VARIATION ON WATER QUALITY INDEX IN WATERBODIES INTERCEPTED BY BRIDGE CONSTUCTION ON BR-319 HIGHWAY (MANAUS/PORTO VELHO)

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Introduction

The environmental laws on Brazil demands a prior study for licensing new ventures

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Bascic Programs that will gide the studies during the construction of new ventures

Some ventures do not go trough this process

A legal provision ensures that the environmental agency has control over the licensing

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Term of Commitment

BR-319

Introduction

This kind of environmental licensing includes the monitoring of water bodies to measure direct impacts

In case of road projects may be required the monitoring of the water quality

In that sense, the Water Quality Index (WQI) provides an easy way to interpret the general condition using the following parameters:

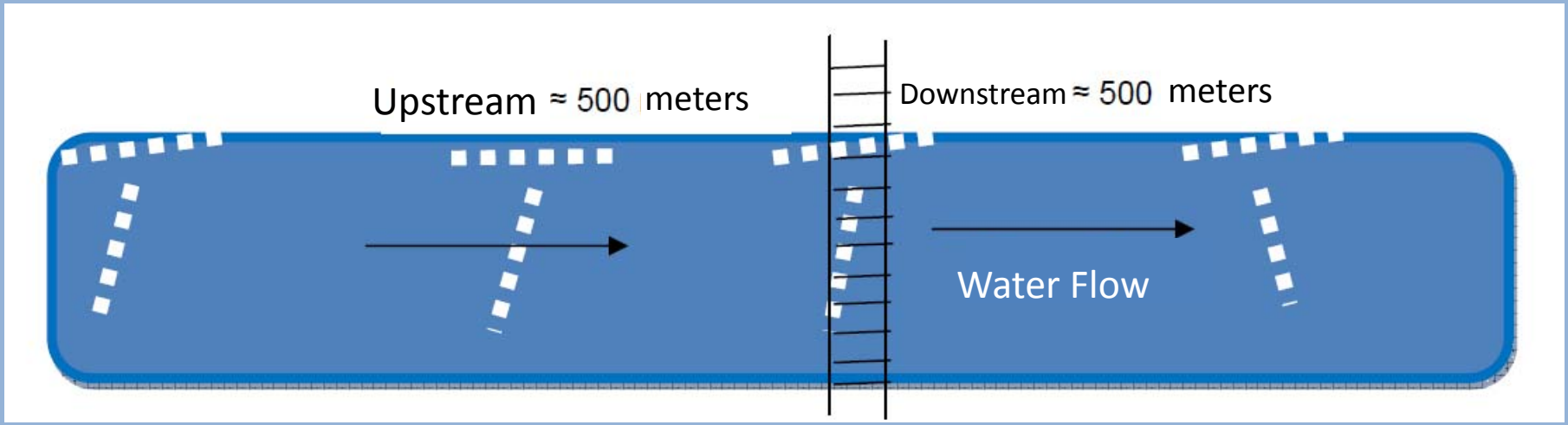
- Water temperature variation
- pH
- Dissolved oxygen
- Biochemical demand of Oxygen
- Total dissolved nitrogen
- Total Phosphorous
- Total Solids
- Turbidity
- Termotolerants coliforms

Introduction

On our work the WQI was used to evaluate the water quality on the bridge construction over the Castanho and Tupana rivers (Careeiro da Várzea/AM) and Retiro and Bom Futuro Igarapés (Humaitá/AM)

Methodology

All the samples were collected on three points on each bridge: Axis of the bridge, on the upstream of this axis and on downstream of the axis on July 2009 and July 2010.

