Monitoring Water Quality

Equipment

Physical Indicators of Water Quality

In this presentation we will look at 4 measures associated with monitoring water quality in saltmarsh habitat:

- Salinity
- pH
- Water temperature
- Turbidity

Salinity

- Water and soil salinity are measured by passing an electric current between the two electrodes of a salinity meter in a sample of water. This electrical conductivity is influenced by the concentration and composition of dissolved salts.
- Higher salinities increase the ability of a solution to conduct an electrical current, so a high EC value indicates a high salinity level. This is how many salinity meters work.

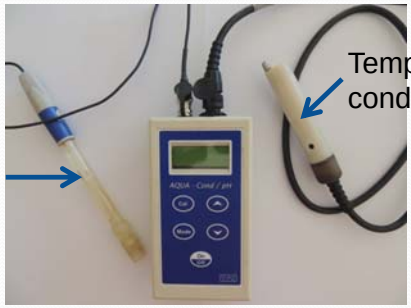
Salinity readings

- The water quality meter can give a reading for salinity.
- The normal salinity for sea water is around 35 parts per 1,000 or 35 ppk.
- Salinity levels in saltmarsh can vary between 0 and over 100 ppk.

Water quality: pH

- pH is an important indicator and is used to look for soil disturbance. Saltmarsh and mangrove substrate can be quite acidic especially if the lower levels become exposed to air. This is known as Acid Sulphate Soil and its presence can be detrimental to organisms via the effects of high acidity within the water column.
- Disturbed habitat (e.g. stormwater drains can be a source of acidity) and so it is important to measure pH during inundation and also as the tide recedes.

Water Quality Equipment



This meter provides measures of pH, salinity and water temperature

Turbidity

- We measure turbidity with a different piece of equipment from other water quality parameters
- For saltmarsh programs we use a special meter which can measure the level of suspended particles in the water
- The basic unit for turbidity is the NTU (Nephelometric Turbidity Units)

Turbidity Equipment

Water Turbidity Kit

Notes on measuring Turbidity

- Saltmarsh is a hostile environment for water quality and turbidity meters
- It is important that you take care of equipment in order to keep it in working order
- The equipment should be calibrated before each sampling session
- Care should be taken to ensure samples are not contaminated