

Data Analysis Introduction

There are a few different ways this data can be analysed. There may be a large quantity of data collected. This can make data analysis of entire results daunting for students (and teachers!).

Student worksheets are provided on the next pages for teachers to photocopy. Students can work individually or in pairs to complete these worksheets. Competent students may wish to input data in a spreadsheet using a programme such as Excel.

1) Student Worksheets

These are designed so that students can input their own data, do the necessary calculations and draw graphs. Interpretation questions about each graph are included. These worksheets are designed to:

- reduce the amount of data students need to work with
- allow students the opportunity to input and calculate data along each step so they understand the process
- create meaningful graphs.

Most of these graphs will only provide a picture of what is happening on one part of the beach (i.e. along their transect).

Worksheets Included:

- 1) What lives on the beach? *Abundance of Shellfish Bar Graph*
- 2) How big are the cockles/pipi? *Cockle/Pipi Size Histogram*
- 3) How does cockle/pipi abundance change with distance from high tide? *Cockle/Pipi Line Graph*
- 4) Let's compare the entire beach. *Overall Shellfish Abundance Bar Graph*

For the 'Cockle/Pipi' worksheets, choose which of these two species is the most abundant at your survey site. Cross out the species that does not apply on your worksheet tables and graphs.

Note about Quadrat Calculations (Cockle/Pipi density worksheet):

Mostly the quadrats we are using in the HGF programme have 31.6cm long sides

Quadrat area (m²) = 0.316m x 0.316m

Quadrat area (m²) = 0.1m² (round to 1 decimal place)

2) Comparing & Interpreting Results

The following fact sheets have been written for teacher and student use to assist in interpreting results, and gain an understanding of management options available for shellfish populations.

A) Factors Affecting Distribution and Abundance of Intertidal Shellfish Populations

B) Management Options for Shellfish Ecosystems

Your survey coordinator will also be keeping a record of your survey data and will provide charts showing an overall summary of your findings including how your survey compares with previous years results and surveys at other beaches.

The number of shellfish in a population naturally fluctuates through time. Several years of survey data are needed before trends can be reliably detected so a drop in numbers from one year to the next is not necessarily cause for alarm. Your coordinator can assist you in interpreting the survey results.