

# Research on the water quality of selected springs in the Kraków-Częstochowa Upland and Rybnicki Plateau

## INTRODUCTION

A **spring** is a spontaneous, natural, concentrated outflow of groundwater on the surface or at the bottom of a water reservoir. Occurs where the ground surface intersects an aquifer or a static mirror groundwater. It is a manifestation of natural-groundwater drainage.

The **Cistercian Landscape Compositions Park in Rudy Wielkie** is a unique place that combines history, culture and the beauty of nature. It is a park located on the site of the former Cistercian monastery in Rudy Wielkie. Cistercian Landscape Compositions are a collection of various landscape elements that have been arranged in accordance with the principles of garden art and landscape architecture. This park is characterized by a wealth of vegetation, a system of ponds, alleys, gardens and historic buildings that give it a unique character



## Jurassic Sources



Zygmont and Elżbieta Source's



Pani Halska Source

The Jurassic limestone formations of the **Kraków-Częstochowa Upland** represent a unique geological phenomenon. These intricate karst structures, shaped by limestone erosion, provide valuable insights for geologists. Research into karst processes and their impact on the terrain is crucial for understanding the geological history of this area. The Kraków-Częstochowa Upland serves as a captivating labyrinth of rocky formations, attracting scientists from around the globe.



**Karst processes** involve the dissolution of soluble rocks like limestone by acidic water, forming unique landforms such as caves, sinkholes, and disappearing streams and spring. Karst sources are where groundwater emerges from underground in karst landscapes, typically as springs. They provide freshwater to ecosystems and human communities in karst regions.

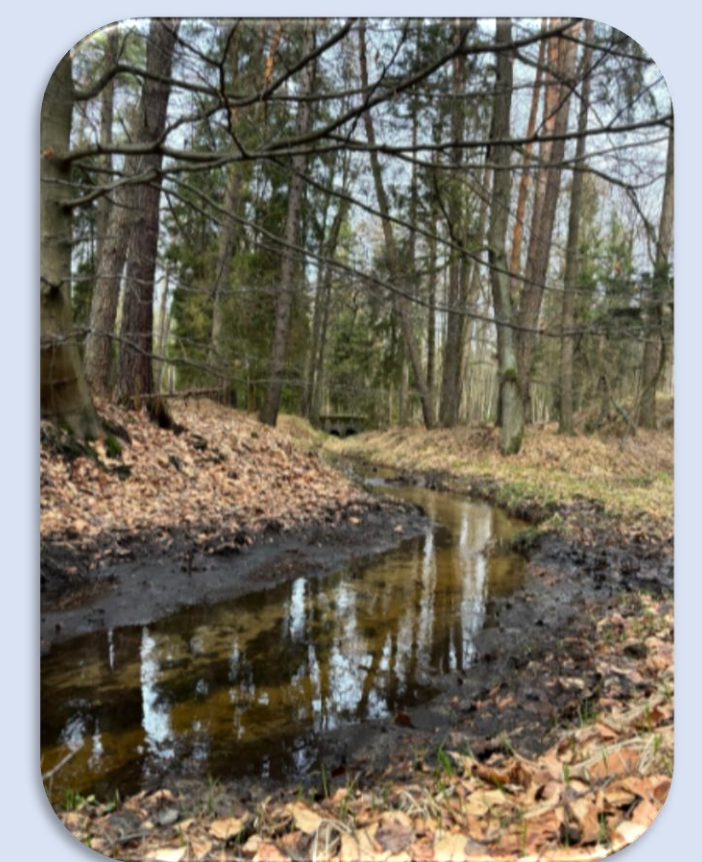
## PURPOSE OF THE WORK

The **purpose of the work** is to analyse the quality of spring waters to see if they meet the drinking water standards (WHO). In pagan times, the springs were considered holy waters and to this day are known for their crystalline water and healing properties. Many people use spring water for food. On the basis of several of the most visited springs in the Silesian Voivodeship, a detailed hydrochemical analysis is carried out in order to show the true quality of these waters. Will it be counted as drinking water? On the contrary, will they be harmful to our body?

