MANUAL

Adding Lublin Ortophotomap 1944 to ArcGIS PRO from ArcGIS Online

1. Open a new project in ArcGIS PRO 2020 or newer. Go to Add Data... \rightarrow Portal \rightarrow All Portals and type the phrase "Ortolub" in the search box.



2. Select the **Ortolub 1944 layer (tile layer - online)** and add it to your project. *If you want to work with tiles offline, you can download them by adding **Ortolub 1944 layer (tile package for download)** to your project. The weight of the package is approx. 330 MB. The program will perform the download itself.

8 8 g 5· c· ·		Mój_projekt3 - Mapa - ArcGIS Pro		? – Ø ×
Projekt Mapa Wstaw Analiza	Widok Edyrgia Zobrazowania Udostępnij - Opi Image	With the second	A) Pobler: ways to Offine G	🔁 Jakub (My Account) * 🦉 🔺
Solvent Neuropy Zawartość • 3 x Wysania • 3 x Kołojoć wytwietania • Celo Maga O Tepspaficza maja łasita O Tepspaficza maja łasita O Tepspaficza maja łasita	C Works transport	кар. G. Zapstere Etylstrowere 10 Oktoba /	n Office n Attracer Attracer X X X X State Attracer	kno podręczne + 9. x
	Image: Second Secon	Potomosenie Lubin Znach/koway: 2023 Losialzagie: transf anglu Jongfi siege storentiou.	Drophotomap 1944 - a tiled moscie of 1944 oto.aeria (WV2.1944,Lubin Lufhwath,NAAR Ke 3 8.44 Na 18.44 Na 18.44 Na 1940 Na 1940	Wybier alement w widolu za pomocą rustędzia do kadenia.
	Nerve Ortschill Stell (ble leger - ortine)	0 eese Paradatawy J200000110 23,40000110 V	Domytkie • OK Anuky C Anuky	

3. The cartographic projection will automatically change to EPSG:3857. The layer consists of 19 levels of tiles (zoom 0 - 18) with dimensions of 256 × 256 pixels and resolution of 96 DPI. After a moment of refreshing the *Lublin Ortophotomap 1944* is ready to work with:



Lublin Ortophotomap 1939-1945



4. You can add your own spatial data or other data from the ArcGIS Online portal, basemaps, and satellite imagery to the project. To compare the historical situation with the contemporary state, you can add a base map to the project, e.g. Add Basemap → Imagery or OpenStreetMap (move the map bar below).



- 5. With a good Internet connection the tile layers load smoothly. When zooming in, there is an impression of slight shifting of the content, so called "waving" of tiles, which is caused by averaging of pixel values in the image. After zooming and loading tiles of the proper level, the *Lublin Ortophotomap 1944* presents very high compatibility with contemporary spatial data.
- 6. A convenient way of viewing *Lublin Ortophotomap 1944* and comparing it with the contemporary situation is the *Swipe* tool available in the *Effects* tab. After activating the appropriate layer in the toolbar, using smooth strokes with the left mouse button, you can dynamically switch off the layer display, similarly to selecting text in a text editor.





ublin Ortophotomap 1939-1945.



