



„Mining sites as biodiversity refugia”

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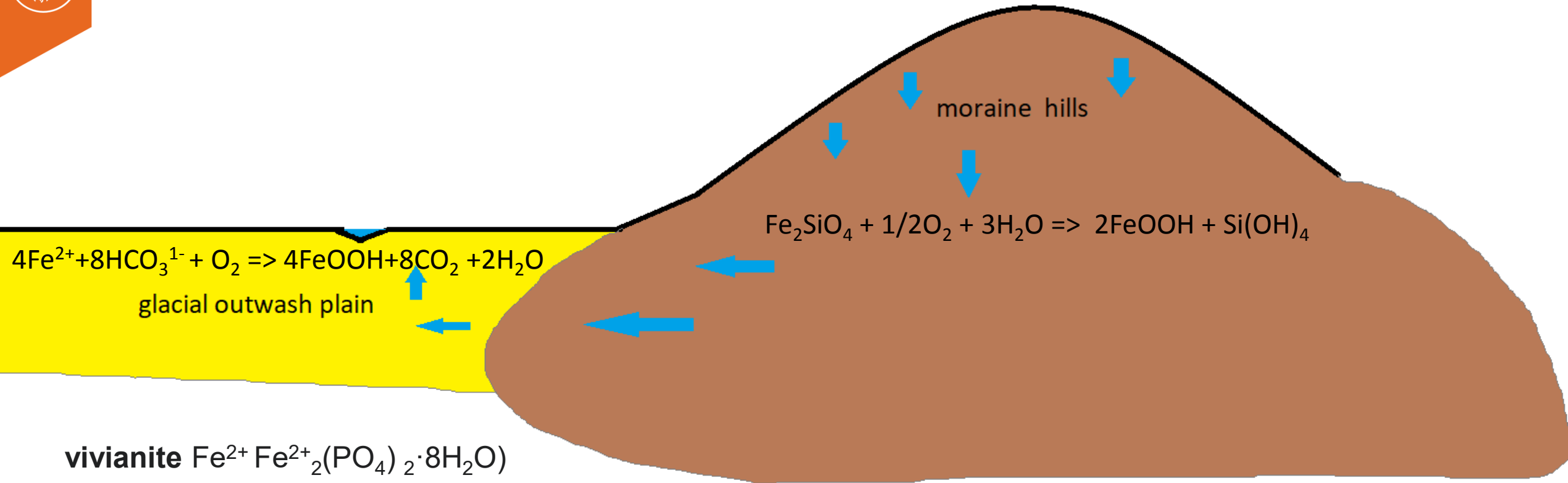
Ice age *Urstromtäler* formed in Pleistocene by meltwaters parallel to the margin of the Scandinavian Ice Sheet



Ice age *Urstromtäler* formed in Pleistocene by meltwaters parallel to the margin of the Scandinavian Ice Sheet



bog (turf, meadow) iron ores





BLOOMERY

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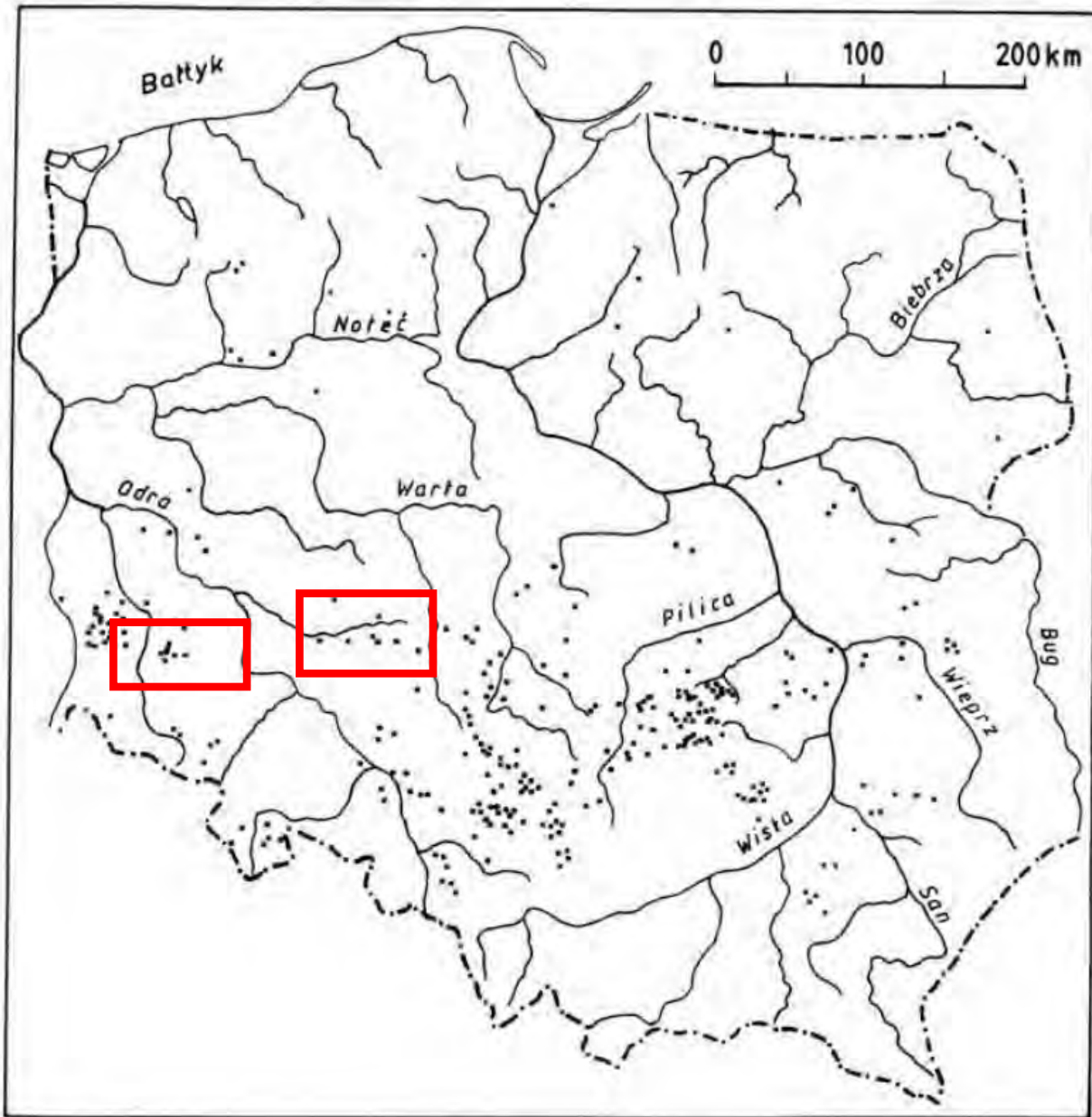
Milicz – city park, by A.Solecki



Areas of occurrence of bog iron ores (according to Białaczewski 1948), as well as being the subject of exploration works in the years 1966–1968. Explanations:
 1 – areas registered;
 2 - areas intended for exploitation

Fig. 1.12. Obszary występowania rud darniowych w Polsce powojennej (wg A. Białaczewskiego 1948), a także będące przedmiotem prac poszukiwawczych w latach 1966–1968. Objaśnienia: 1 – obszary zarejestrowane; 2 – obszary przewidziane do eksploatacji

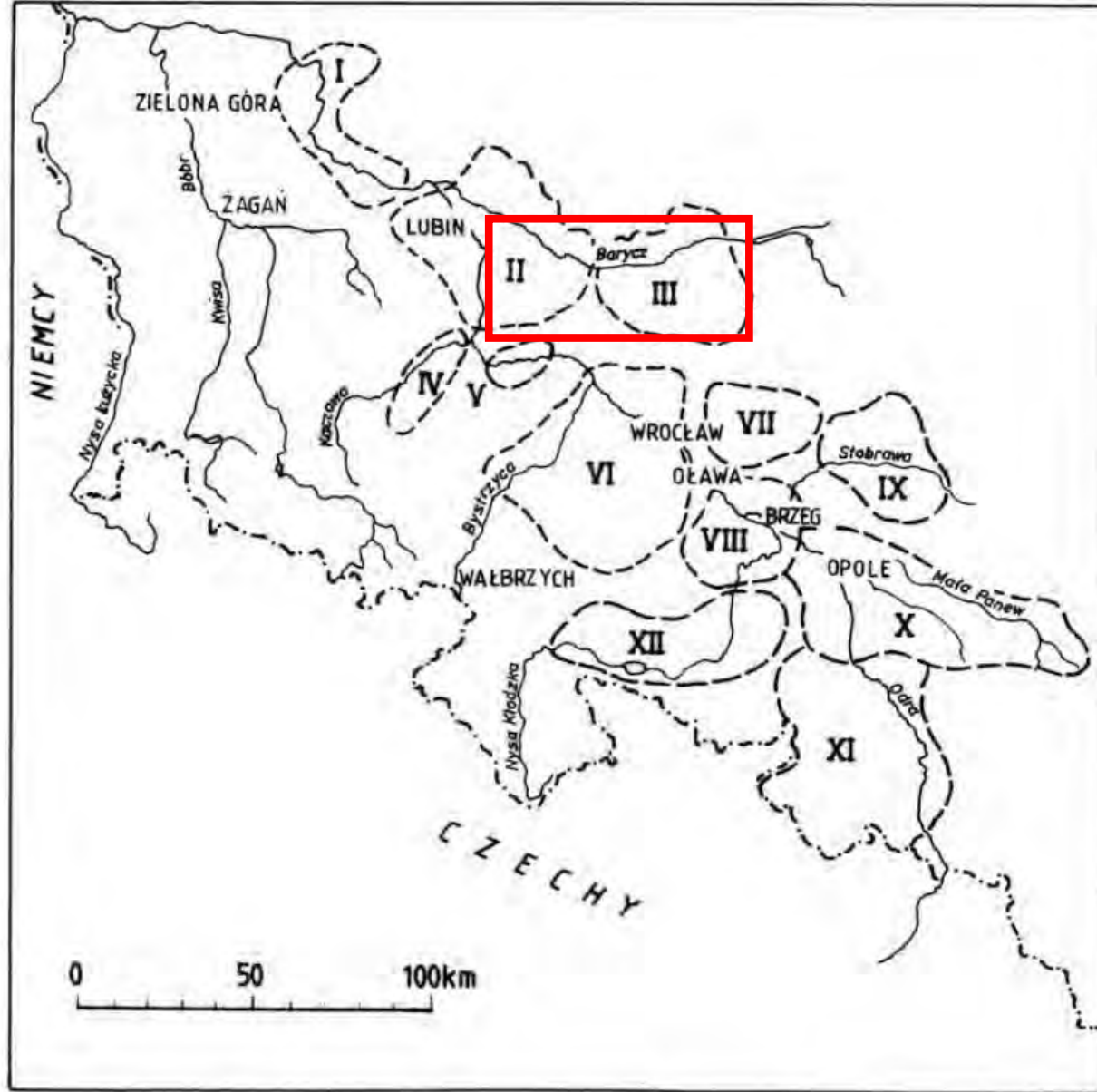
after Ratajczak and Rzepa, 2011



Distribution of bloomeries and forges in the 16th century(after Radwan 1963)

Fig. 1.7. Rozmieszczenia dymarek i kuźnic w granicach Polski w XVI wieku (wg M. Radwana 1963)

after Ratajczak and Rzepa, 2011



The Przeworsk culture an Iron Age material culture
3rd century BC - 5th century AD

