Historical hydrographic vector features, Balta Brailei - Wallachia, 1855-1859, Nov. 2022

This metadata refers to the vector dataset digitised from the historical military topographical map series: "Wallachia – Second military survey of the Habsburg Empire" covering a period from 1855-1859. The focus has been on the Danube river basin area where this metadata covers the second of three pilot areas.

This pilot-2 area (Wallachia) covers approximately 26,000 km2 distributed in 15 scanned historical map tiles in scale 1:57,600 provided by Arcanum Maps services (https://maps.arcanum. com/en/). Hydrographic features was identified in the historical maps supported by the legend information that can be accessed here: https://www.arcanum.com/media/uploads/mapire /legend/secondsurvey1.pdf. The feature classes and attributes specified were used as basis in the digitisation process. The characteristics of the pilot-2 is low land area. The Copernicus Land product Riparian Zones (RZ) layer for the reference year 2018 was used as a mask when digitising, representing 9,245km2 of the total area.

The objective with this dataset is to support the process of restoring Europe's free flowing rivers as part of the EU's biodiversity strategy for 2030 (https://environment.ec.europa.eu/strategy /biodiversity-strategy-2030_en). The strategy aims to put Europe's biodiversity on a path to recovery by 2030, and contains specific actions and commitments. Among them, the restoration of 25,000 km of rivers through removals of dams, channels, barriers, etc. is highlighted. The dataset clearly visualise the hydrographic features complemented in the military maps in the past. Visualised with contemporary data it provides an overview of the changes made. The high complexity of the branched rivers is very interesting since they correspond to rivers in its natural state.

This pilot may help to better understand the possibilities of developing quantitative measurements that allow for better "identification" of areas suitable for restoration.

Simple

Date (Creation)	2022-03-01
Date (Publication)	2022-11-30
Edition	01.00
Citation identifier	eea_v_3035_10_k_historic-hydro-p2_p_1855-1859_v01_r00

Point of contact					
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Maintenance and update frequency	Not planned
GEMET - INSPIRE themes, version 1.0	• Hydrography
Keywords	
Keywords	
GEMET	• hydrography • natural areas, landscape, ecosystems • river • restoration of water • water body • environment
Continents, countries, sea regions of the world.	• Romania • Austria

Spatial scope	• European
EEA topics	• Water
Access constraints	Other restrictions
Other constraints	no limitations to public access
Use constraints	Other restrictions
Other constraints	EEA standard re-use policy: unless otherwise indicated, re-use of content on the EEA website for commercial or non-commercial purposes is permitted free of charge, provided that the source is acknowledged (http://www.eea.europa.eu/legal/copyright). Copyright holder: European Environment Agency (EEA).
Aggregate Datasetindentifier	041a8c96-62e7-4844-9b49-3f81bc3ac375
Association Type	Cross reference
Spatial representation type	Vector
Denominator	10000
Language of dataset	English
Topic category	• Environment • Inland waters

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Begin date	1819-01-01
End date	1869-12-31
Additional Information	Some of the key-findings in the process digitising historical topographical maps are hugh reduction of water surface areas and river length when comparing the digitised areas with contemporary data. In this pilot-2 vast wetland areas of Balta Brailei - Wallachia has been reduced with more than 95%.
Coordinate reference system identifier	EPSG:3035
Distribution format	• GDB ( ) • Geopackage ( )

OnLine resource	**Protocol**	**Linkage**	**Name**
	EEA:FOLDERPATH	https://sdi.eea.europa.eu/webdav/datastore/public/eea_v_3035_10_k_historic-hydro-p2_p_1855-1859_v01_r00/	GPKG and GDB format
	WWW:URL	https://sdi.eea.europa.eu/data/4e9a3bd2-836e-49e2-87ad-80ac9756c4ee	Direct download
	OGC:WCS	https://portal.discomap.eea.europa.eu/arcgis/apps/webappviewer/index.html?id=a24efd2ad4694e1aa7fba6f10e30e8f9	WCS Web Coverage Service
	WWW:DOWNLOAD-1.0-http--download	https://sdi.eea.europa.eu/catalogue/srv/api/records/4e9a3bd2-836e-49e2-87ad-80ac9756c4ee/attachments/Digitisation_of_historical_rivers_EXECUTIVE_SUMMARY_EEA.pdf?approved=true	Digitisation of historical maps - executive summary all pilots
	WWW:DOWNLOAD-1.0-http--download	https://sdi.eea.europa.eu/catalogue/srv/api/records/4e9a3bd2-836e-49e2-87ad-80ac9756c4ee/attachments/Digitalisation-of-historical-rivers_Pilot2.pdf?approved=true	Digitisation of historical maps - pilot 2

