



HISTORY OF GEOLOGICAL EXPLORATION AND EXPLOITATION OF URANIUM DEPOSITS IN SUDETES (SW POLAND)

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History of the exploration of uranium occurrences in the Sudetes

- ✓ **1853** – M. Websky describes a new mineral in the ore veins of the Miedzianka deposit – uranophane;
- ✓ **1912** – determination of uranium pitchblende in the Kowary deposit;
- ✓ **1926** – identification of large accumulations of uranium pitchblende in the „Wulkan” field of the Wolność Mine in Kowarach;
- ✓ **1943-1944** – the shipment of certain quantities of uranium ore from the Sudetes to the Berlin area for the recovery of radium;
- ✓ **1948-1971** - exploration work carried out by the Polish-Soviet enterprise Kowary Mines (Russian: "Kuznetskije Rudniki"), later renamed R-1 Production Plant (ZPR-1). After 1956, the Russians significantly reduced the number of their employees in Poland;
- ✓ **1948-1967** - exploitation of uranium ore (exclusively by the Russians);
- ✓ **1956 – 1988** - exploration of uranium ore deposits by PGI.

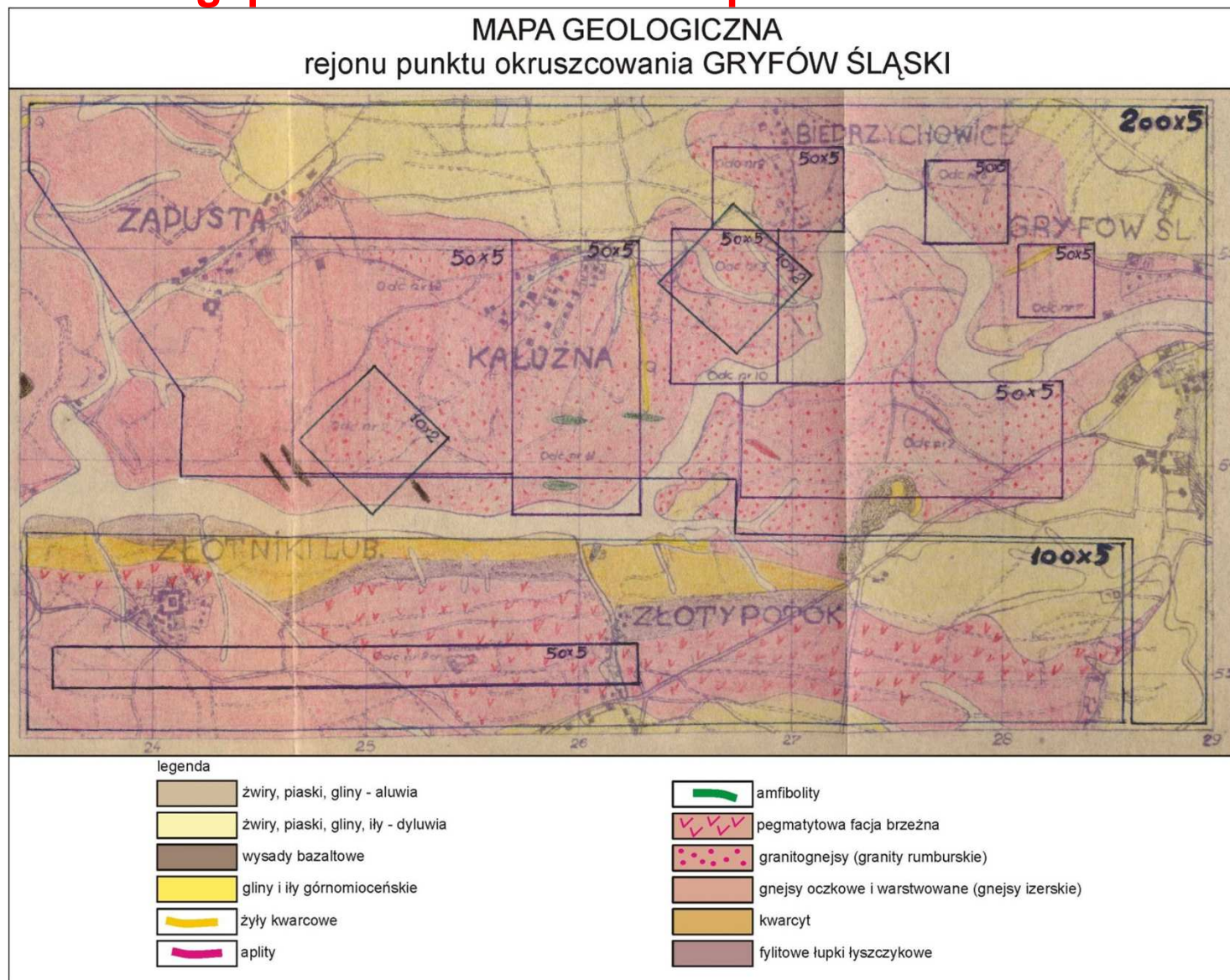


Methods and scope of research

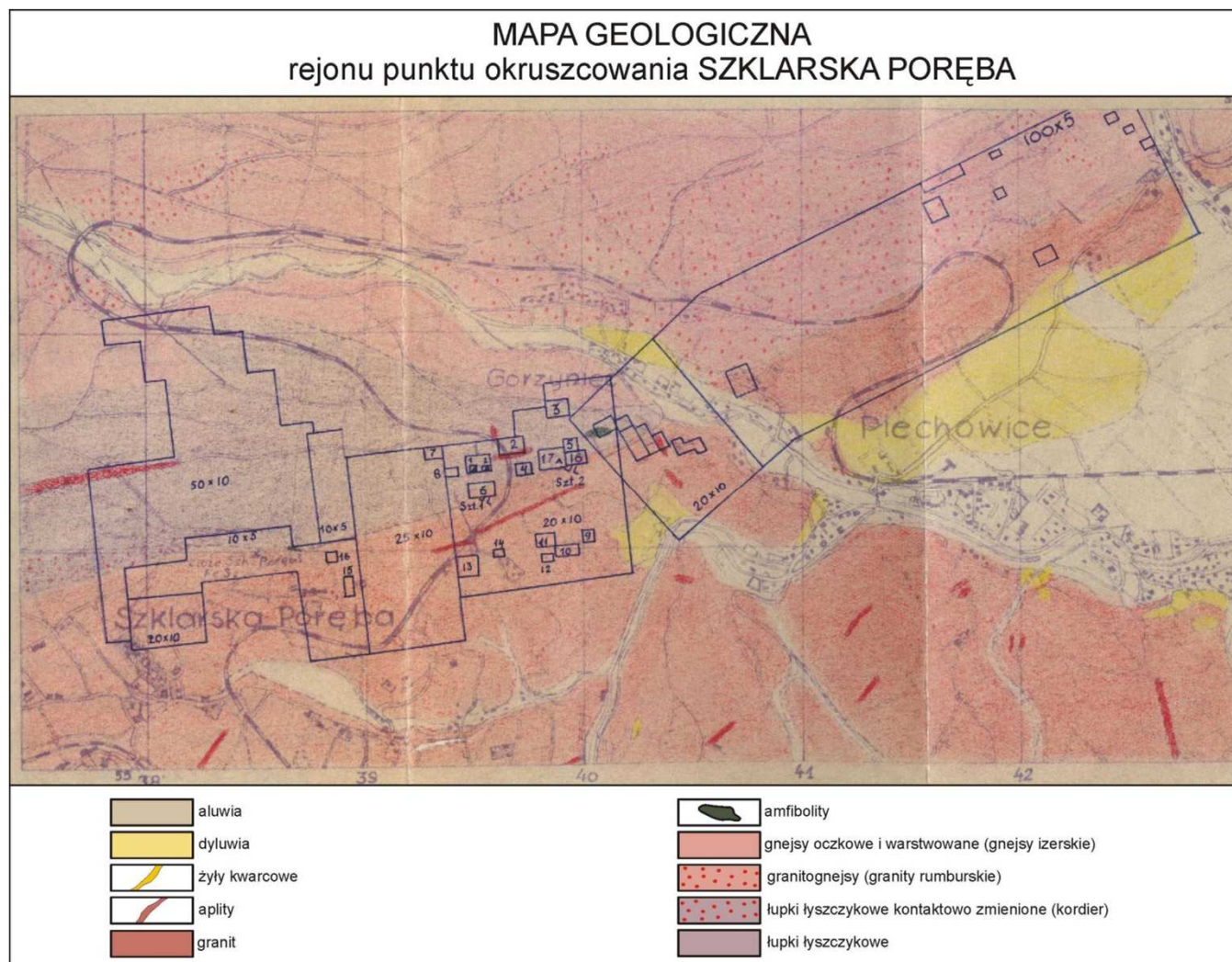
- ✓ radiometry;
- ✓ emanometry (radon measurements in soil gas);
- ✓ hydrochemistry;
- ✓ exploration trenches, adits and shafts;
- ✓ radiometric control of old mines and heaps;
- ✓ drillings;
- ✓ laboratory determinations.



