons can be made, shared maps of this nature will play an increasingly important role.
Fig 2.1 Kent wetlands
Fig 2.2 Essex wetlands
Fig 2.3 Flemish wetlands
Fig 2.4 Wetlands in the Netherlands
Fig 2.5 Wetlands in Nord/Pas de Calais
Fig 2.6 Wetlands of the Planarch 2 partners