Hierarchy level	Dataset

Conformance result

Title	Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services
Date (Publication)	2010-12-08
Explanation	See the referenced specification

| Statement | The maps available by the Arcanum WMTS server were used as basis for digitisation of the hydrographic features. The digitisation scale was set to 1:5 000 to 1:20 000. The projected WGS 1984 Web Mercator (auxiliary sphere) coordinate system was established, the same as the maps available through the Arcanum WMTS server. The Riparian zones layer was used as a mask when digitising (https://land.copernicus.eu/local/riparian-zones/riparian-zones-2018)

Eight feature classes were defined: four polygon feature classes, two line feature classes and two point feature classes.

Polygon feature description:

River_A: Streams and riverbanks or water edges.

Island_A: Land area surrounded by water. It can be a lake or river island.

Waterbody_A: Gathers different inland water bodies:

- Natural lake: lakes, ponds, swamps, lagoons.

- Artificial: reservoir (dam).

- Oxbow lake: lake – former part of river course – created by erosion.

- Watermill pond: water body used as a reservoir for a water-powered mill.

Wetland_A: Peatbogs, cane growing areas, soft lands, march lands…

Line feature classes

River_L: A naturally flowing watercourse. Represented by centre line of all streams and rivers.

DryDitch_L: Ditches where water can flow but are usually dry.

Point feature classes:

Bridges_p: Different type of bridges that can be observed over the maps.

Watermill_p: Watermill points, associated with watermill ponds.

Basic specification:

A geodatabase was created containing all the features defined. Domains were created when needed, in order to facilitate the digitisation process and avoid typo errors, e.g., different waterbody types (natural lake, artificial, oxbow lake and watermill pond).

- The digitisation scale was set on 1:5,000 - 1:20,000 in order to reach the MMU established.

- The projected WGS 1984 Web Mercator (auxiliary sphere) coordinate system was established, the same as the maps available through the Arcanum WMTS server.

River polygons can contain gaps:

River polygons could contain gaps, and these gaps corresponded to islands. In the case of branched rivers, all the connected branched rivers wider than 20m (established as a MMU) were considered

River unique centre lines

Each single river wider than 20m, was represented as polygon and also as line feature class. This line feature class represented the river centre line, and was symbolized with a line with an arrow indicating the direction of the flow. In the case of branched rivers, it was also defined a unique centre line, and this line could not overlapped with the islands.

Stream lines connected with the main river line

The stream line was connected to the centre line of the main stream following the shortest way, the flow direction, and without overlapping the islands. |

Branched rivers representation

All the connected branched streams or rivers wider than 20m were considered and drawn as polygons. Those narrower than 20m, were also considered, and were drawn as lines. These lines were not connected with the centre line of the main stream since they correspond to the same river and did not contribute with an external water flow.

River centre lines through lakes

In cases where a stream flows to a lake, a centre line was also drawn in order to maintain a continuity.

Dry ditches representation

Dry ditches were only represented as line feature class. Ditches of different sizes (width) were observed, but they were only represented as lines because they did not contain water.

Complexity of maps

The complexity of different map sheets covering Pilot 2 was not high. Besides, the complexity among different map sheets was uniform, since the entire extent of the AOI is located over a flat area with big hydrographic features (waterbodies, wetlands, etc.).

Quality of maps

It was observed that the quality of the different map sheets was good. Slight differences were observed between consecutive map sheets regarding the colour or symbology, but no differences were observed inside a single map sheet.

Accuracy of the maps

In general terms the accuracy of the maps in the Second Survey is good in most parts of the Empire. The maximum error is cca. 200 meters (Timár, Gábor & Biszak, Sándor & Székely, Balázs & Molnár, Gábor. (2011). Digitised Maps of the Habsburg Military Surveys – Overview of the Project of ARCANUM Ltd. (Hungary). DOI: 10.1007/978-3-642-12733-5_14). Lack of continuity between consecutive maps can occur.