Examples of geological maps of so-called uranium-bearing points with detailed exploration areas marked



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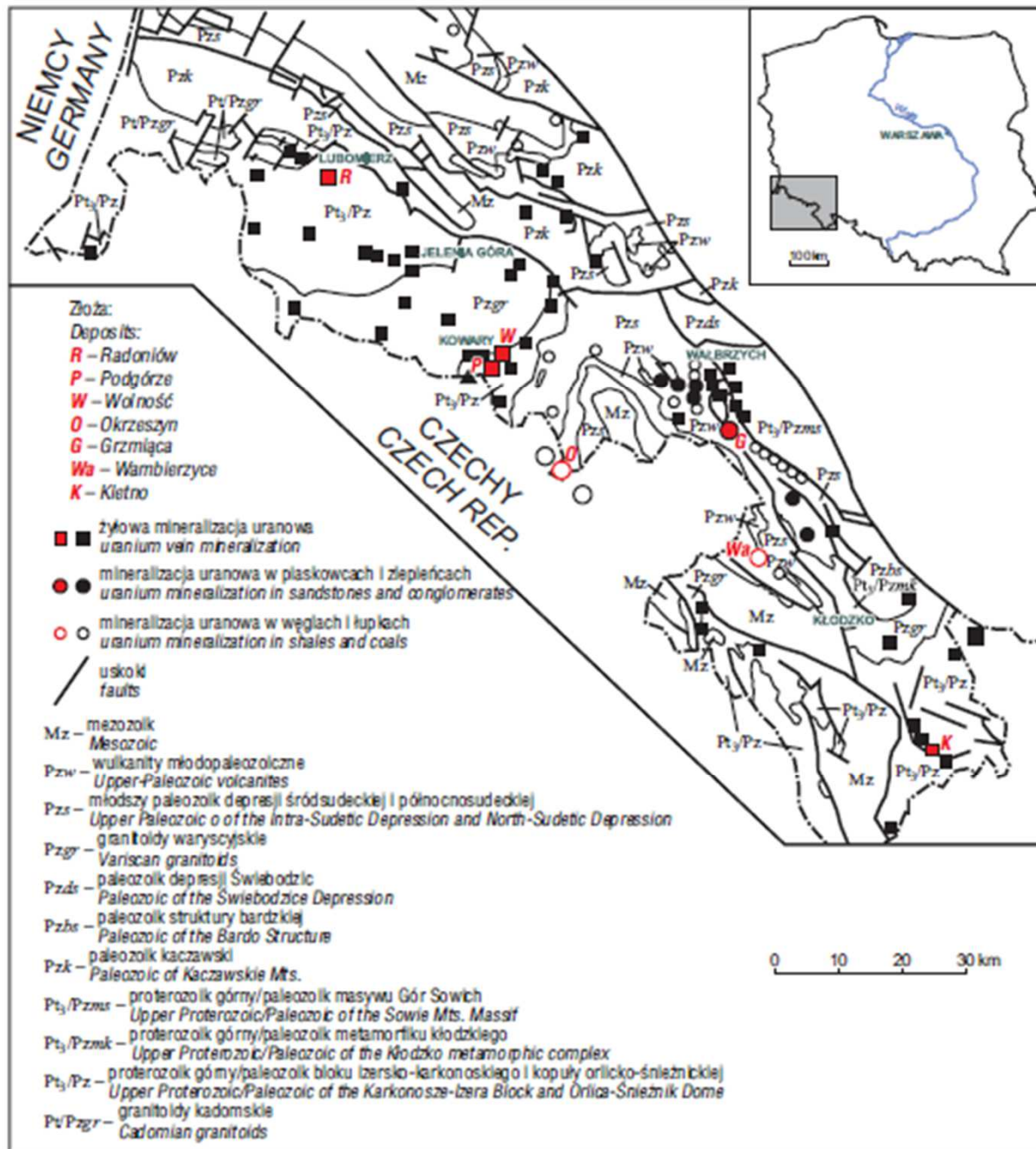


Uranium deposits and occurrences in Sudetes

According to a detailed study, Assessment of the uranium-bearing nature of the Sudetes (1959), based on Soviet archival material the Russians discovered more than 100 occurrences and deposits of uranium ore Sudetes.

