

How to do the Survey



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Karakia

- Ko Rangi
- Ko Papa
- Ka Puta ko Rongo
- Ko Tanemahuta
- Ko Tāwhirimātea
- Ko Tangaroa
- Ko Haumietiketike
- Ko Tumatauenga
- Ko te Rangi ki runga
- Ko te Papa ki raro
- Ka Puta te ira tangata
- Ki te whaiao, ki te ao marama
- Tīhei mauri ora



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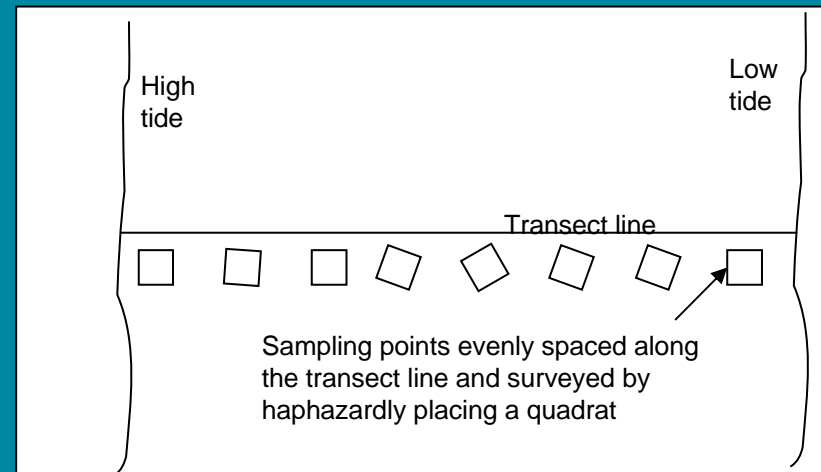


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- In a group of four: run a transect line between high & low tide
- Locate 8 sampling points at equal distances along the line
- Haphazardly place a quadrat at each sampling point
- Record & count all surface animals and plants
- Dig up the quadrat to 15cm & record and count all subsurface animals and plants

Quick summary of how to do the survey



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Step by step guide to doing the survey

- The following is a step by step guide to doing the survey
- Read through these slides then practice laying out the equipment and working out who will do what in a 'dry' run of the survey on your playing field or school gymnasium



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1. Get into groups

- The first thing you will need to do is get into groups. Give your group a name!
- Each group should have three or four students in it.
- Each group can draw a map of the survey area. Note down on the map any key landmarks and changes in habitat between the high and low tide.



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2. Lay transect lines

- Run a transect line between the high and low tide line. (Your teacher will allocate how many groups per transect line)
- We will be surveying marine life along these lines. (The transect line needs to be drawn onto your map.)



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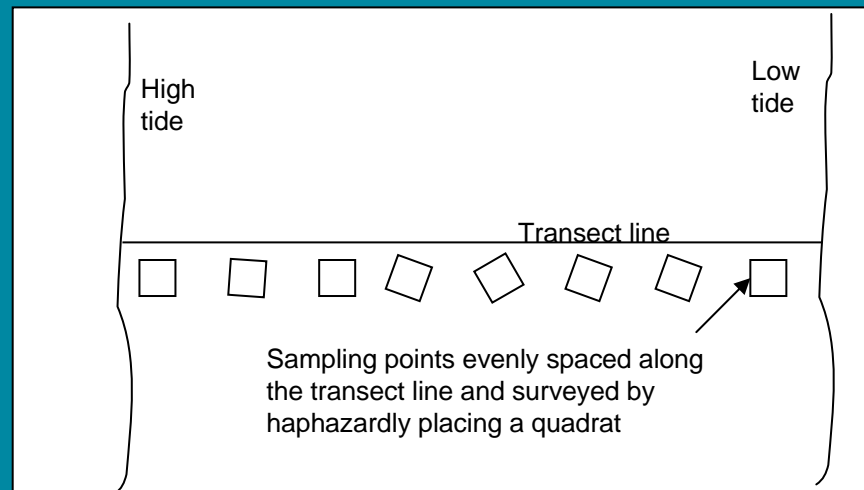


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3. Survey 8 sampling points along the transect line

- Starting at the high tide line you will place a 315 x 315 cm quadrat at regular intervals along the transect line (see diagram).



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3. Survey 8 sampling points along the transect line

- It is recommended you use 8 sample points equally distanced along the transect line
- If your beach measures 100m between high and low tide how far apart will your sampling points be?
- Quadrats are placed hahazardly within 2m of each sample point.
- Within each quadrat count and record all surface plants and animals on the estuarine plant and animals survey data sheet.