Fig. 1.19. Lokalizacja stanowisk ze śladami hutnictwa rud darniowych związanych z kulturą przeworską (wg P. Madery 2002). Objaśnienia i nazwy rejonów: I – głogowski; II – dolnobarycko-odrzański; III – górnobarycki; IV – kaczawski; V – średzki; VI – bystrzycko-oławski; VII – widawski; VIII – brzeski; IX – stobrawski; X – strzelecko-opolski; XI – głubczycki; XII – nyski

after Ratajczak and Rzepa, 2011

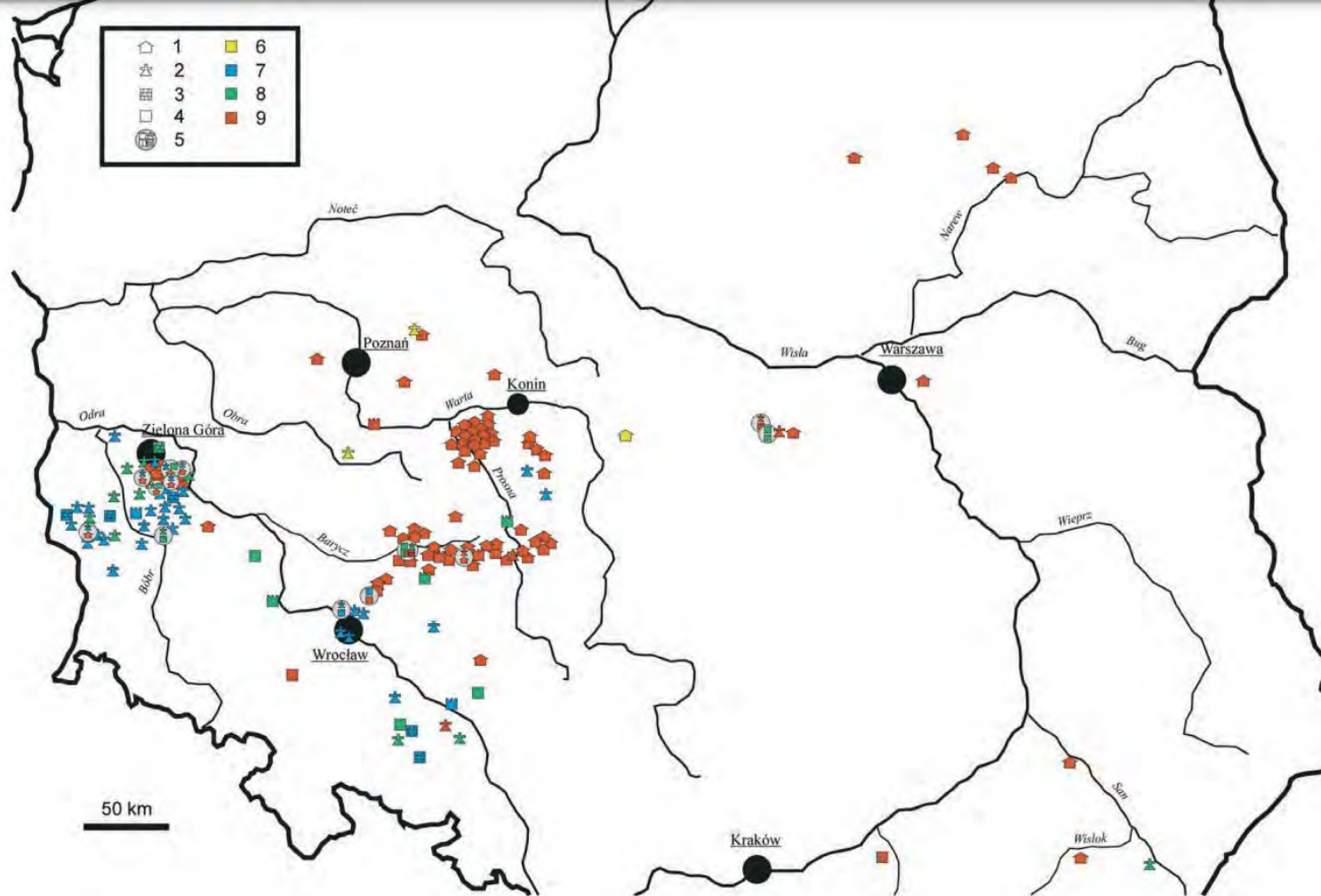


Fig. 3.17. Locations where bog ores were used for construction purposes.

1 - residential and utility buildings;
 2 - religious buildings (churches and chapels);

3 - walls;

4 - other;

5 - various types of use);

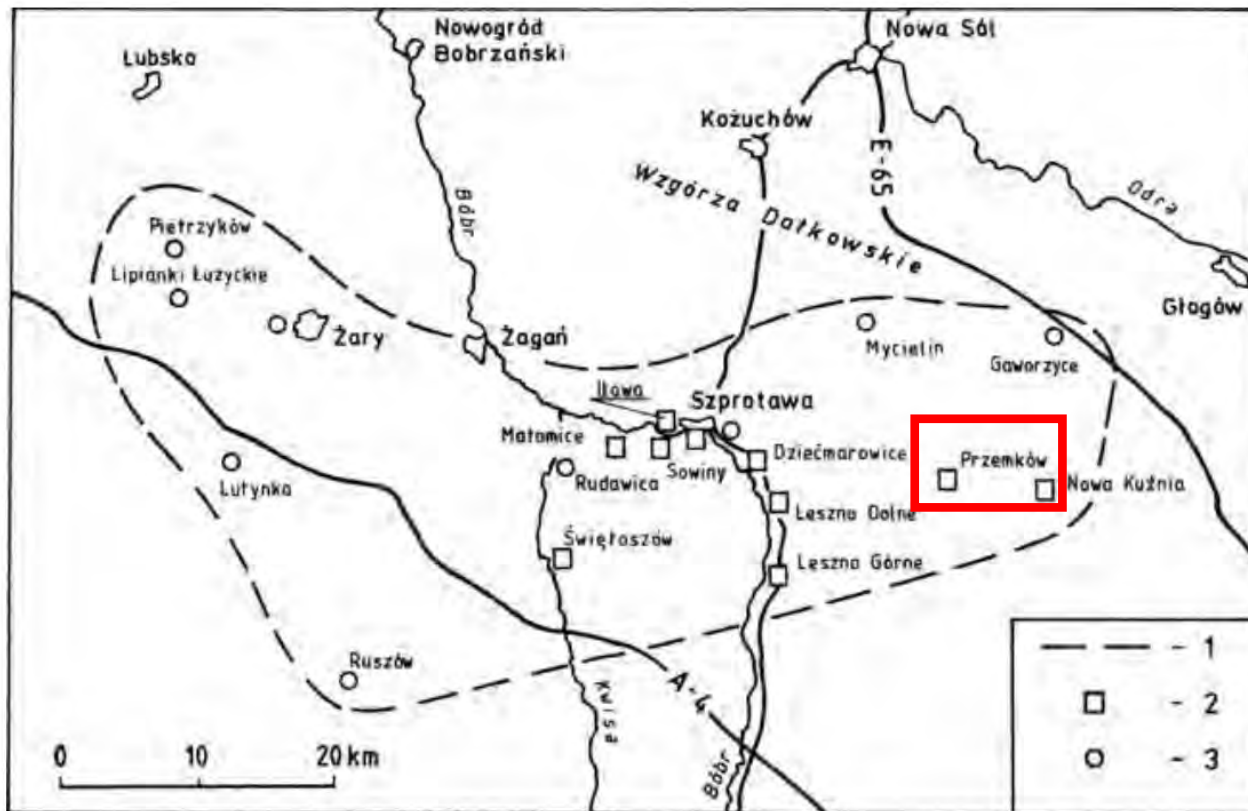
6 - objects from the 11th-12th centuries;

7 - objects built in the 13th-15th centuries;

8 - objects built in the 16th-18th centuries;

9 - objects built in the 19th-20th centuries)

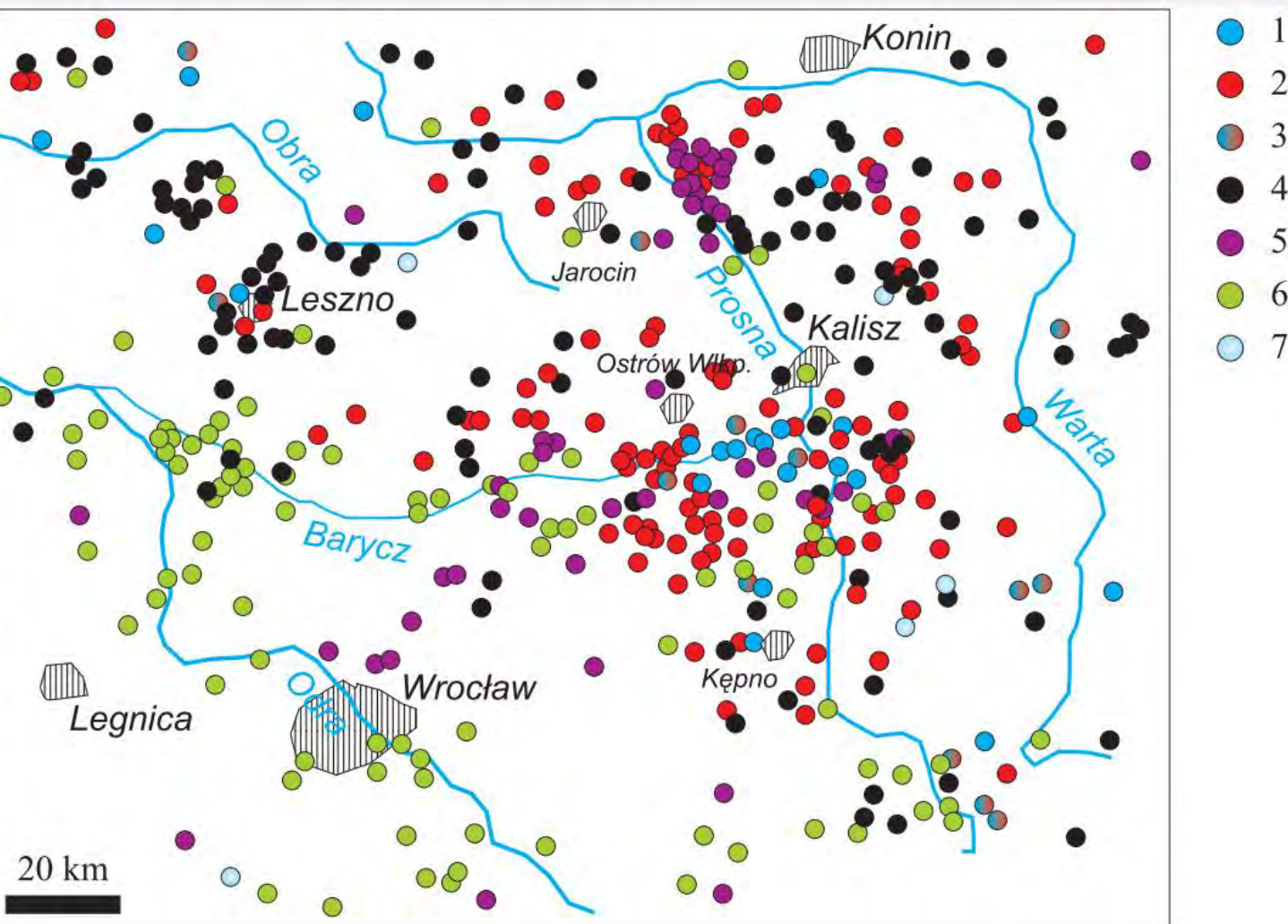
Fig. 3.17. Lokalizacja miejscowości, w których rudy darniowe wykorzystywano do celów budowlanych. Objasnienia: 1-5 – rodzaje budowli (1 – budynki mieszkalne i gospodarcze; 2 – obiekty sakralne (kościóły i kapliczki); 3 – mury; 4 – inne; 5 – różne rodzaje zastosowania); 6-9 – wiek budowli (6 – obiekty pochodzące z XI–XII wieku; 7 – obiekty zbudowane w XIII–XV wieku; 8 – obiekty zbudowane w XVI–XVIII wieku; 9 – obiekty zbudowane w XIX–XX wieku)



The Szprotawsko-Żary area with marked localities known for the use of ores in construction and in iron metallurgy (according to M. Dankows 2002).

- 1 - area boundaries;
- 2 - towns known for the former smelting processing of bog ores;
- 3 - localities with bog ore used as building material

Fig. 3.19. Obszar szprotawsko-żarski z zaznaczonymi miejscowościami znanymi z wykorzystania rud darniowych w budownictwie oraz w hutnictwie żelaza (wg M. Dankowskiego 2002). Objaśnienia: 1 – granice obszaru; 2 – miejscowości znane z dawnego przetwórstwa hutniczego rud darniowych; 3 – miejscowości z rudą darniową wykorzystywaną jako materiał budowlany



Location of accumulations of various types of bog ores in the Barycz and Prosna valleys togetherwith traces of their use in construction and metallurgy.