High level of detail of the historical maps

Due to the high level of details in the historical maps, it was possible to identify place and location names of many features (e.g., rivers, lakes, streams). The names have been included in the geodatabase. Besides, in cases were the name was not clear enough, available basemaps have also been searched in order to get or verify names.
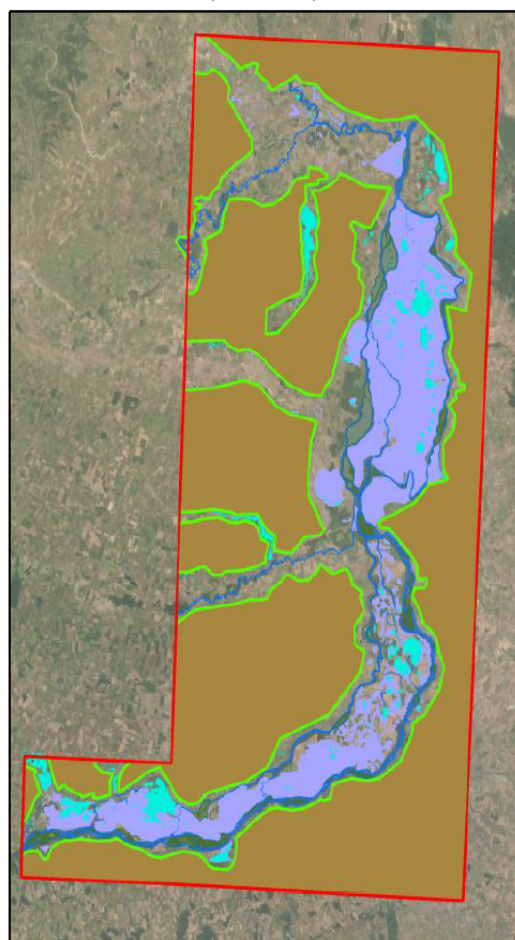
Further documentation of the definition of the feature classification and the digitisation process can be accessed under 'Links'
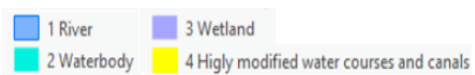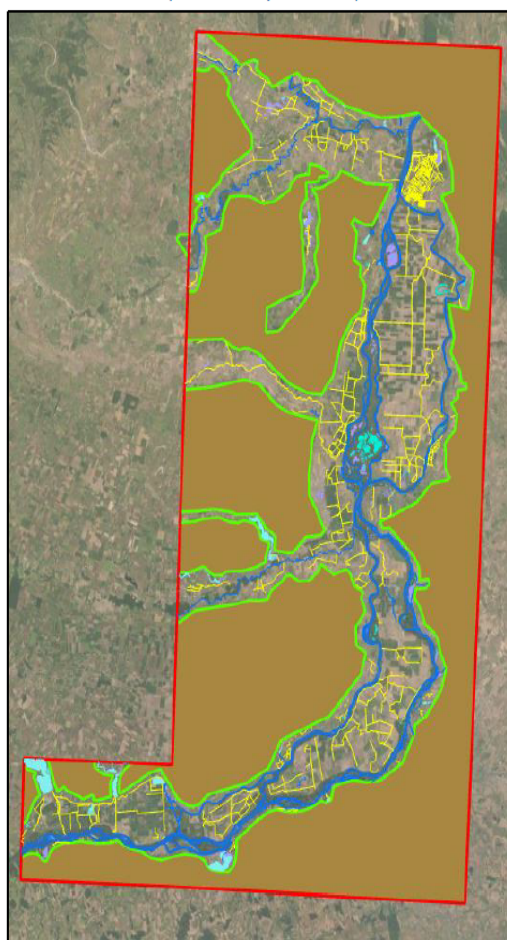
Metadata

File identifier	4e9a3bd2-836e-49e2-87ad-80ac9756c4ee XML
Metadata language	English
Character set	UTF8
Hierarchy level	Dataset
Date stamp	2024-03-17T10:18:57.46379Z
Metadata standard name	ISO 19115/19139
Metadata standard version	1.0

Metadata author

Organisation name	Individual name	Electronic mail address	Website	Role
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Overviews

Hydrological features digitalised over **Wallachia historical map** (1855-1859)

Hydrological features contained in the **Riparian zones** layer (reference year 2018)

	1 River		3 Wetland
	2 Waterbody		4 Island

	1 River		3 Wetland
	2 Waterbody		4 Higly modified water courses and canals

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