The vast majority of these were not of economic importance. If any valuable mineralization was found, it was exploited in the course of exploration.

When leaving Poland, the Russians took almost all geological documentation and reports on their research to their archives.

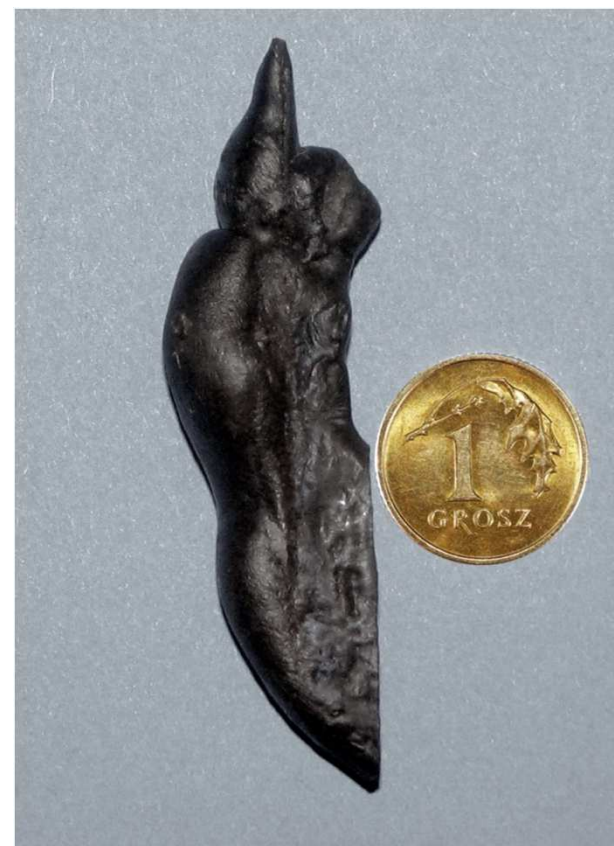


After Miecznik, Strzelecki, Wołkowicz, 2011.



How much uranium the Russians have extracted from deposits located in the Sudetes

Name of deposits	Extraction in Mg
Wolność (1948-1960)	94,003
Miedzianka (1948-1952)	14,967
Rubezal (1950-1954)	0,5455
Podgórze (1950-1958)	199,271
Wiktoria (1951-1952)	0,2827
Mniszków (1959-1951)	4,531
Wleń (1951)	0,3114
Radoniów (1954-1967)	342,00
Wojcieszyce (1951-1953)	15,879
Dzieńmorowice (1949-1952)	6,2115
Kozice (1959-1951)	0,187
Kopaliny (1948-1953)	20,713
Andrzejowa Góra (1959-1951)	0,0406
TOTAL	698,9427



According to arch. ZPR-1 in Kowary

How much uranium the Russians have extracted from deposits in the Democratic Republic of Germany

Tabelle 4: Die Uranproduktion der SDAG Wismut von 1946 bis 1990 (in t Uran)

Jahr	t	Jahr	t	Jahr	t
1946	17	1961	5 991	1976	6 695
1947	150	1962	6 371	1977	6 314
1948	321	1963	6 730	1978	6 158
1949	766	1964	6 983	1979	5 266
1950	1 224	1965	7 090	1980	5 245
1951	1 675	1966	7 070	1981	4 877
1952	2 199	1967	7 110	1982	4 622
1953	3 094	1968	6 948	1983	4 477
1954	3 967	1969	6 412	1984	4 426
1955	4 522	1970	6 389	1985	4 470
1956	5 157	1971	6 485	1986	4 086
1957	5 278	1972	6 627	1987	4 059
1958	5 302	1973	6 721	1988	3 924
1959	5 345	1974	6 777	1989	3 800
1960	5 356	1975	6 884	1990	2 972
Gesamtproduktion 1946 bis 1990: 216 352 t Uran					