- 1 - occurrence of fine ores;
- 2 - the occurrence of lump ores;
- 3 - mixed ores;
- 4 - no data on the type of ore;
- 5 - places of use in construction;
- 6 - places of use in metallurgy;
- 7 - vivianite occurrences

fig. 1.24. Lokalizacja nagromadzeń różnych odmian rud darniowych w dolinach Baryczy i Prosny wraz ze śladami ich wykorzystania w budownictwie i hutnictwie. Objasnienia: 1 – wystąpienia rud miałkich; 2 – wystąpienia rud kawałkowych; 3 – wystąpienia rud mieszanych; 4 – brak danych o odmianie rudy; 5 – miejsca wykorzystania w budownictwie; 6 – miejsca wykorzystania w hutnictwie; 7 – wystąpienia wivianitu



Ramsar Sites Information Service

2,455 Sites covering 255,897,678 ha

Log in | EN FR ES

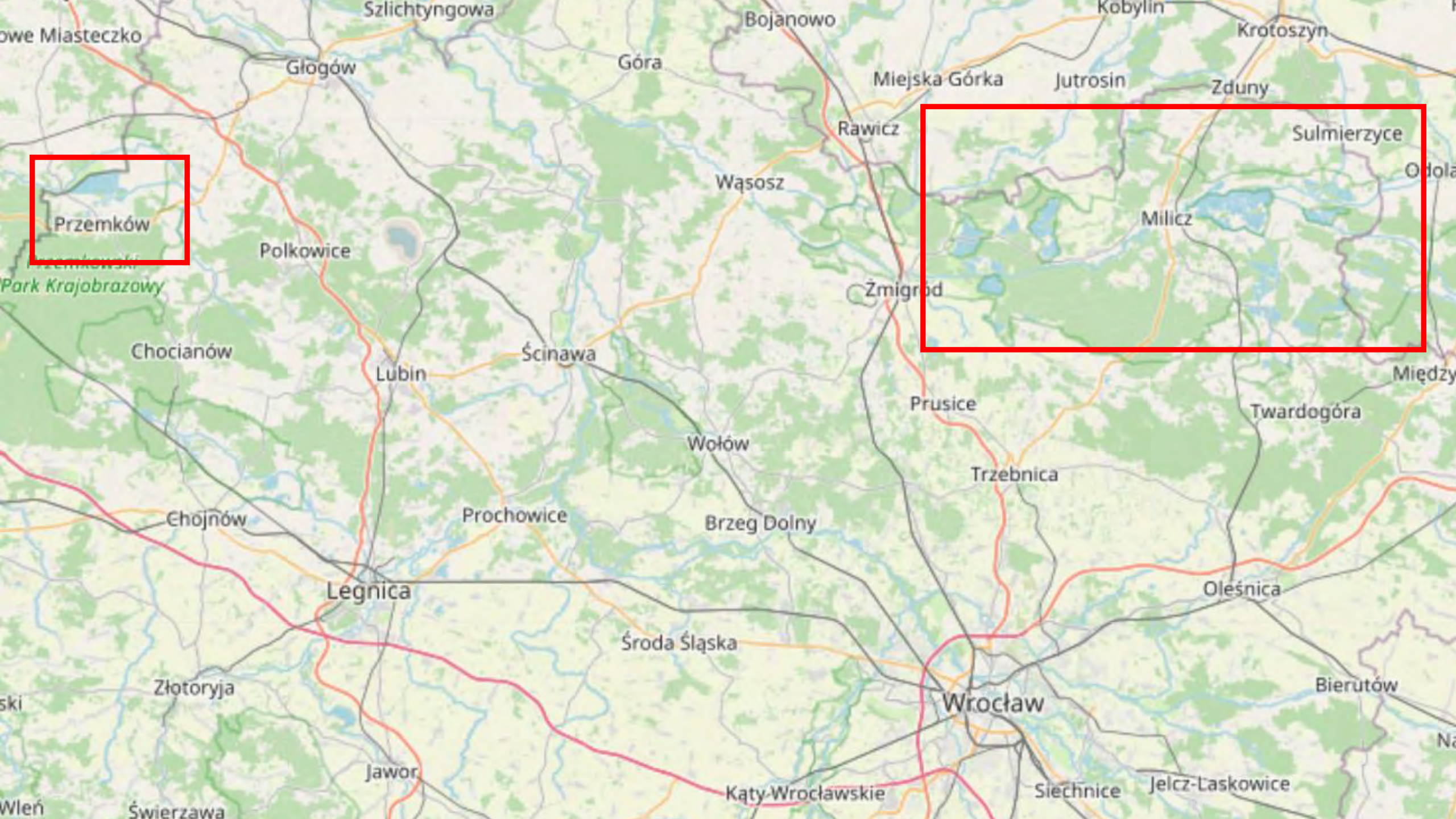
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About

Ramsar Sites and the List of Wetlands of International Importance

Under the [Convention on Wetlands](#) (Ramsar, 1971), each Contracting Party undertakes to designate at least one wetland site for inclusion in the [List of Wetlands of International Importance](#). There are over 2,000 "Ramsar Sites" on the territories of over 160 Contracting Parties across the world.

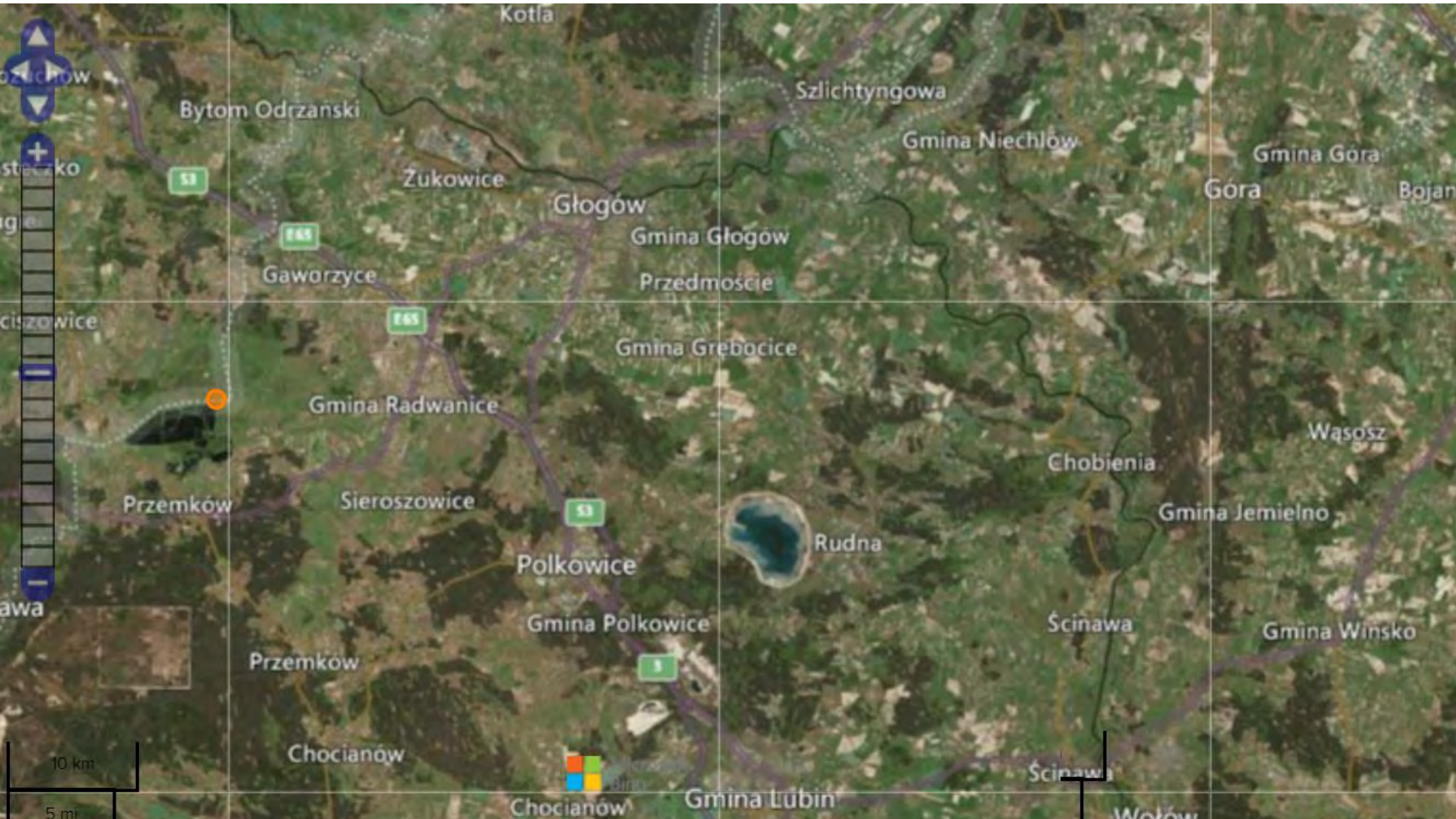
For more information on the Convention, please visit the [Convention website](#).



