

## Explanation of Template

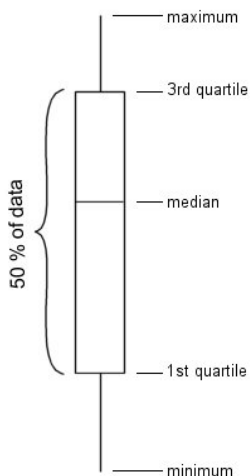
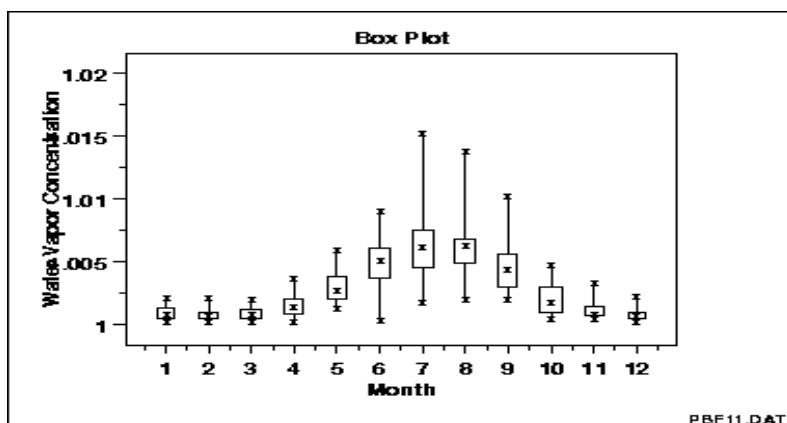
### Overview

The attached template (School1template.xls) is designed to enable you to look at and compare nutrient data that you have collected at each of your sites over the duration of the Lower Fox project. You will copy data for your stream from the project website into a template that Nick Reckinger and Paul Baumgart created. The template will then produce some data tables and two graphs for your stream. At the symposium, we will have a facilitated discussion session in which we will use these graphs to compare and discuss nutrient data between sites and over the seasons. You may want to print this Word document (Explanation of template) or otherwise have it available as you examine the tables and graphs that you produce with the template.

The template that you have is an Excel file, which is also called a 'workbook.' Each Excel workbook consists of one or several 'worksheets,' which are indicated by tabs at the bottom of an Excel screen. The Excel file that you have is named 'School1template,' and consists of three worksheets. The three worksheets are titled Instructions, Raw Data and Template. When you open School1template, you will see these worksheet titles as tabs at the bottom of your screen. The Instructions for entering your data into the template are found in the 'Instructions' worksheet.

### What is a boxplot?

The graphs that are produced by the template are called 'Boxplots' or 'Box and Whisker' charts. A boxplot is a quick, convenient way of graphically examining data. A boxplot looks like this:



Each box and the lines (whiskers) extending above and below it represent what, in statistics, is called the "five-number summary." These 5 numbers consist of the minimum (smallest value), the first quartile (or Q1, which cuts off the lowest 25% of the data), the median (middle value), third quartile (or Q3, which cuts off the highest 25% of the data), and the maximum (largest value). As you can see in the diagram at left, fifty percent of the data points are contained in the 'box.' The line extending below the box represents the lower 25% of the data, extending down to the minimum value. The line extending above the box represents the upper 25% of the data, extending up to the maximum value.

### **What will I produce with the template?**

After you have copied your data into the template, you will produce some data tables and two graphs. These will show up in the 'template' worksheet. In the graphs that you will produce with the template, the first graph you will see is the one near the data table that is titled 'Site comparison.' In that graph, the two left-most boxes on the graph represent phosphorus levels at your two sites on your stream. The middle 2 boxes represent ammonia levels at your two sites, and the right-most 2 boxes represent nitrate levels at the two sites. This is a way to compare the nutrient levels at your two sites over the years that you collected data.

The other graph is the one near the table that is titled 'Seasonality.' In that graph, the data from both your sites is grouped by season. If you look at the three leftmost boxes, you will see that the first one on the left represents spring data for phosphorus, the second from the left represents summer data for phosphorus and the third from the left represents fall data for phosphorus. The middle boxes represent spring, summer and fall data for ammonia and the right three boxes represent spring, summer and fall data for nitrate. This is a way to compare the effect of season on nutrient levels.