

River Drzewiczka, Poland

Location

The Drzewiczka basin is located in the centre of Poland. The river is a right side tributary of the Pilica river, which is a left side tributary of the river Wisła flowing into the Baltic Sea. The Drzewiczka basin, up to the gauging station Odrzywół, belongs to three administrative districts: Opoczyński (Łódź Province), Konecki (Świętokrzyskie Province) and Przysuski (Mazowsze Province).



Catchment description

The Drzewiczka catchment lies within 3 geographical macro regions (according to Kondracki's geographical division): Południowomazowieckie Hills, Przedborska Upland, and Kielecka Upland. Regarding structure, Południowomazowieckie Hills are characteristic for entire Middle-European lowland, built with drift clays, sands of glacial origin, and glacial-river sands. Przedborska Upland shows transitional character between lowland and upland landscapes. Opoczyńskie Hills, a part of Przedborska Upland, are built in general with jurassic rocks. Karst phenomena exist in this area, resulting in creation of sinks and sink-holes.

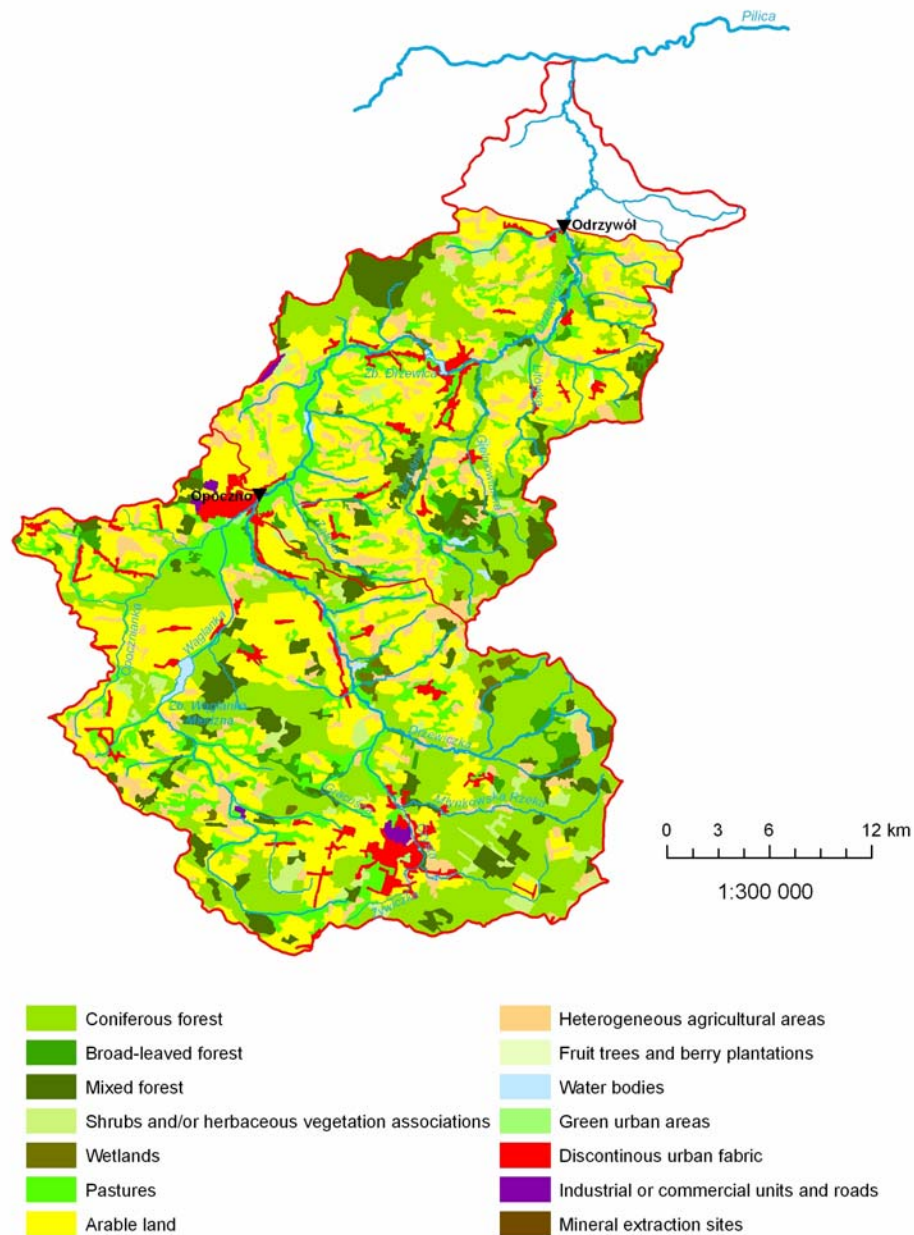


The dominant forms of land cover are forests (37,06%, mostly coniferous), arable land (33,85%) and pastures (11,33%). The areas of strong human impact and human-induced changes (discontinuous urban areas, industrial zones, commercial zones, roads, and open mineral extraction sites) form less than 5% of basin area (table below). Bigger towns are: Końskie, Gowarczów, Opoczno, Drzewica, Odrzywół, Białaczów, Gielniów. The basin population is about 108 300 and the population density is 101 individuals/km² (mean for Poland is about 124 individuals/km²).