Przemków

Żmigród
Milicz
Sulmierzyce





Bytom Odrzański

Przemków

Przemków

Przemków

Kotla

Bytom Odrzański

Żukowice

Głogów

Gmina Głogów

Przedmoście

Gmina Grebocice

Gmina Radwanice

Sieroszowice

Polkowice

Gmina Polkowice

Przemków

Chocianów

Chocianów

Gmina Lubin

Szlichtyngowa

Gmina Niechlów

Gmina Góra

Góra

Bojanów

Wąsosz

Chobienia

Gmina Jemielno

Rudna

Ścinawa

Gmina Winisko

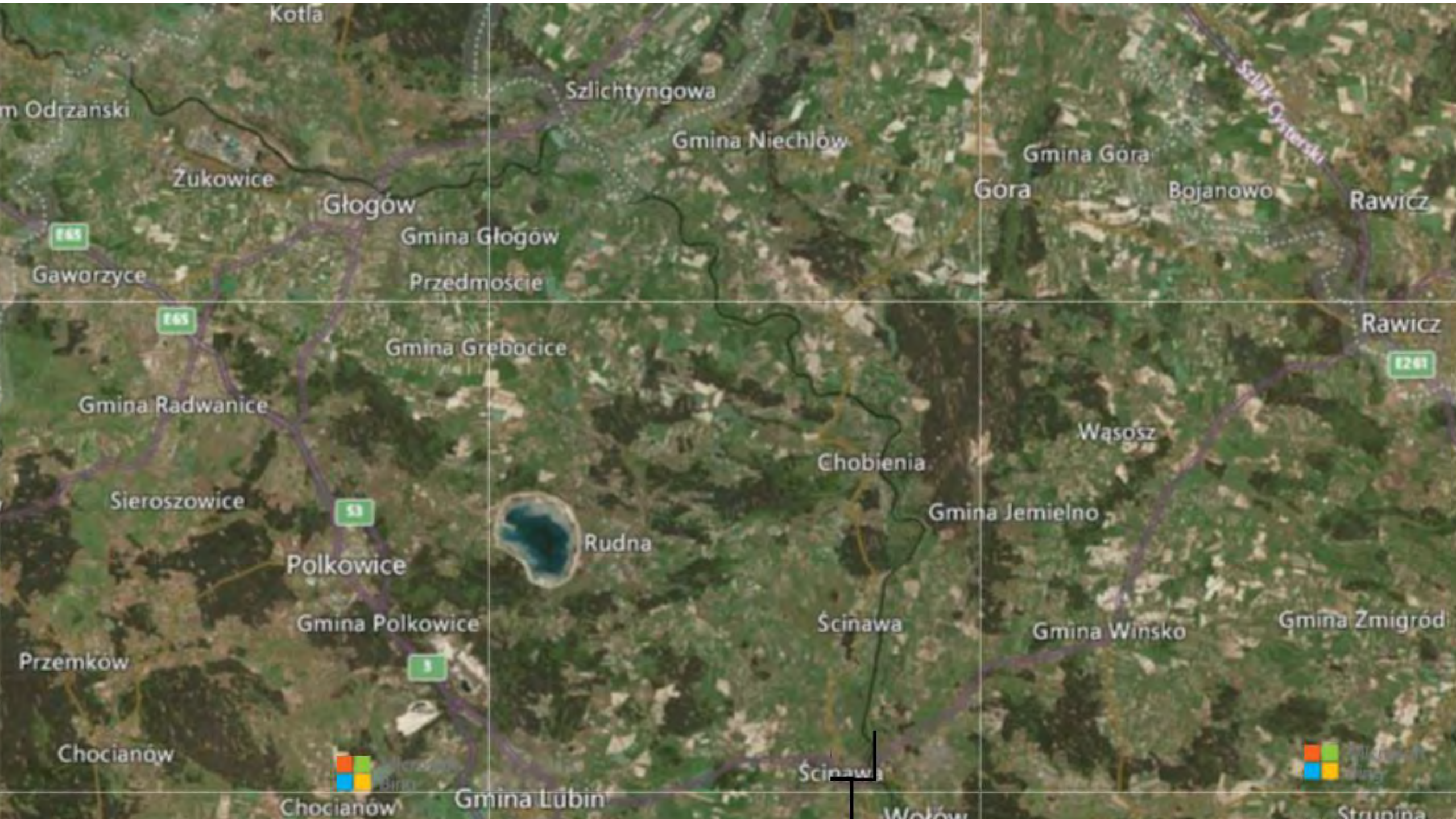
Ścinawa

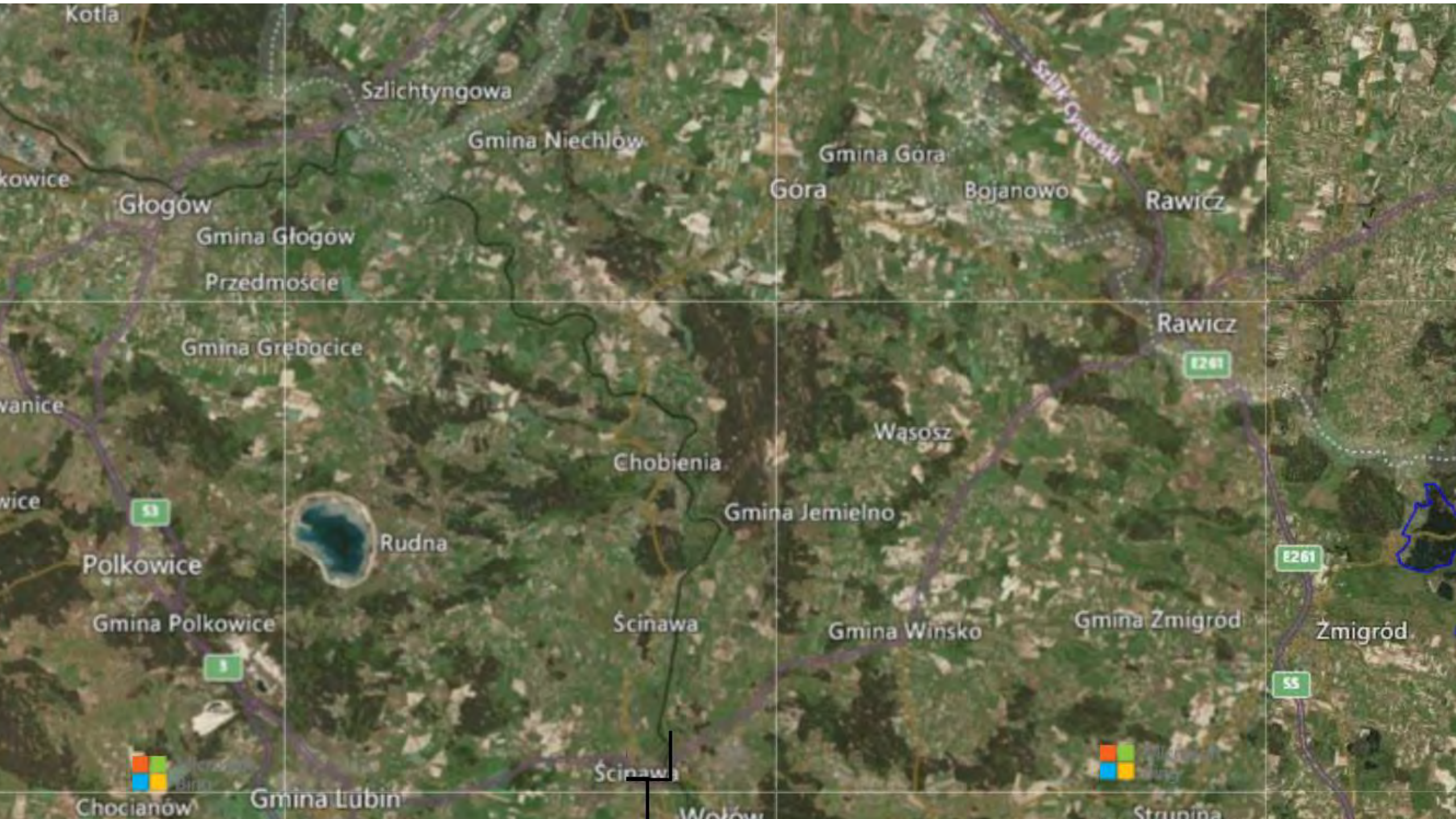
Wolów

10 km

5 mi







Kotla

Szlichtyngowa

Gmina Niechlów

Gmina Góra

Góra

Bojanowo

Rawicz

Szalik Cysterski

Polkowice

Głogów

Gmina Głogów

Przedmoście

Gmina Grebocice

Polkowice

Polkowice

SS

Polkowice

Gmina Polkowice

SS



Rudna

Chobienia

Gmina Jemielno

Wąsosz

Rawicz

E261

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Gmina Wąsosz

Gmina Zmigród

Zmigród

SS

Scinawa

Wolów



Strupina

Chocianów

Gmina Lubin

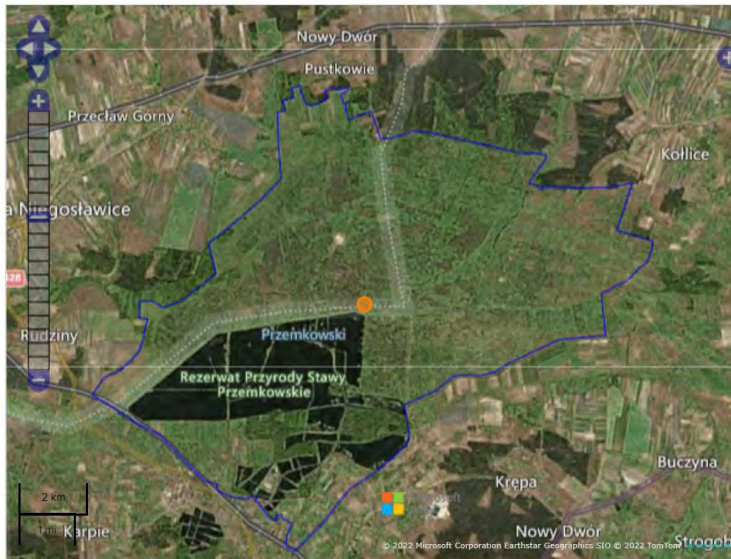




Autorstwa Flyrecord - Praca własna, CC BY-SA 4.0,
<https://commons.wikimedia.org/w/index.php?curid=49284313>

Przemków Fish Ponds

Country: Poland
Site number: 2320
Area: 4,605.4 ha
Designation date: 09-04-2015
Coordinates: 51°34'N 15°48'E



Materials presented on this website, particularly maps and territorial information, are as-is and as-available based on available data and do not imply the expression of any opinion whatsoever on the part of the Secretariat of the Ramsar Convention concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Overview

Downloads

The Site includes two fish pond complexes with a total of 35 ponds, together with adjacent wet meadows, reedbeds and riparian forests. It boasts an abundant birdlife: out of 216 species observed, 48 are waterbirds. The Site is one of the most important areas in this part of Europe for resting and feeding migratory birds, and especially for bean goose *Anser fabalis*, with 19% of its non-breeding population supported by the Site. It is also of great importance for breeding birds, with as many as 147 species recorded, including waterbirds of European importance such as the common kingfisher *Alcedo atthis*, the corn crane *Crex crex* and the red-backed shrike *Lanius collurio*. Various threatened amphibians, reptiles and mammals are also present. The Site plays a valuable role in flood control and soil formation, and provides recreational, educational and scientific opportunities. It is a model for local cooperation, with the Lower Silesia Landscape Park Complex, the Polish Angling Association, the Roma People Association and other organisations working together to support traditional fisheries, promote their products and raise the awareness of fishermen of the importance of birds to the health of the ecosystem.

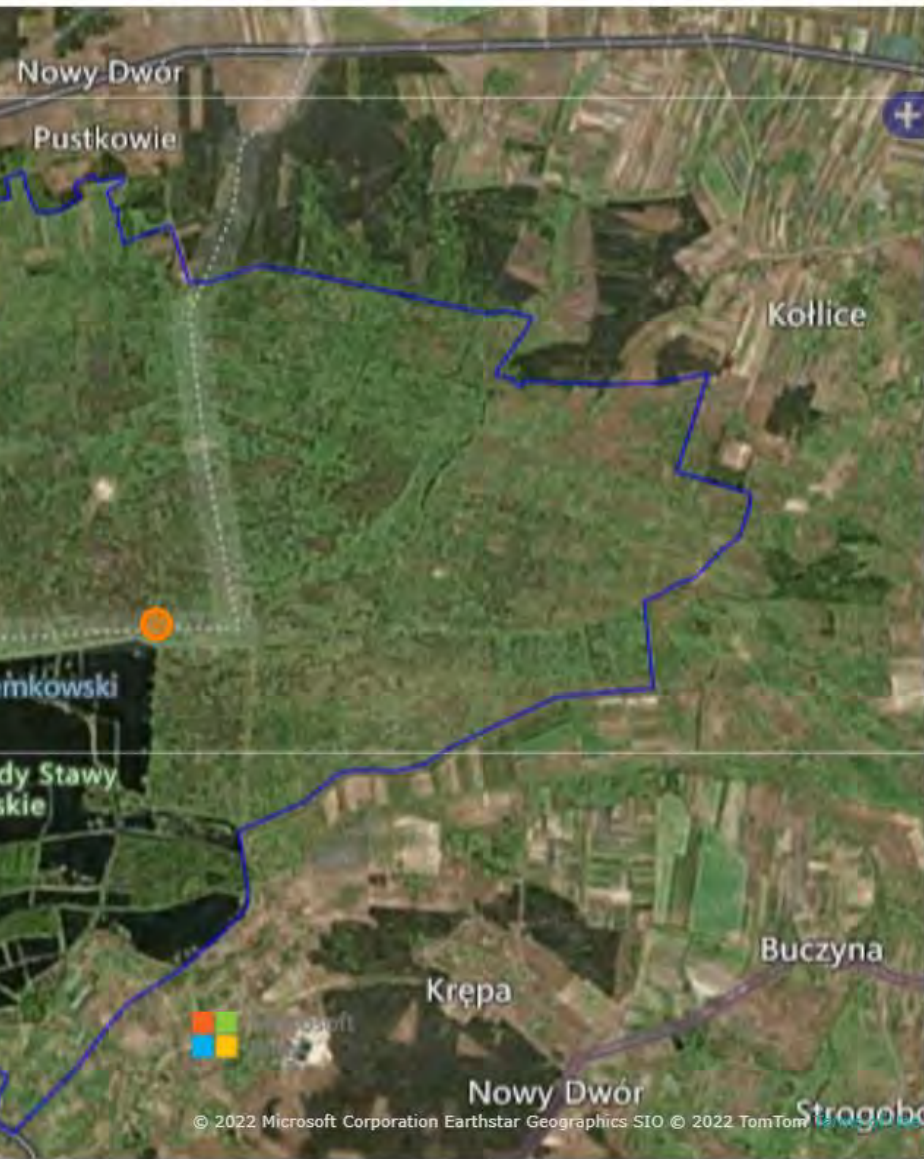
Administrative region: Dolnośląskie and Lubuskie Voivodeship

National legal designation:

- Ecological Area - Ecological Area Przemków Swamp (1993; 1 696.78 ha)
- Landscape Park - Przemkowski Landscape Park (1997; 22 338 ha) – in the south-eastern part of the site
- Nature reserve - Przemków Fish Ponds Nature Reserve (1984, updated 2014; 1 071.5648 ha) - in the south-western part of the site;
- Protected Landscape Area - Protected Landscape Area "31 - Szprotawka Valley" (2003; 5 570 ha) – north-west part of the site

Regional (international) legal designations:

- EU Natura 2000

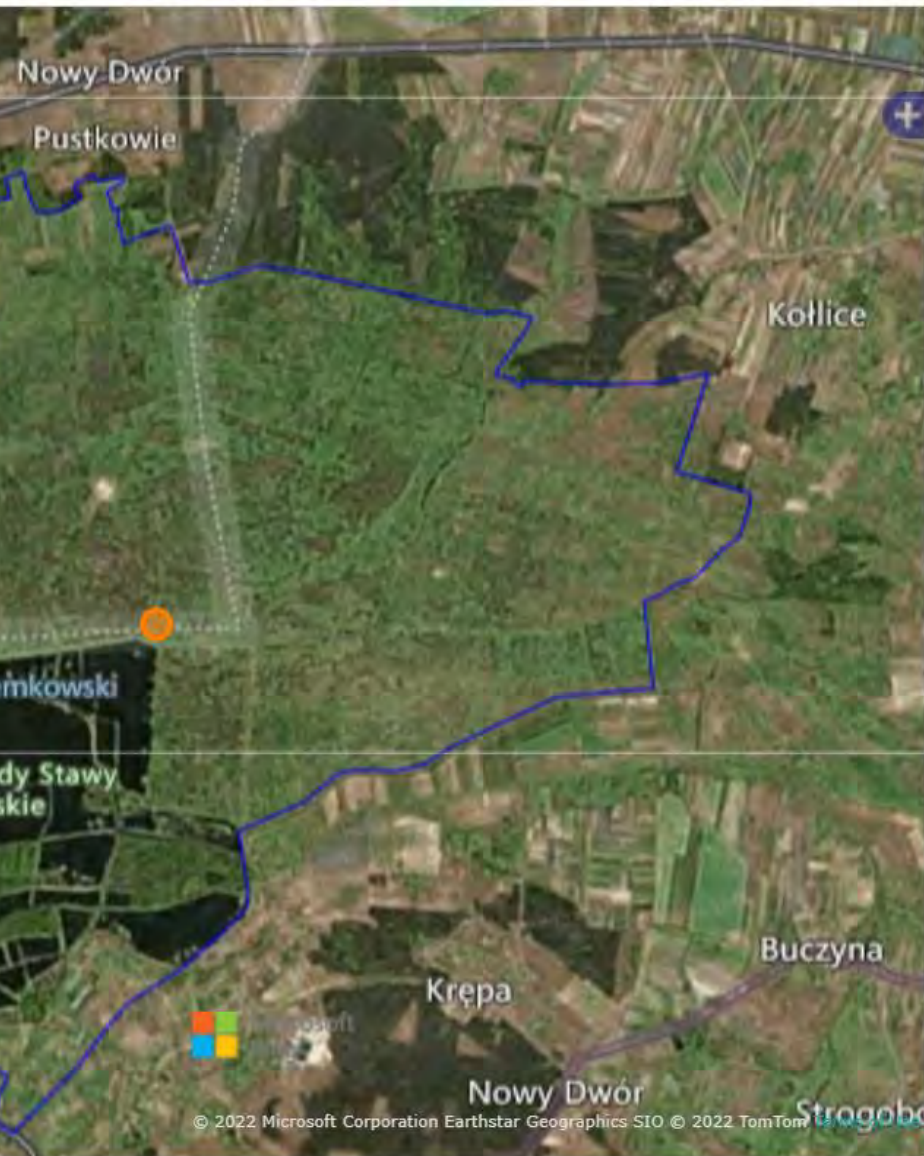


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Administrative region: Dolnośląskie and Lubuskie Voivodeship

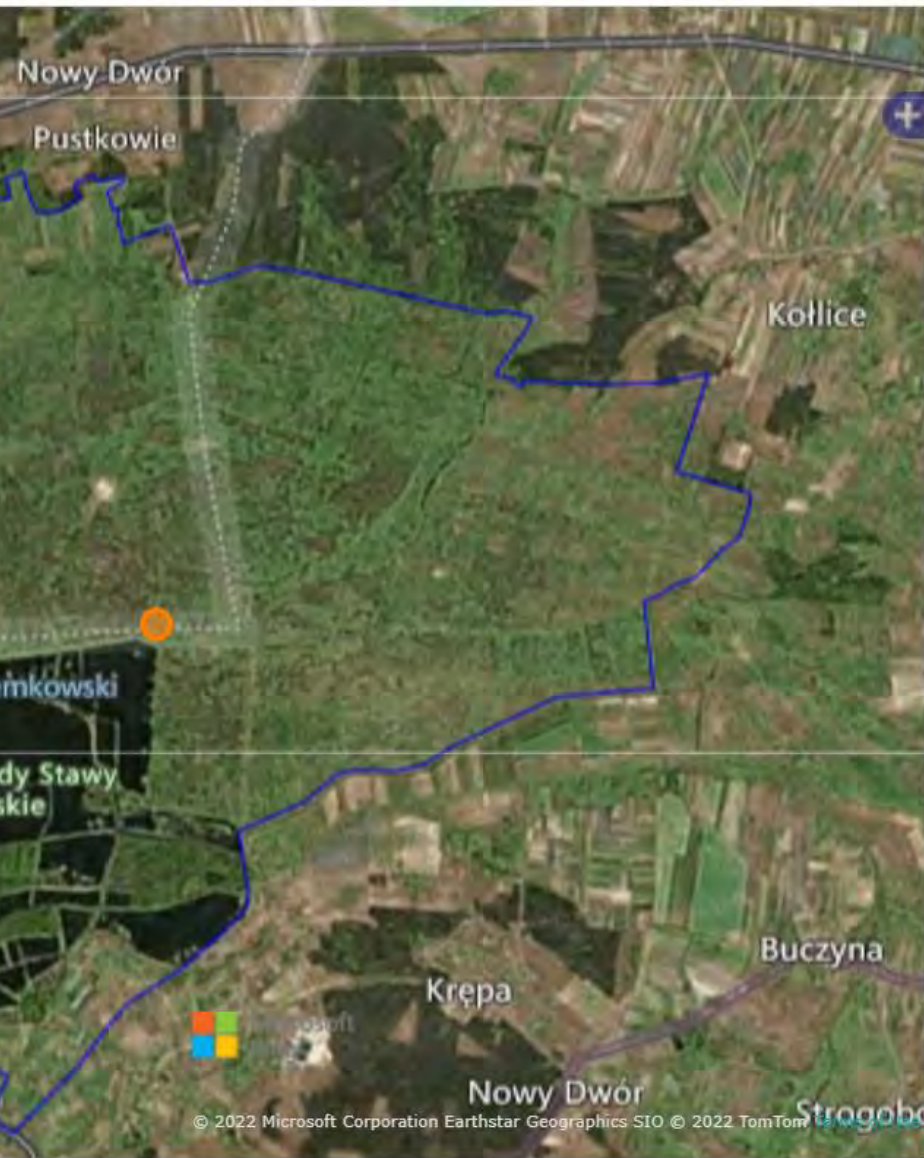


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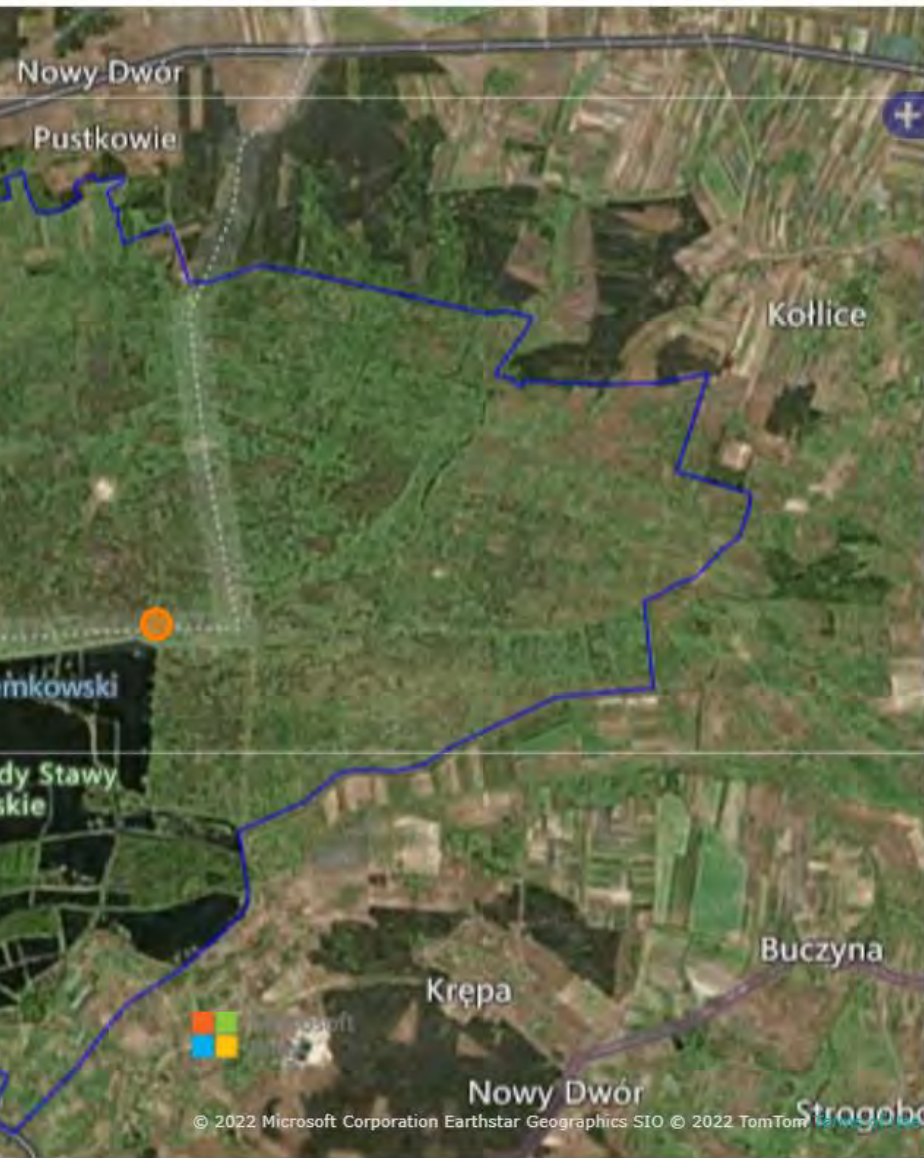


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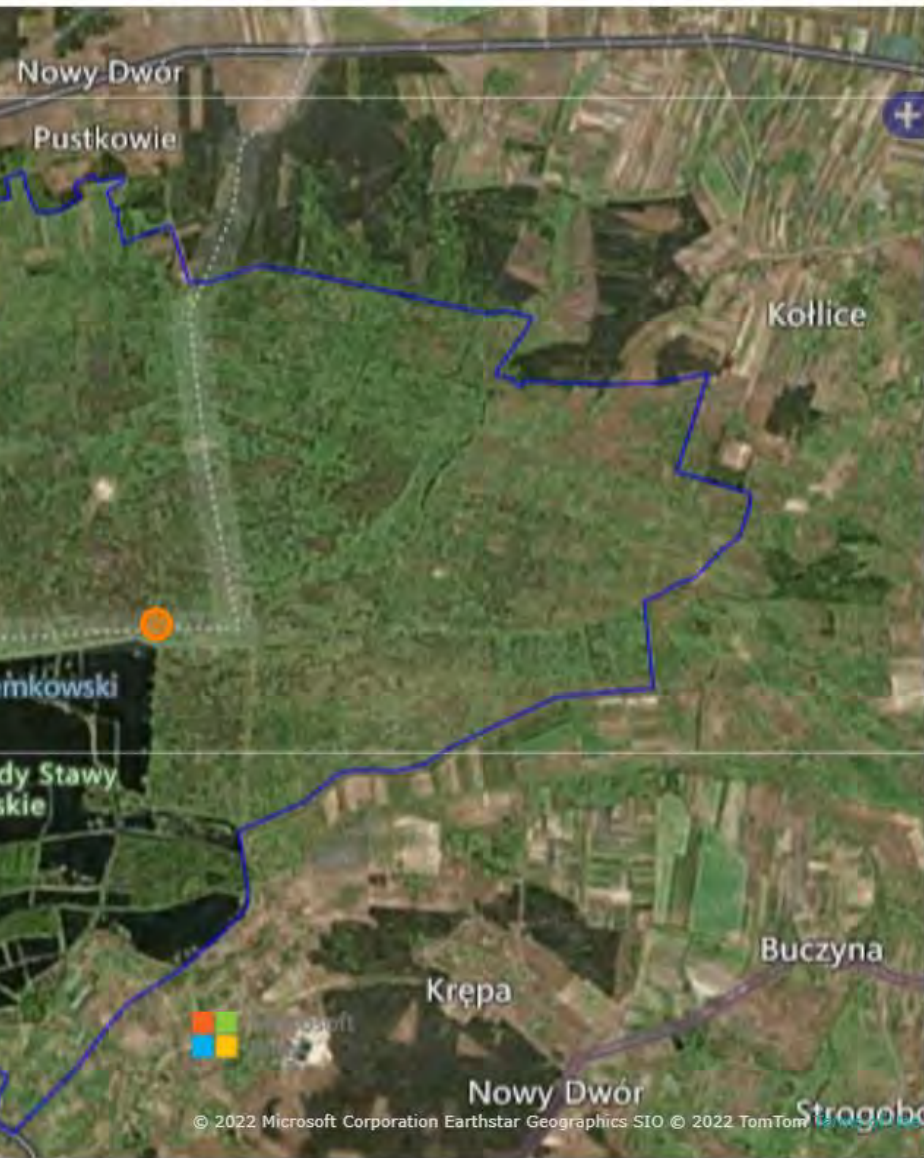