## Rybnicki Plateau and Niecka Kozielska

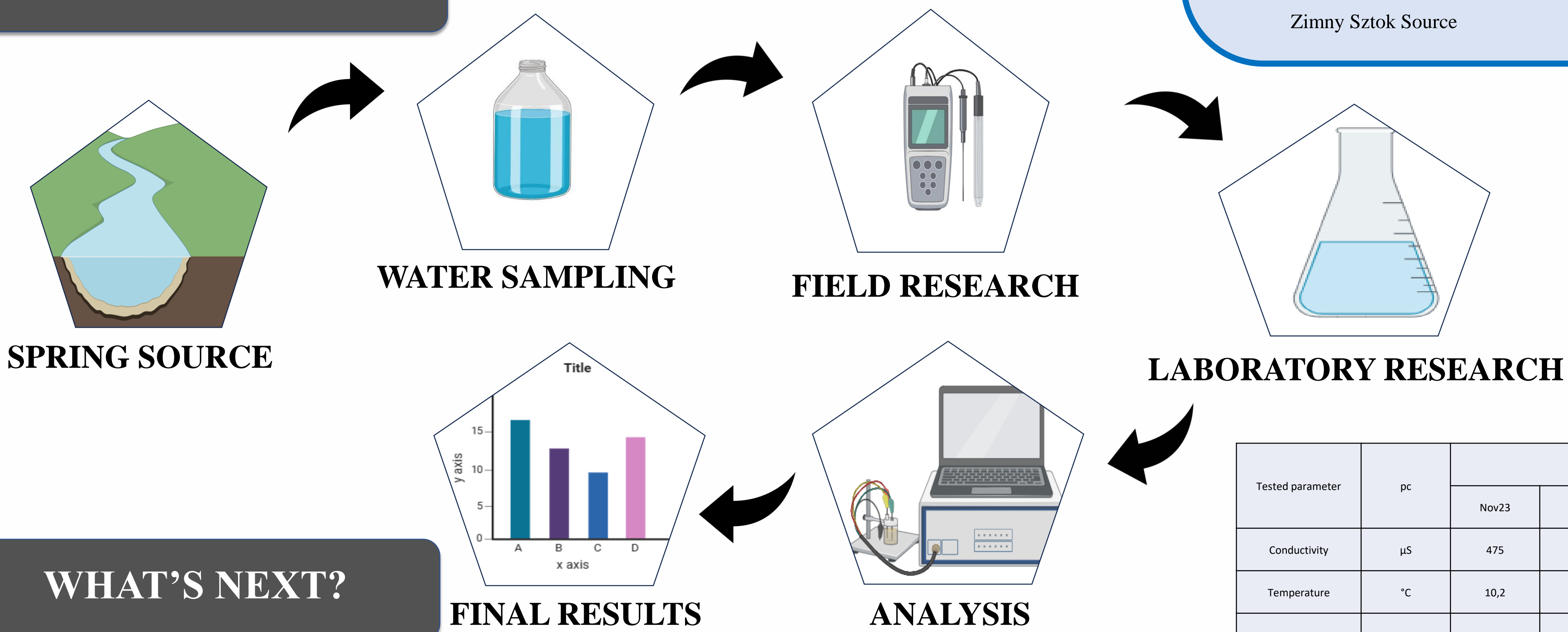


Zimny Sztok Source



Obrozek Source

## REASERCH METHODS



## WHAT'S NEXT?

Until the end of the 2024 hydrological year, we will perform field measurements every quarter and send samples to the laboratory. After the latest tests, we will perform a detailed analysis of all the collected results and we will be able to draw clear conclusions - what is the quality of the tested waters and how their condition changes depending on the season.

## LABORATORY RESEARCH

Tested parameter	pc	Results			
		Nov23	Feb24	May24	Aug24
Conductivity	µS	475	495		
Temperature	°C	10,2	9,9		
Dissolved oxygen	mg/l	7,8	5,3		
Dissolved oxygen	%	74	48		
pH	pH	6,8	7,08		
Efficiency	l/s	/	/		