After Barthel, 1993

Histogram of uranium mining in the former Democratic Republic of Germany

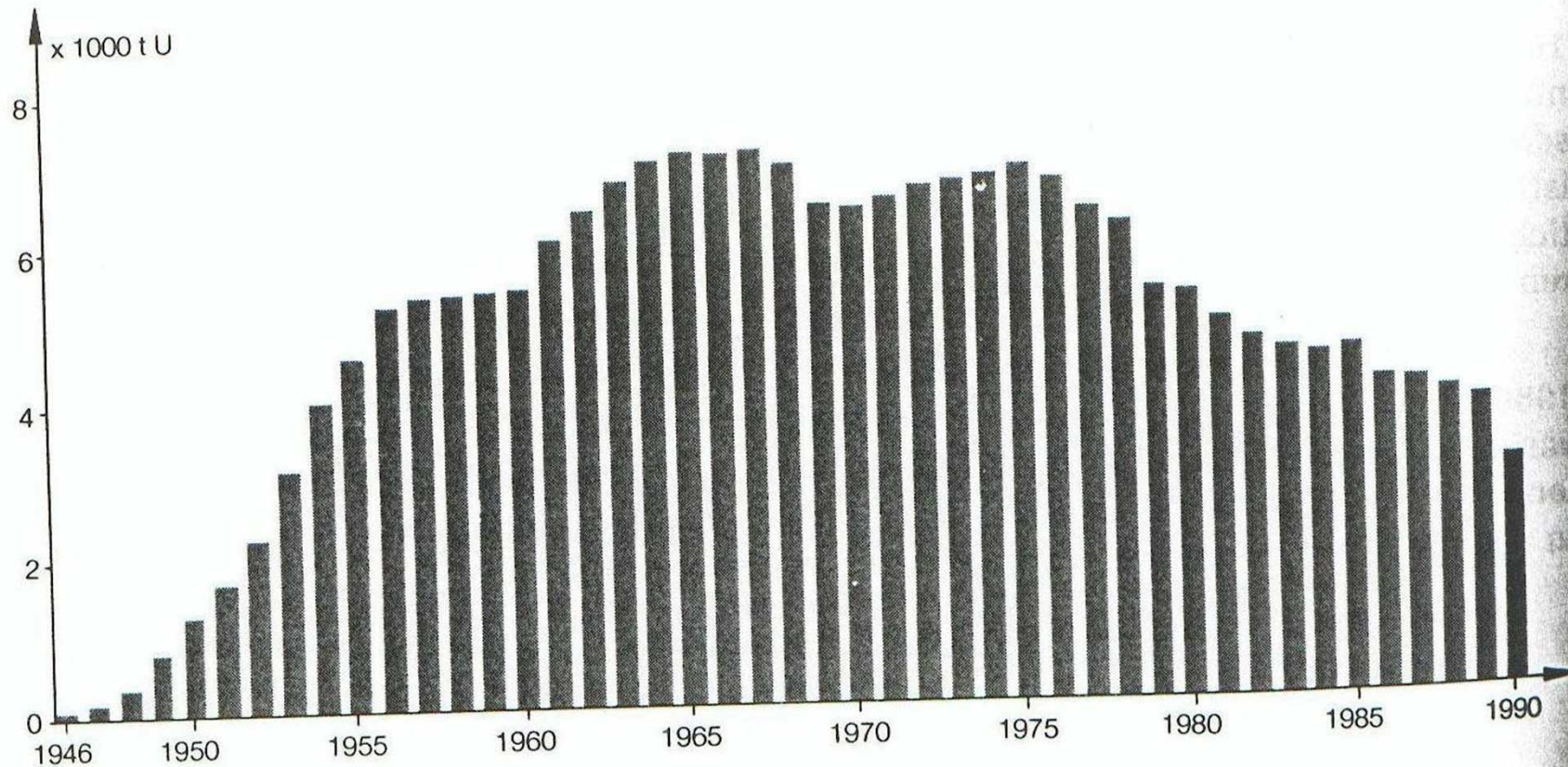


Abb. 2: Darstellung der Uranproduktion der Wismut.