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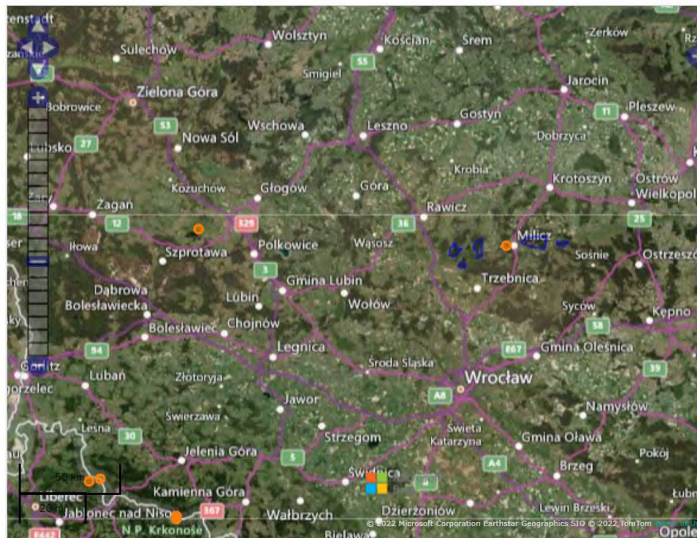
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Administrative region: Dolnośląskie and Lubuskie Voivodeship



Milicz Fishponds Nature Reserve

Country: Poland
Site number: 758
Area: 5,298.2 ha
Designation date: 24-10-1995
Coordinates: 51°31'N 17°14'E



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The Ramsar Site includes five separate sub-sites featuring fishpond complexes that have been in place for several centuries; it also features marshlands, meadows and forests, while most of the ponds are surrounded by a wide belt of rushes. The ponds are fed by the waters of the Barycz river; the water quality is high because of the lack of industry and low population density of the river's catchment area. The Reserve hosts 137 breeding bird species, of which many are rare, and over 50 further migrant species pass through. Large flocks of ducks, geese and other waterbirds gather during their spring and autumn migrations. There are also numerous species of rare plants found in the reserve, mainly aquatic species. Nature trails have been established, as well as two sightseeing spots with observation towers. The ornithological station of the University of Wrocław, located in Ruda Milicka at the edge of the Reserve, plays a significant educational and information role. Human intrusions and disturbance and invasive species are among the most important threats to the area; a management plan has been in place since 2013.

Administrative region: Dolnośląskie

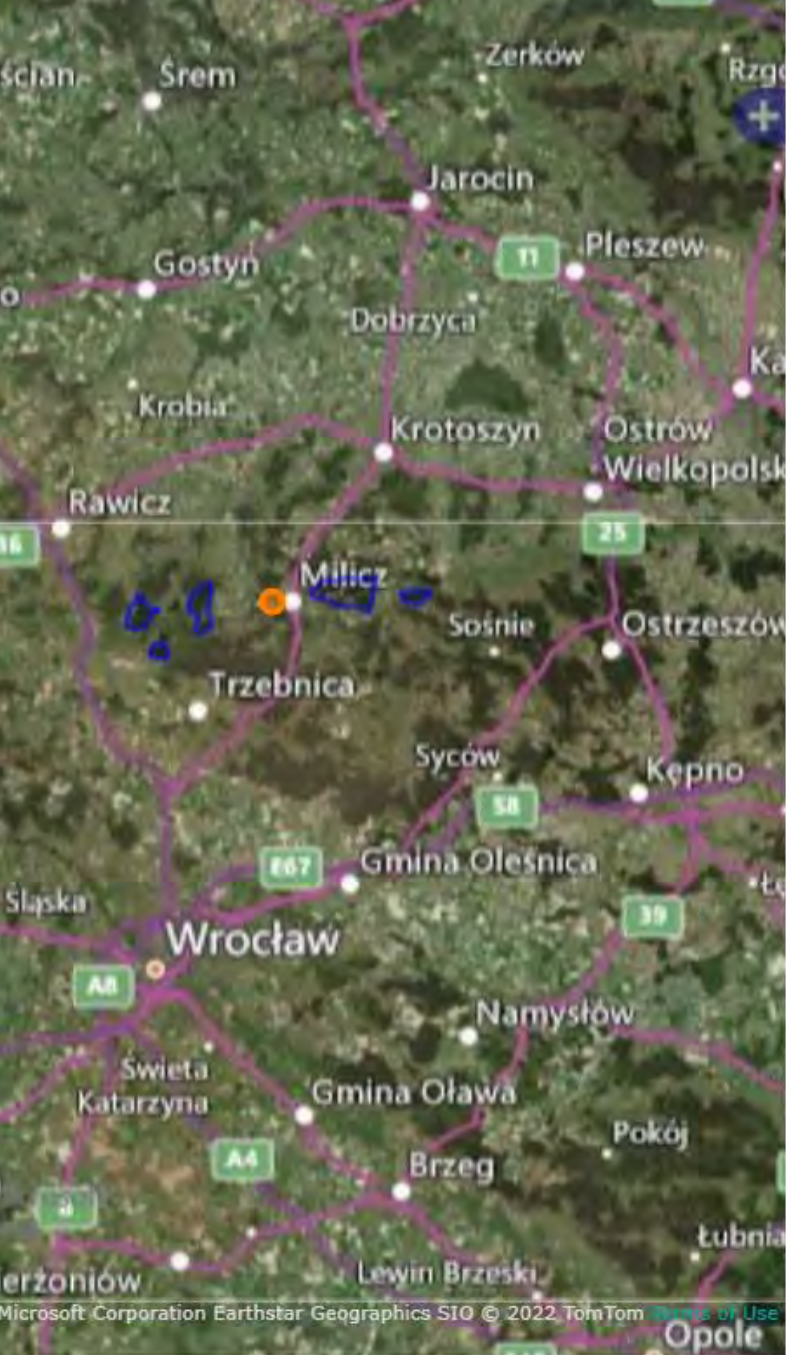
National legal designation:

- Landscape Park - Park Krajobrazowy Dolina Baryczy (Barycz Valley Landscape Park)
- Nature Reserve - Rezerwat Przyrody Stawy Milickie (Milicz Fishponds Nature Reserve)

Regional (international) legal designations:

- EU Natura 2000

Last publication date: 24-01-2019

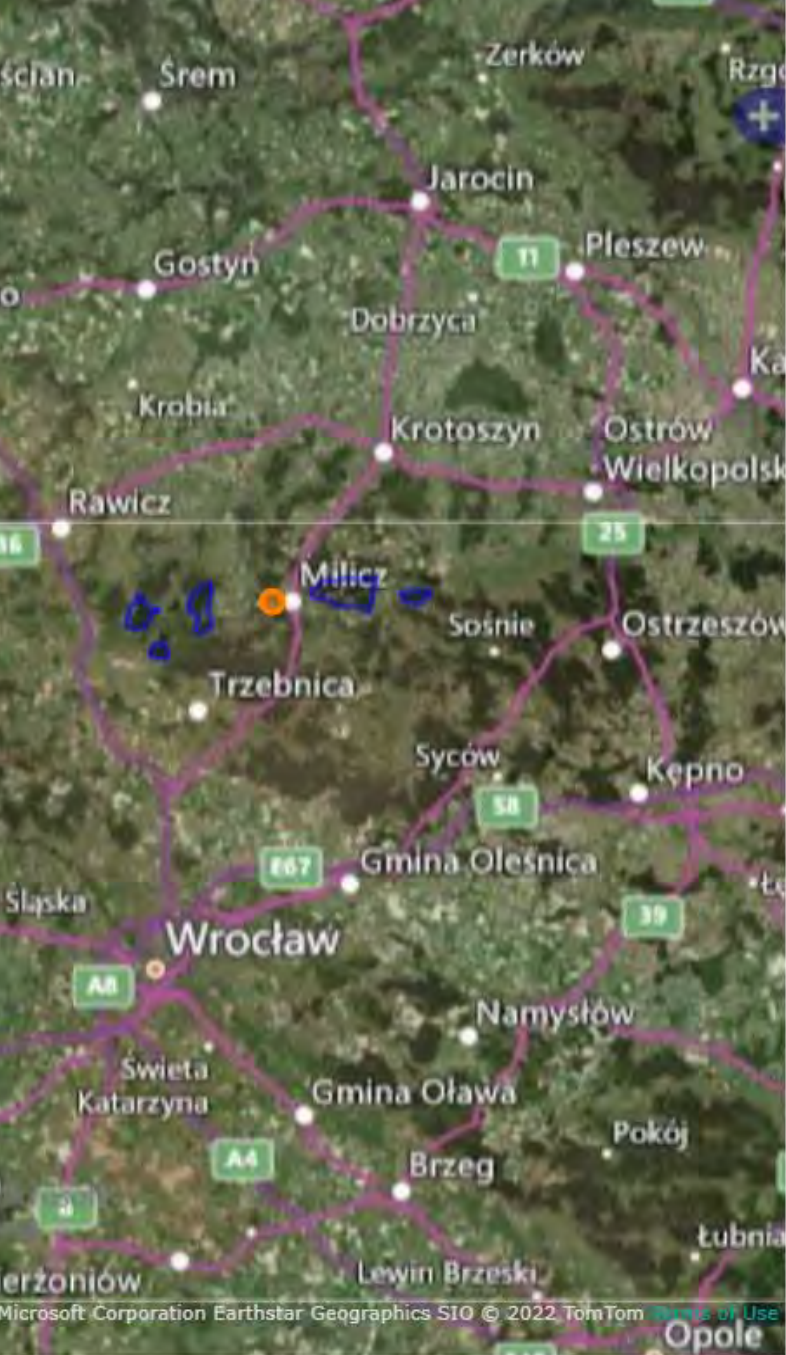


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Administrative region: Dolnośląskie



Fish ponds or bog ore mines?

1175 Bolesław Wysoki

Fish for lent or iron for prince

skilled metallurgists

the leading iron producers

Users of waterwheel for crushing, bellows
propelling and hammering

Cistercians , Cîteaux, eastern France.

1098 Benedictine monks => Cîteaux Abbey

Robert of Molesme, Alberic of Cîteaux ,

Stephen Harding, 1110 Bernard of
Clairvaux

(Woods, 2005)