Hydrological Observatory description

Key descriptors:¹

Catchment area	1007 km ²
River length	76 km
Average annual rainfall	550-700 mm
Average precipitation in winter season	200-250 mm
Average precipitation in summer season	350-500 mm
Average rate of solid precipitation in annual total	14-16 %
Average number of days with snow cover	70-80
Mean maximum water content in snow cover	30-50 mm
Mean specific discharge	4-6 l s ⁻¹ km ⁻²
Mean groundwater specific discharge: 2,0-2,5 l s ⁻¹ km ⁻²	
Rate of groundwater runoff in total runoff: 45-60 %	



¹ Based on *Atlas Hydrologiczny Polski* (1987)- Hydrological Atlas of Poland

Hydrological summary

The flow regime of the Drzewiczka river at Odrzywół station is quasi-natural. Typical periods of floods correspond with during thaw (months III-IV) and high rainfall (months V-VIII). Drought periods are typically in the summer (VI-VIII)

There are 2 reservoirs in Drzewiczka basin: reservoir Wąglanka-Miedzna situated on the Wąglanka river and reservoir Drzewica on Drzewiczka (table below).

Reservoir	Year of construction	Capacity (mln m ³)	Area (km ²)	Water level above sea level (m)
Zb. Wąglanka-Miedzna	1979	4,17	1.85	195,95
Zb. Drzewica	1939	1,5	0.81	161,5

Data availability

- Two gauging stations: Odrzywół is a telemetric station that opened in 1951. Its catchment area is 1006,8 km². Opoczno is gauging station with a catchment area of 608.1 km². the latter station opened in 2005.
- Three meteorological stations: Końskie, Opoczno i Odrzywół. 11 meteorological stations in the neighborhood (see table and figure below)
- Water quality data: Water pollution levels were measured at several measurement-control sections in the period 2000-2009 within the regional monitoring program carried out by Voivodeship Inspectorates of Environmental Protection (VIEP). Some earlier data can also be made available. The program covers about 20 essential water quality parameters.

Hydrological Observatory description

Table. Meteorological stations in and near Drzewiczka catchment

Name	Basin	Year ²	Data available from the period ³	Type ⁴
CHEŁSTY	PILICA	1949	1951-2008	O
KOŃSKIE	PILICA	1946	1951-2008	O
MROCZKÓW	KAMIENNA	1956	1981-2008	O
ODRZYWÓŁ	DRZEWICZKA	1956	1968-2008	O
OPOCZNO	DRZEWICZKA	1961	1968-2008	O
RUSZKOWICE	RADOMKA	2002	2002-2008	O
RZUCÓW	RADOMKA	1956	1995-2008	O
SADKOWICE	PILICA	1955	1956-2008	O
SŁOWIKÓW	RADOMKA	1955	1991-2008	O
STANOWISKA	PILICA	1956	1987-2008	O
WŁOCHÓW	PILICA	1972	1987-2008	O
WÓLKA JAGIELCZYŃSKA	RAWKA	1961	1965-2008	O
SULEJÓW	PILICA	1961	1962-2008	S
TEOFILÓW	PILICA	2002	2002-2008	O

Value to network

The Drzewiczka observatory provides data on a catchment with a geology, meteorology, and degree of human influence that is very typical and representative for middle European lowlands.

References

- 1) *Atlas hydrologiczny Polski*, (Hydrological Atlas of Poland) 1987. Instytut Meteorologii i Gospodarki Wodnej, Wydawnictwa Geologiczne, Warszawa.
- 2) *CORINE Land Cover 2006*
- 3) Kondracki J., 2001, *Geografia regionalna Polski*. (Regional geography of Poland) Wydawnictwo Naukowe PWN, Warszawa.
- 4) *Mapa Podziału Hydrograficznego Polski*, (Map of hydrographical division of Poland) wykonana przez Ośrodek Zasobów Wodnych Instytutu Meteorologii i Gospodarki Wodnej na zamówienie Ministra Środowiska i sfinansowana ze środków Narodowego Funduszu Ochrony Środowiska i Gospodarki Wodnej.

² According to Network Management System

³ According to Central Historical Data Base

⁴ O – 5th level station; S – 1st level station