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Why it is important to analyse data on global deposits of exploration commodities



The Copernicus Science Centre in Warsaw



To be able to assess the significance of the objects we study



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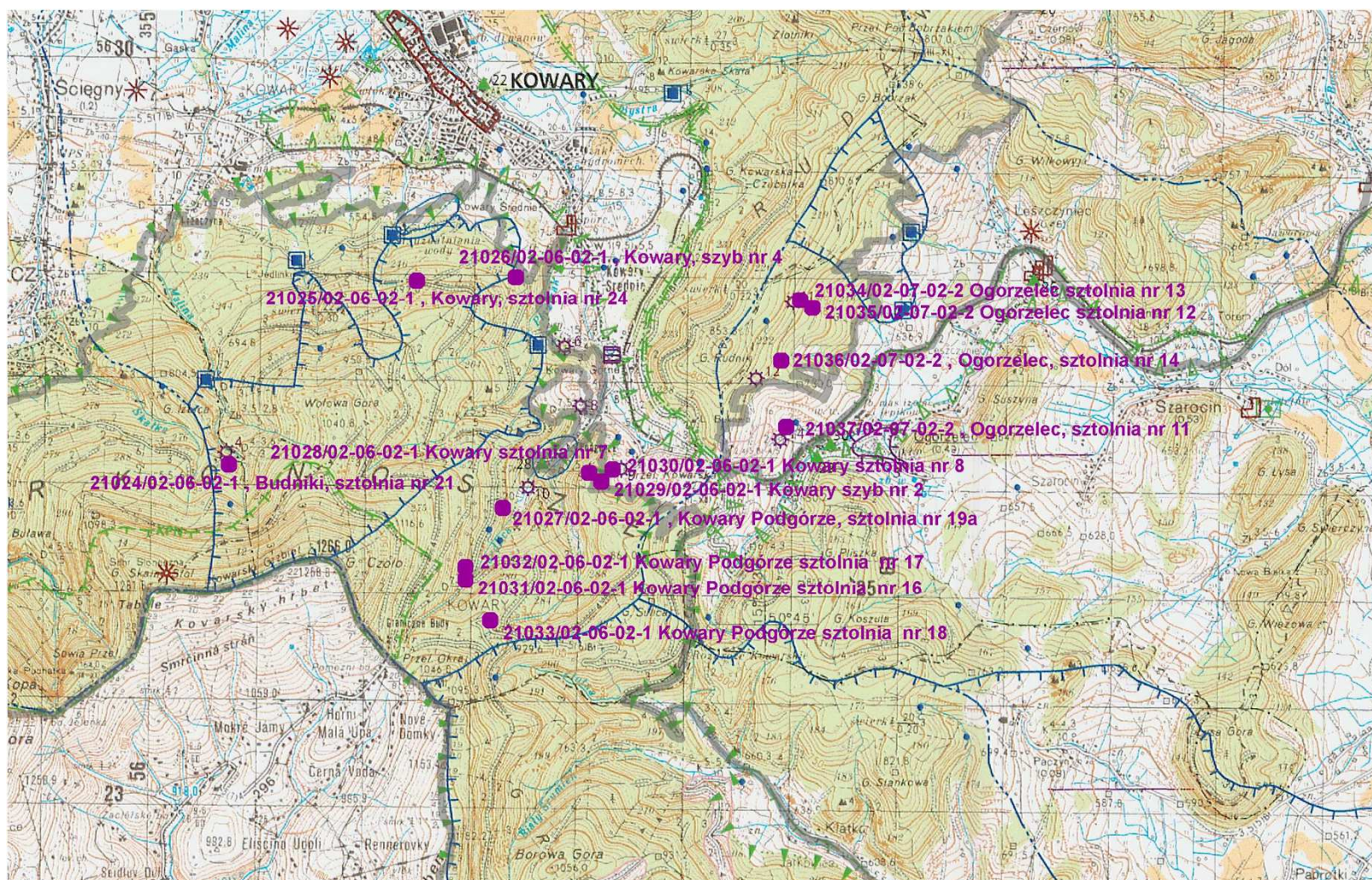


Remnants of uranium exploration and exploitation in the Sudetes

- ✓ **Post-uranium heaps:** more than 70 heaps of various sizes remain in the Sudetenland after exploitation and exploration for uranium ore, including about 50 exclusively related to uranium exploration;
- ✓ **The total area of the heaps is approximately 115,000 m²;**
- ✓ **The volume of rock deposited in the heaps is approximately 450 m³;**
- ✓ **The uranium resources located at the 5 largest (Podgórze Adit 19A, Radoniów, Wleń, Grzmiąca, Okrzeszyn) sites range from 12 to 30 tonnes of uranium.**