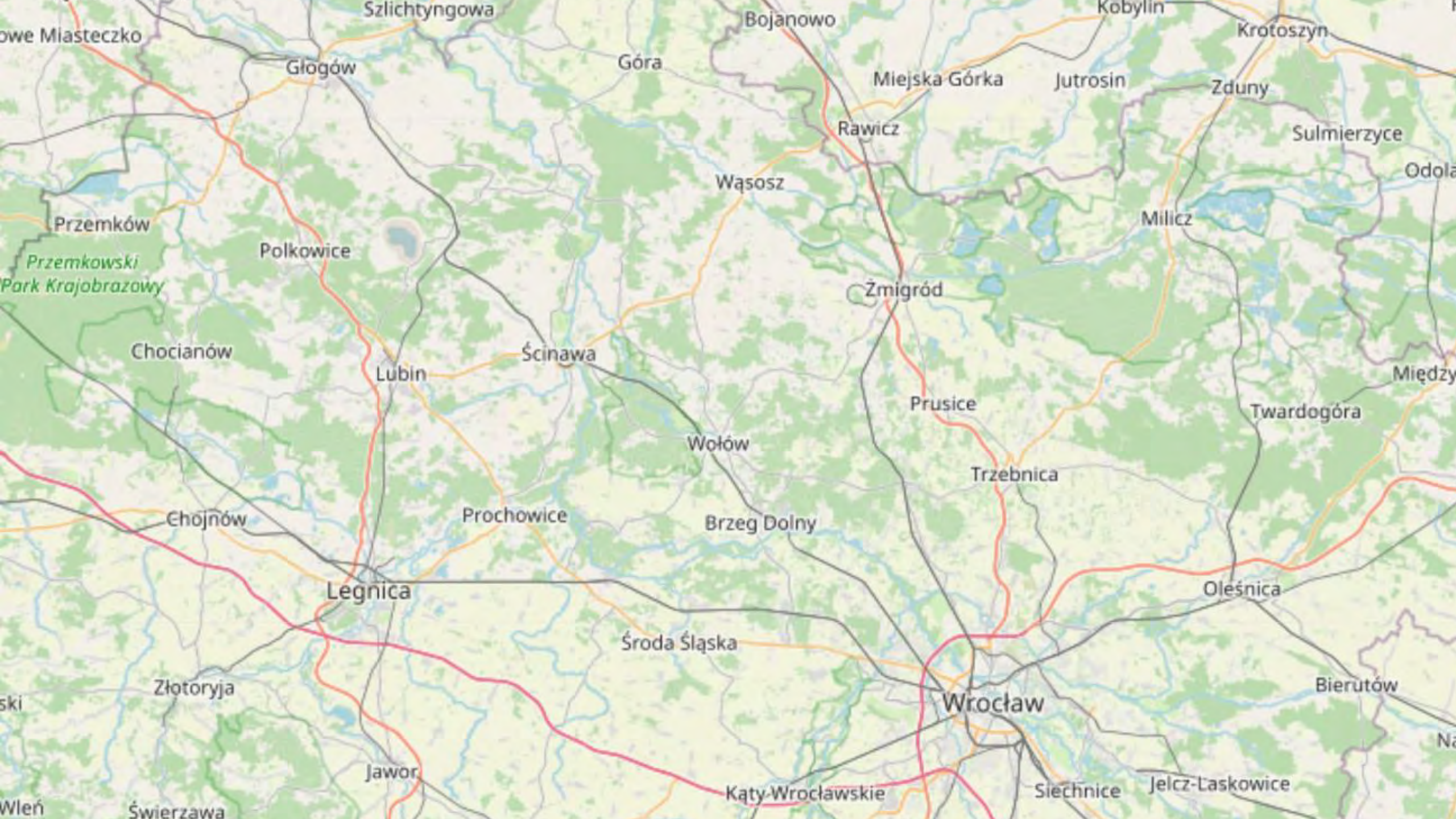
ora et labora

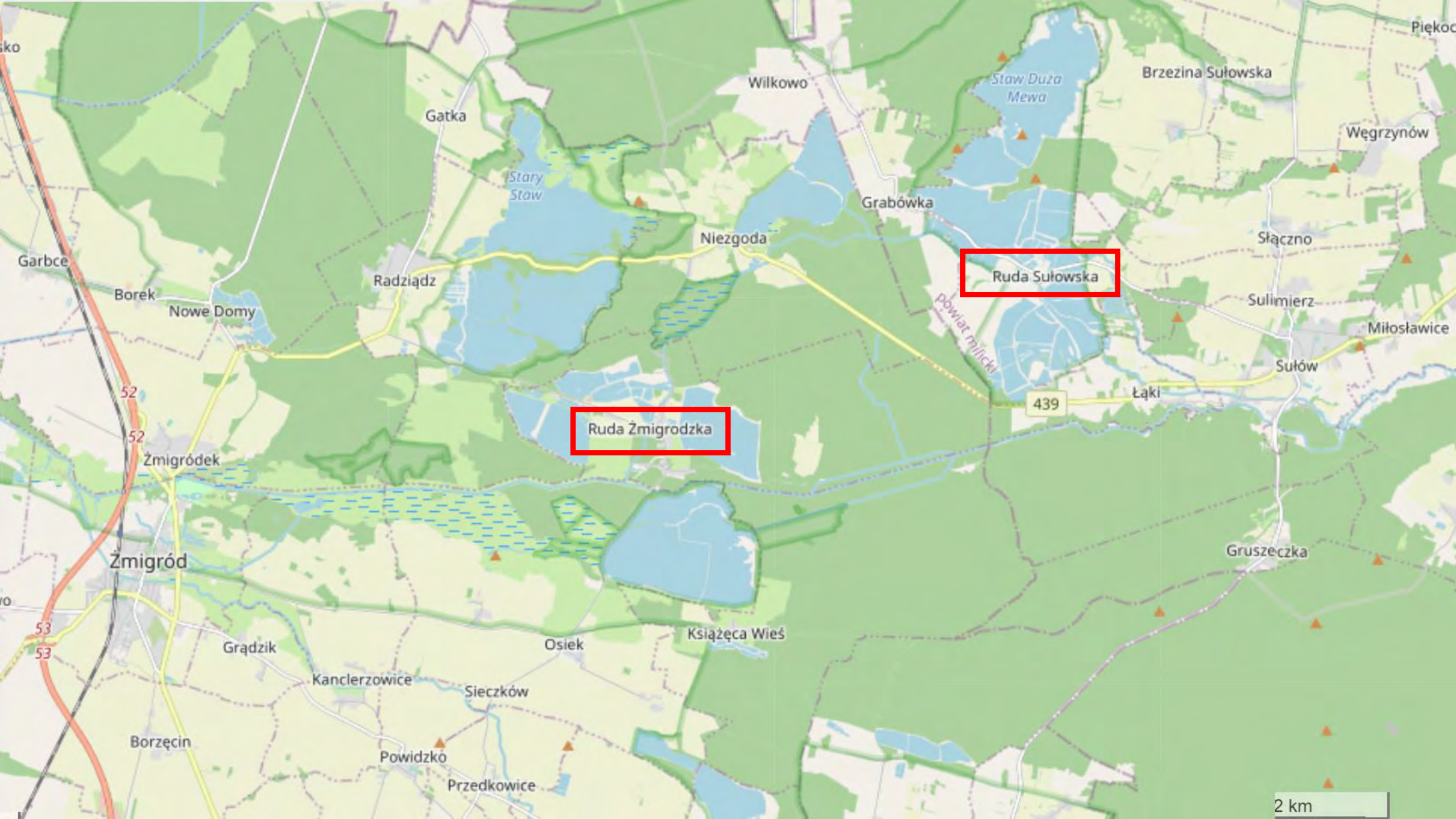
By Jörg Breu the Elder - The Yorck Project (2002) 10.000