- 7. Due to the nature of source data (age and scale of archival aerial photographs and quality of scanning) Lublin Ortophotomap 1944 is inferior in quality to modern aerial orthophotomaps made available by the Main Office of Geodesy and Cartography (GUGiK). You can read about adding the GUGiK Ortophotomap as a WMTS service here: https://enterprise.arcgis.com/pl/portal/latest/use/add-layers.htm and here: https://enterprise.arcgis.com/pl/portal/latest/use/hosted-web-layers.htm
- 8. Depending on the number of ground control points used to calibrate the individual images, the accuracy of point features ranges from approximately 0.1 m to values slightly exceeding 1 m. The base pixel size of the mosaic of the aerial photographs taken is 0.42 x 0.42m, the mosaic file has dimensions of 38397 x 44310 px and occupies respectively: 828 MB geoTIFF file in 8-bit grayscale and LZW compression; 3160 MB geoTIFF file with alpha channel, masking residual fragments of the photos located outside the present administrative area of Lublin. The ESRI tiled package (.tkpg) weighs about 330 MB.
- 9. The list of images used to develop the Ortophotomap is available as a table at <u>https://ortolub.umcs.pl/tab_en.html</u> and as an interactive map index at <u>https://ortolub.umcs.pl/map_en.html</u>. You may also download it as a geojson file from <u>https://ortolub.umcs.pl/data/Ortolub_1944_geojson_3.zip</u>. The historical city boundary from the first half of the 20th century can be found in the same location in file <u>Lublin 1931_1947.zip</u>.



10. The historical ortophotomap is also available at ArcGIS Online, when typing "Jakub_Kuna" you can find an interactive web-map, online tile layer and a tile layer package for download https://www.arcgis.com/home/search.html?q=owner%3A%22Jakub_Kuna%22&t=content&restrict=false.



UMCS

Lublin Ortophotomap 1939-1945

Q owner:"Jakub_Kuna"		× 평 Dopasowanie 법 Filtru
Zasoby Grupy	1 - 3, razem: 3	
Filtry	A	Ortolub 1944 (tile layer - online)
~ Typ elementu Mapy Warstwy Sceny	1	The Layer utworzena przez Jakub <u>Kuna</u> Lubin Ortophotomap 1944 – stłed mosie of 1944 aerial images taken owe Lubin by German akł reconnaissance. Scaned images were obtained from NARA achive in College Park, USA. More info at https://www.ontolub.umc.pl Woorzeno: 28 car 2021 - Manuliacja 28 car 2021 - Licita wyświetleń 22
Aplikacje Narzędzia Pliki		@ ···
Insights Notatniki		Ortolub 1944 (web map) Web Map unvorzona przez Jakub_Kuna
 > Ostatnia modyfikacja > Status 		Lublin Ortophotomap 1944 - the project presents a tiled mossic and an interactive overlay index of 1944 serial images taken over Lublin by German airreconnaissance, Scanned images were obtained from NARA archive in College Park, USA. (https://catego) Utworzono: 28 cze 2021 Akualitacje: 28 cze 2021 Uczbe wykwieleń: 58
		@ ···
	*	Cytolub 1944 (tile package for download) Tile Package utvortona przez Jakub Xuna Lubin Ortophomap 1944 st lied mosaic of 1944 aerial images taken over Lubin by German al' reconnaisance. Scanned images were obtained from NARA archive in College Park, USA. For more info at https://www.ortolub.umcs.pl Utworzeno: 28 cce 2021 Abuellacije: 28 cce 2021 Licible pobrekr. 1
		@ ···
	Centrum zaufania Zag	gadnienia prawne Skontaktuj się z Esri Zgłoś naruszenie

11. Short version (for lazy people).

Download the file <u>https://ortolub.umcs.pl/data/Ortolub_1944_ArcGIS_PRO.zip</u>, extract the *.pitemx* file and open it. Once the project is open, refresh the existing basemap or add a new basemap. Use historical Ortophotomap and index of aerial photographs of Lublin in ArcGIS PRO desktop application:



- 12. The project was carried out under the Polish National Science Centre (*pol. Narodowe Centrum Nauki*, NCN). grant programme Miniatura 4.0. '*Development of the Ortophotomap of Lublin 1939–1945*' (ref. no. 2020/04/X/HS4/00382).
- 13. The results of my work are made available under a Creative Commons **CC BY-SA 4.0 license** (attribution under the same conditions).
- 14. Respect copyright when using a resource, acknowledge its source, and when writing your text, cite my publications. You can find out more about my research at https://www.umcs.pl/en/addres-book-employee,3529,en.html
- 15. Good luck!

UMCS