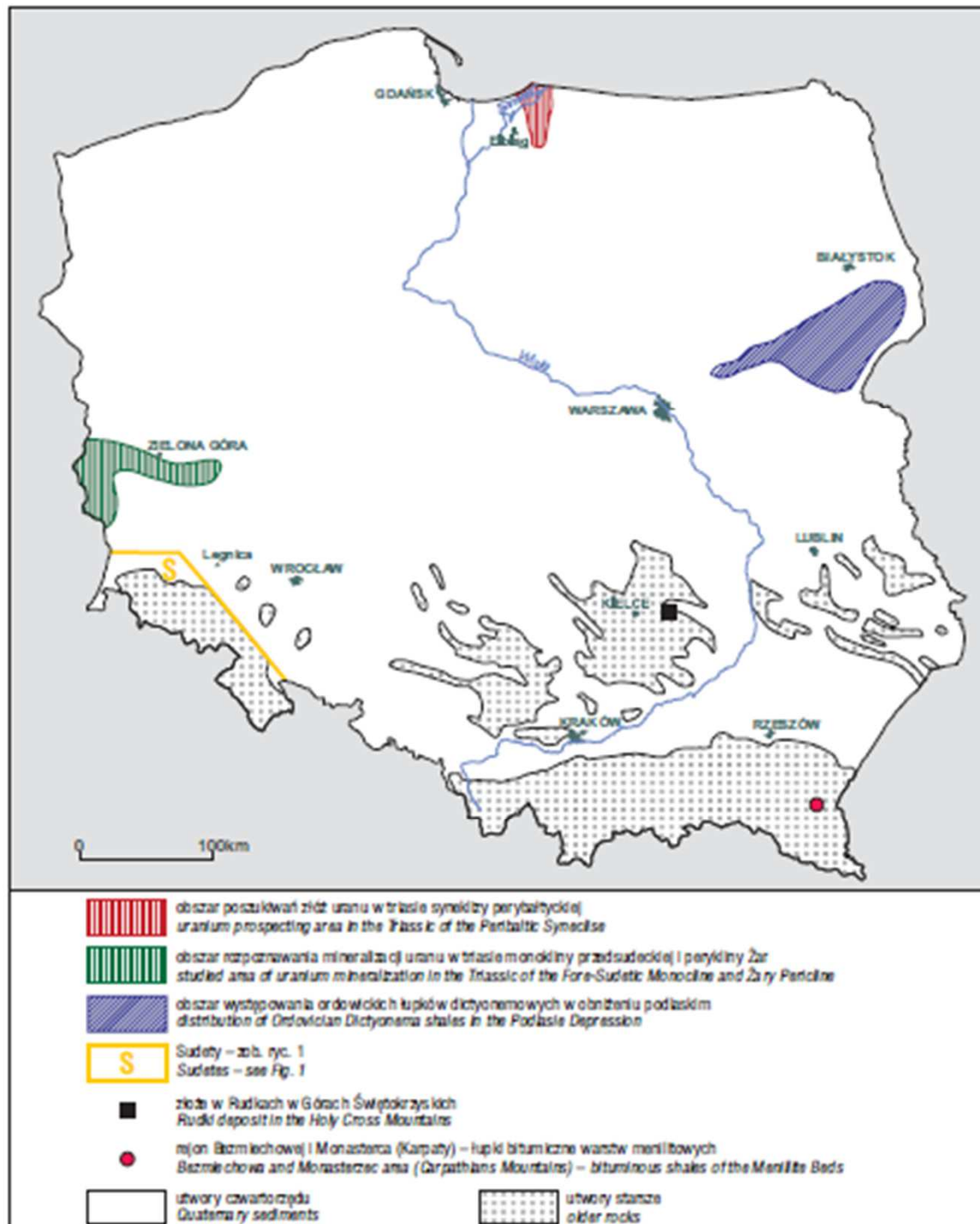


Location of waste dumps in the Kowary area in relation to protected areas



Selected areas of uranium prospecting in Poland

As a result of quite intensive exploration in 1960-1990, the occurrences of uranium mineralisation was found in sedimentary formations of the Polish Lowlands, mainly in the **Lower Ordovician Dictyonema shales** of the Podlasie Depression and in the **Lower Triassic sandstones** of the Peribaltic Syneclise.





Thank you for your attention

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