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Ruda Żmigrodzka

Ruda Sułowska

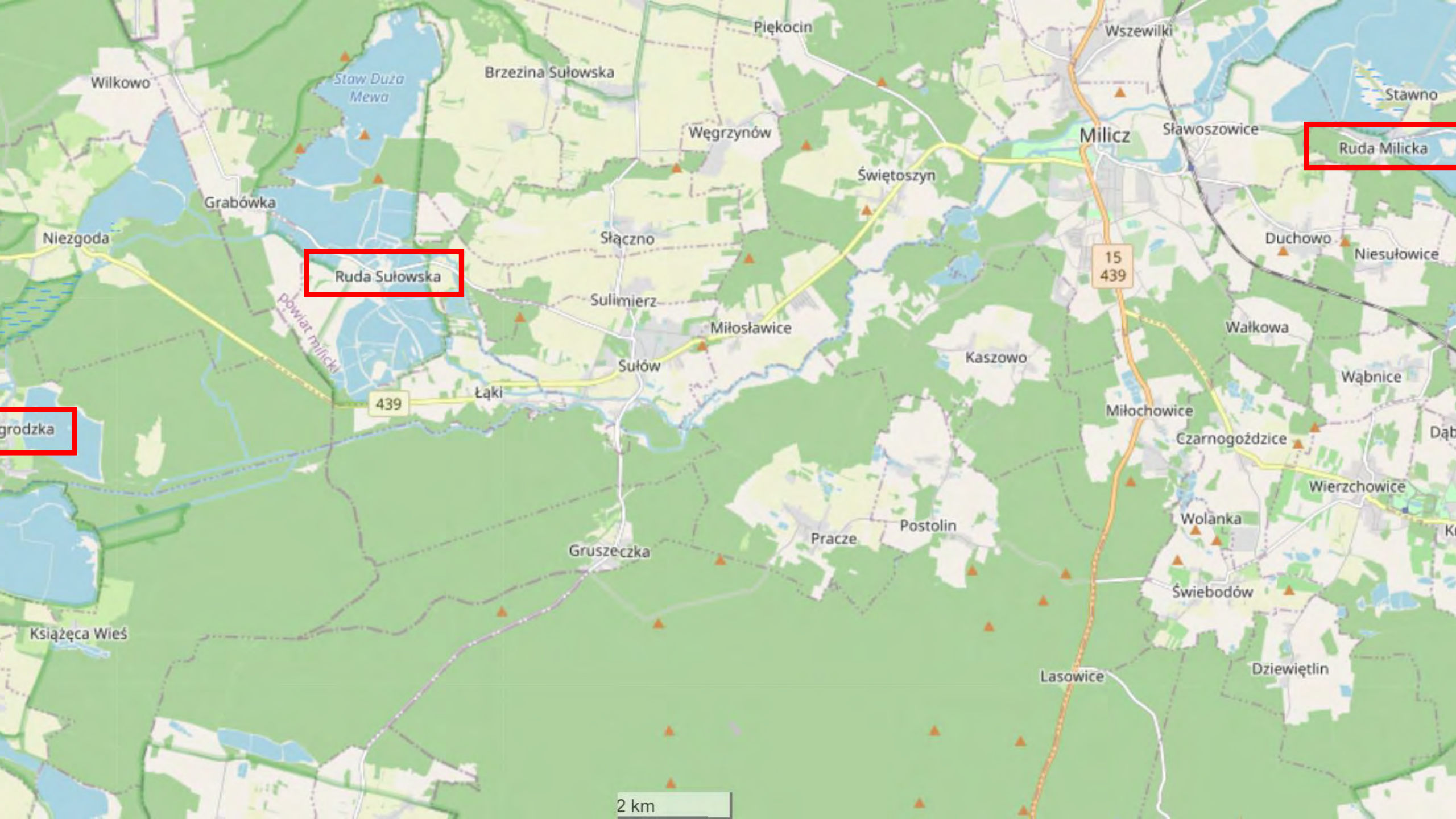
2 km



Ruda Sułowska

Ruda Żmigrodzka

2 km

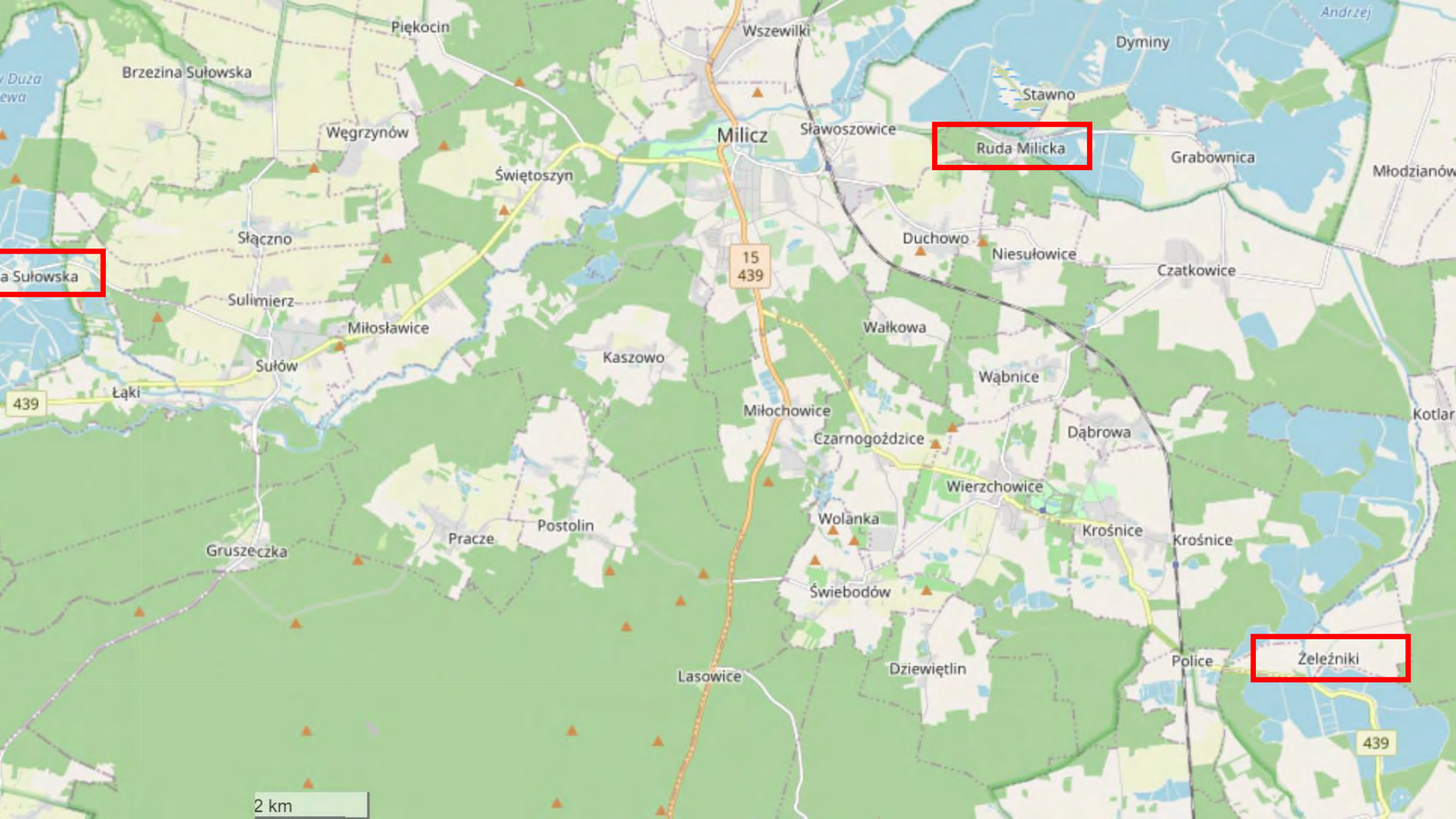


Grodzka

Ruda Sułowska

Ruda Milicka

2 km



a Sułowska

Ruda Milicka

Zeleźniki

2 km

15
439

439

Brzezina Sułowska

Węgrzynów

Milicz

Sławoszowice

Stawno

Dyminy

Grabownica

Młodzianów

Słaczno

Świętoszyn

Duchowo

Niesułowice

Czatkowice

a Sułowska

Sulimierz

Miłosławice

Sułów

Kaszowo

Wałkowa

Wąbnice

439

Łąki

Miłochowice

Czarnogoźdźce

Dąbrowa

Kotlar

Gruszczyka

Pracze

Postolin

Wolanka

Wierzchowice

Krośnice

Krośnice

Świebodów

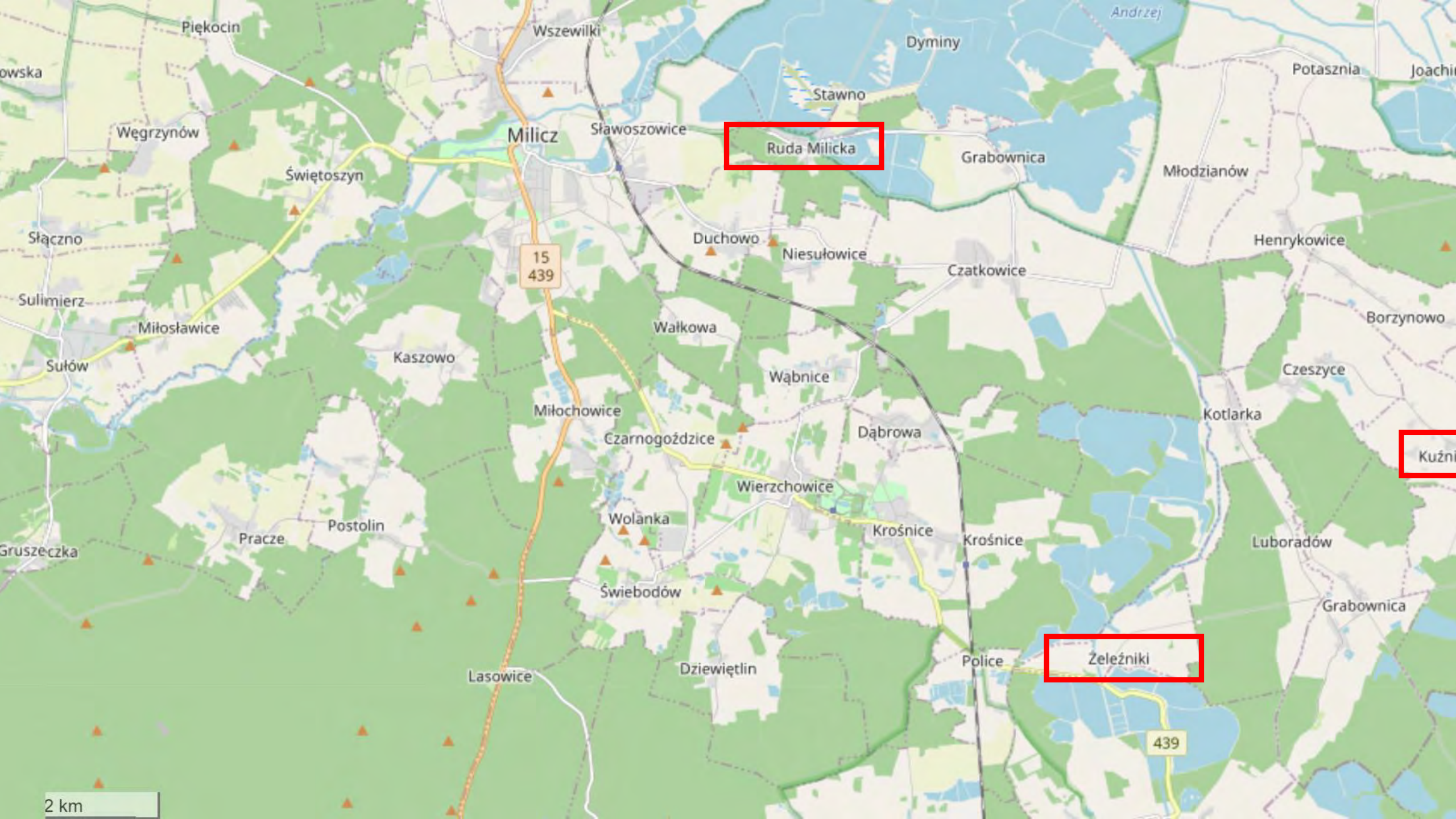
Lasowice

Dziewiętlin

Police

Zeleźniki

439

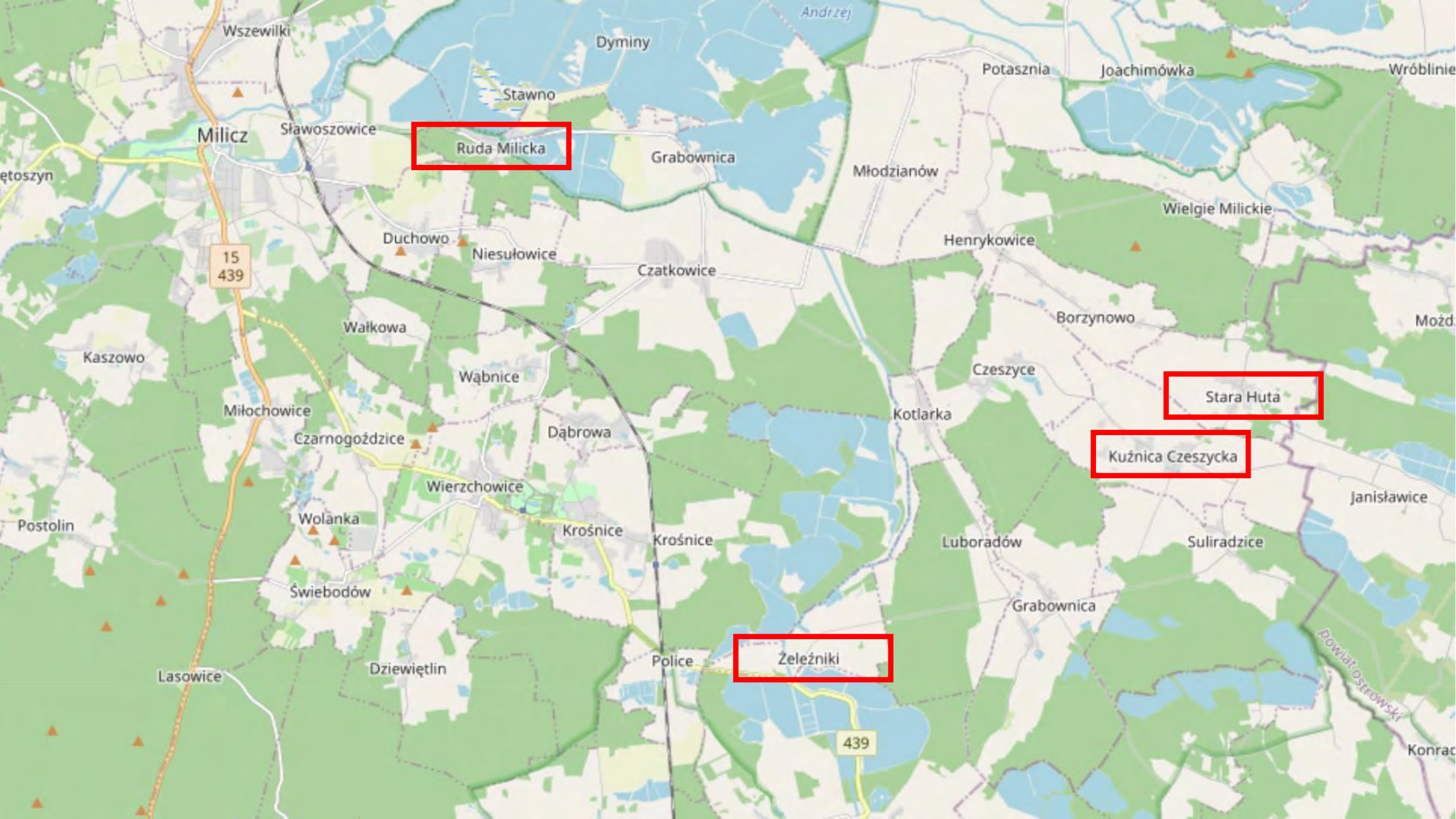


Ruda Milicka

Kuźnica

Żeleźniki

2 km

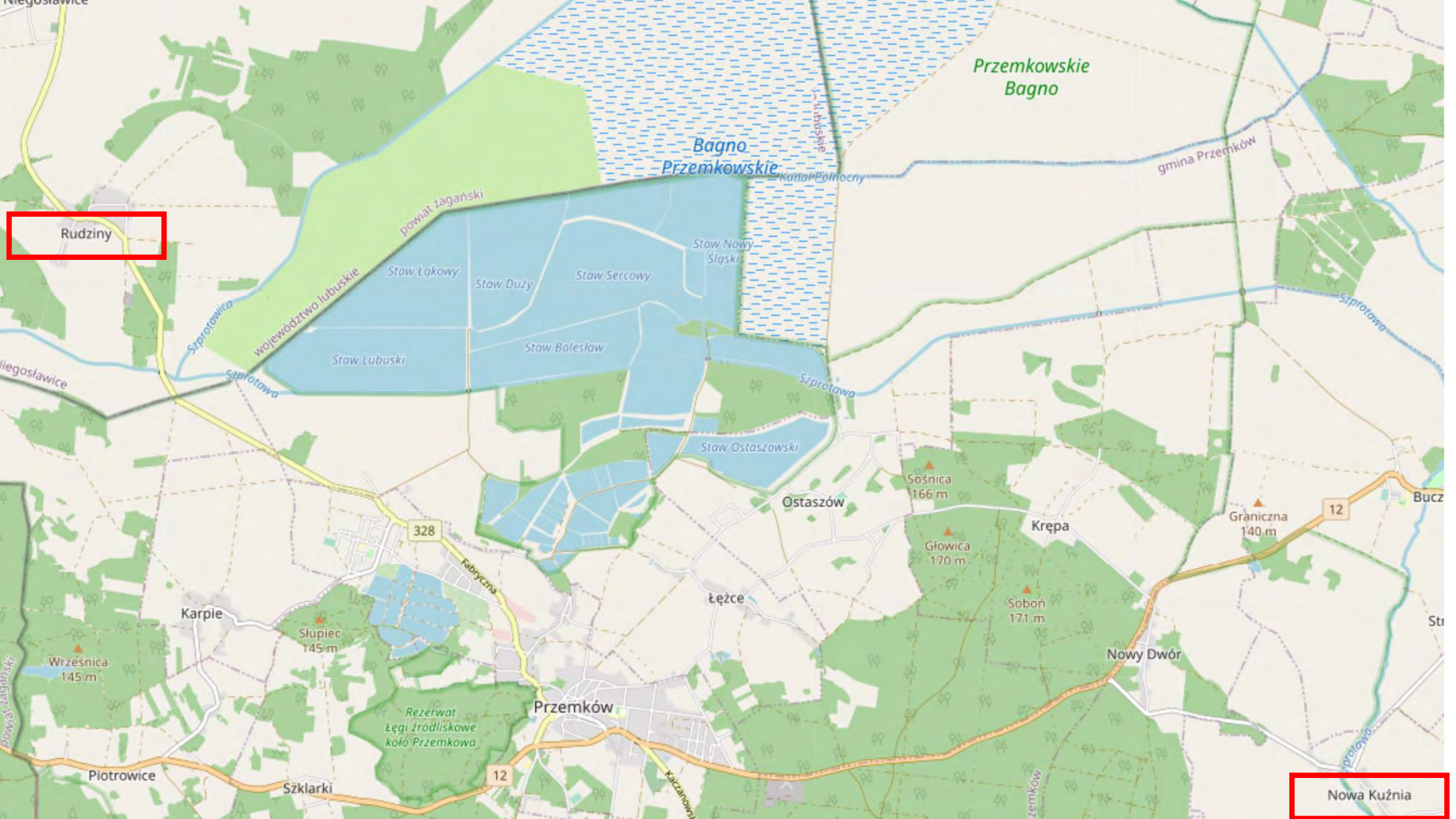


Ruda Milicka

Stara Huta

Kuźnica Czeszycka

Zeleźniki



Rudziny

Nowa Kuźnia



THANK YOU VERY MUCH FOR YOUR ATTENTION !

BASIC REFERENCES

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