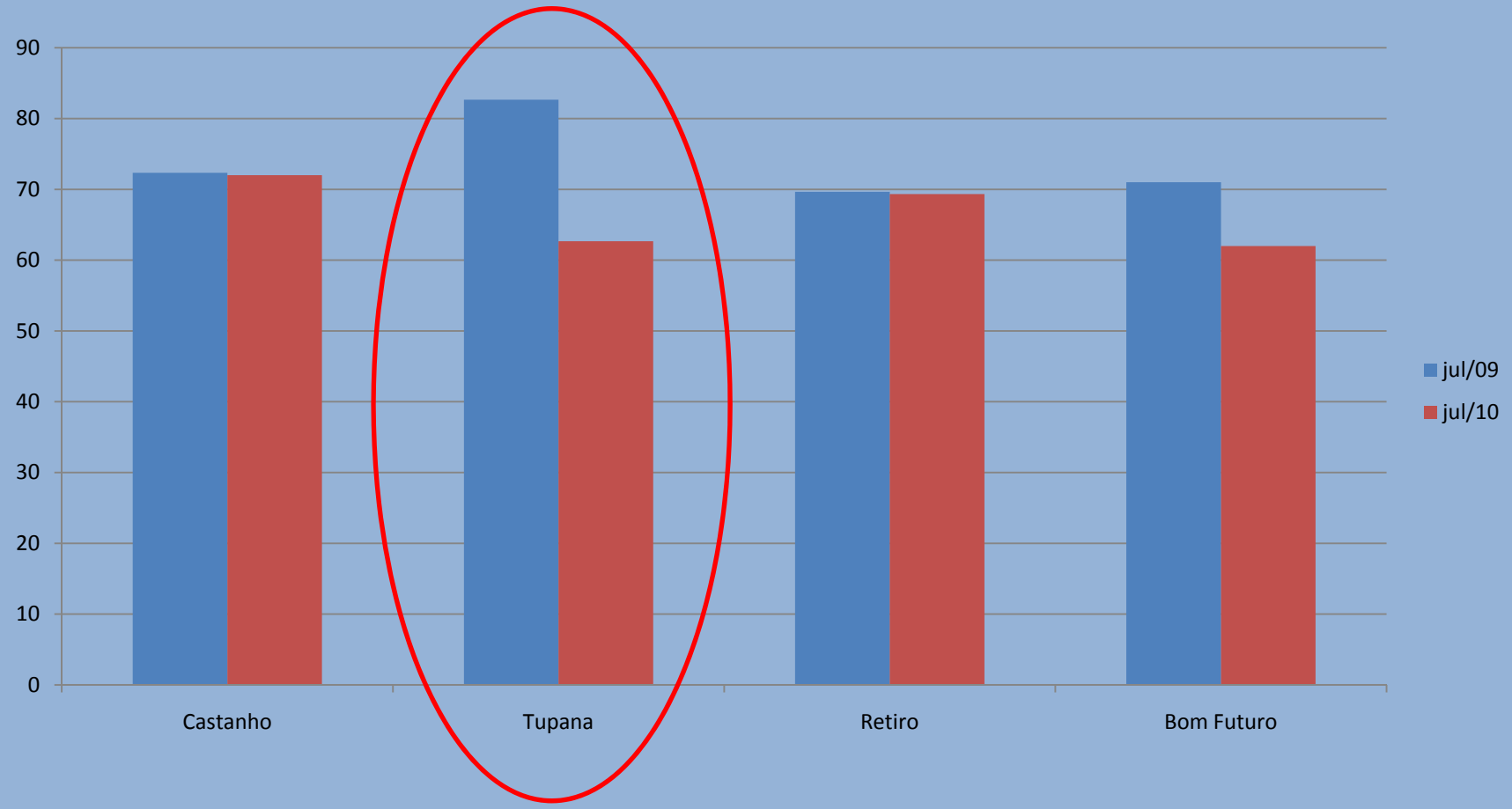


Axis of the bridge

Results

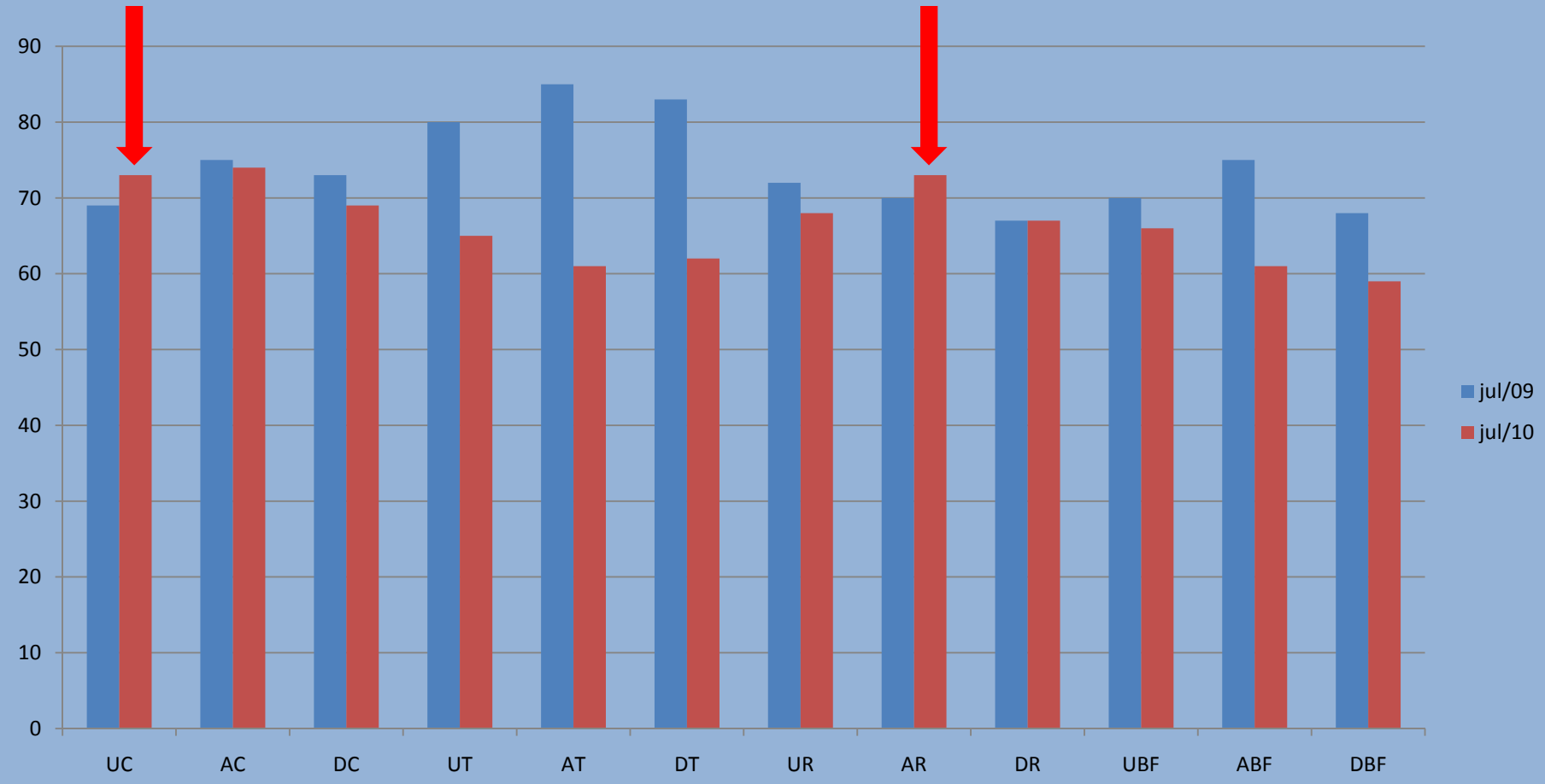
The avarage means for each water body analysed showed that the higher WQI value was on the period of july 2009.

The higher difference observed was on Tupana river, where the means ranged from 62,66 (july 2010) to 82,66 (july 2009).



Results

The variations on the WQI levels were better evaluated when we analysed by sample point, where only the points upstream the axis of Castanho river bridge and on the axis of the Retiro Igarapé the index showed higher values in 2010 when compared to 2009.



Results

For the variations found on Tupana River, the parameters that influenced more the values of the index were termotolerants coliforms and the Biochemical Demand of Oxygen.

Higher concentrations of these values were observed on the axis of the bridge and downstream of the axis, where the populations that live among the river are found.

Analysing the parameters that influence the WQI, showed that the more pronounced variations on the WQI were not caused by any parameters that can reflect a direct impact of the venue on the water quality.

Sunrise on the Amazon River
Photo: Vinicius Azeredo