

# **WATER MONITORING OF IKPOBA RIVER SOUTHERN NIGERIA**

**CARRIED OUT BY**

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**IN PARTICIPATION IN THE 2006 WORLD WATER MONITORING DAY**

**WATER MONITORING KITS PROVIDED BY THE INTERNATIONAL WATER  
ASSOCIATION AND WATER ENVIRONMENT FEDERATION**

## **Introduction**

Ikpoba River is a fourth order stream situated within the rainforest belt of Edo State, southern Nigeria. The River rises from the Ishan Plateau in the northern part and flowing in south westerly direction in a steeply incised valley and through sandy areas before passing through Benin City and joining the Ossiomo River.

Edo State lies roughly between longitude 06o 04'E and 06o 43'E and latitude 05o44' N and 07o34' N. Edo State has a tropical climate characterised by two distinct seasons: the wet and dry seasons. The wet season occurs between April and October with a break in August, and an average rainfall ranging from 150 cm in the extreme north of the State to 250 cm in the south. The dry season lasts from November to April with a cold harmattan spell between December and January. The temperature averages about 25 °C (77 °F) in the rainy season and about 28 °C (82 °F) in the dry season. The climate is humid tropical in the south and sub-humid in the north.

Ikpoba River is highly disturbed while passing through Benin City due to the high population density and the dependence on the stream. Victor and Dickson (1985) reported that in the upper reaches of the stream, it flows through a dense rainforest where surface run-off and organic matter from the surrounding vegetation contribute to organic input. At the outskirts of the city, riparian settlements are thinly populated, so that disturbance due to human activities is low and localized

The river is particularly important to the people of Benin City. One of the major dams in the Edo State was constructed across the river in Okhoro Community. The name of the dam is Okhoro Dam. The dam was built mainly for water supply and is used by the Edo State Urban Water Board to supply pipe-borne water to some parts of Benin Metropolis. Down stream riparian communities depend on the river for water used for various domestic purposes. Car washing companies are also attached to the river in Benin City. Industrial effluence and water from drainage channels are discharged into the river at various points.

## **Description of Sampled Locations**

Site 1: The first site where data were collected is located at about 100m upstream Okhoro Dam. At this point, a major drainage system draining Benin Metropolis empties into the river.

Site 2: The second site where data were collected is at the Ikpoba Bridge along Ikpoba Slope Road. This location is at the downstream section of the Okhoro Dam. Human activities in this location at the stream are high.

## Results

	Site 1	Site 2
Air Temperature	36° C	34° C
Water Temperature	30° C	26° C
Dissolved oxygen	8ppm	8ppm
% Saturation	106	99
pH	6	7
Turbidity	40 JTU	40 JTU



At site 1, the speed of the water was low. A large part of the width of the river was covered with grasses. This could be due to the high level of silt being deposited in this area because blockage caused by the presence of the dam. This result in decrease in depth as a result of silt deposition and the slow-flowing/absent of water current encourages the growth and proliferation of aquatic plants. This collaborated by the findings of Ogbeibu and

Oribhabor (2001). Also at this location, large amount of municipal waste is being deposited into the river from a drainage channel that runs along Okhoro Road. This explains the low pH of 6 recorded at this site. Decomposing organic mater reduces the pH aquatic systems, that is, they become acidic. The water temperature was higher at site one, which may be due to presence of the dam and the high deposit of municipal waste in this location.



The river flowed faster in site 2 than site 1. Human activities in this location were higher. Car washing companies depending on the river and discharging their effluents into the river were present here. Also, a major abattoir is located nearby and those who patronize the abattoir wash their meat at this location. Children were also seen taken their bath and swimming at this point. Compared to location 1, the air and water temperature was



lower. But the pH recorded here was 7 suggesting that it was neither acidic nor basic.

### **Conclusion and Recommendations**

The monitoring shows that the Ikpoba River has been affected adversely by human activities and has affected the water quality, which is dangerous to riparian communities and the aquatic fauna and flora. It is recommended that:

1. Detailed research is needed to appraise the level damages that been done to the Ikpoba River resulting anthropogenic activities
2. There is need for government to put the right policies in place to protect further damage to the river

### **References**

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### **Acknowledgements**

We are grateful to the International Water Association and the Water Environment Federation, the coordinators of the World Water Monitoring Day for providing the monitoring kits for the exercise.