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4. Dig out the quadrat

- Once you have completed the surface count for each quadrat, hold onto the quadrat while you dig up the entire quadrat area to a depth of at least 15 cm (approximately blade depth on your spade)
- Sieve this material through a 5mm sieve.
- Record and count all animals left in the sieve and list these on the right hand column of your estuarine plant and animal survey data sheet (see next slide).



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MarineWatch data

- Information collected in a scientific survey like this one is known as data.
- Data is recorded using pencil on data sheets that are attached to clipboards. Rubber bands are useful to stop the paper from blowing away.
- Transect and site data are recorded on a sheet like the one on the following slide:



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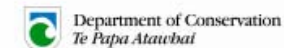
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Transect and site data

MARINE WATCH – Transect & Site Data Sheet

Complete this information for each transect and attach photos or other relevant information

Location:	Date:	Your name:
Map refs/GPS co-ordinates		
Transect No:	Transect Bearing	Length of Transect
Site description (photograph refs) to relocate transect marker on shoreline		
	Low tide: Time: hrs Height: m	High Tide: Time: hrs Height: m
Notes: (eg unusual sightings)		



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Te Kura o Te Arawa

MarineWatch data

- Information collected during the survey is entered onto a data sheet like the one on the following slide:



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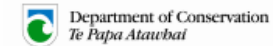


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Data sheet

BEACH NAME			RECORDERS NAME						
DATE			TRANSECT NUMBER						
Sampling point/ Quadrat Number	Dist.(m) along transect from high tide	Substrate	Plants			Surface Animals		Sub-surface Animals	
			Species name / description	height	% cover	Species name / description	abundance	Species name / description	abundance



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Data

- Data is taken from your slate and entered onto a 'spreadsheet' or computerised table.
- From this graphs can be made.
- Graphs make pictures out of numbers – data is easier to understand when it's made into pictures or graphs!



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Example spreadsheet for data entry

Microsoft Excel - Master sheet for data entry

File Edit View Insert Format Tools Data Window Help

Type a question for help

100%

Arial 10 B I U

Reply with Changes... End Review...

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	name of students who collected data														
2	data entered by														
3	data verified by														
4	date of survey														
5	site name														
6	substrate														
7	Transect Number														
8	Quadrat number														
9	insert species name in this cell														
10	insert species name in this cell														
11	insert species name in this cell														
12	insert species name in this cell														
13	insert species name in this cell														
14	insert species name in this cell														
15															
16															
17															
18															
19															

Master sheet for data entry

Ready



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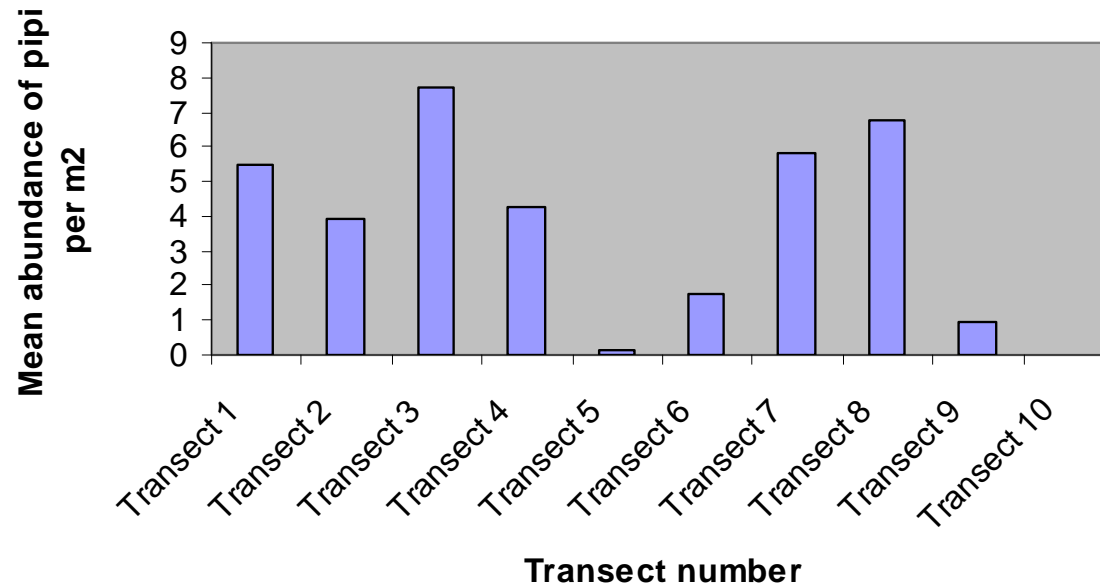


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Data

Mean abundance of pipi per m² Memorial Park 2006



- We can make graphs showing the abundance of individual species on each transect



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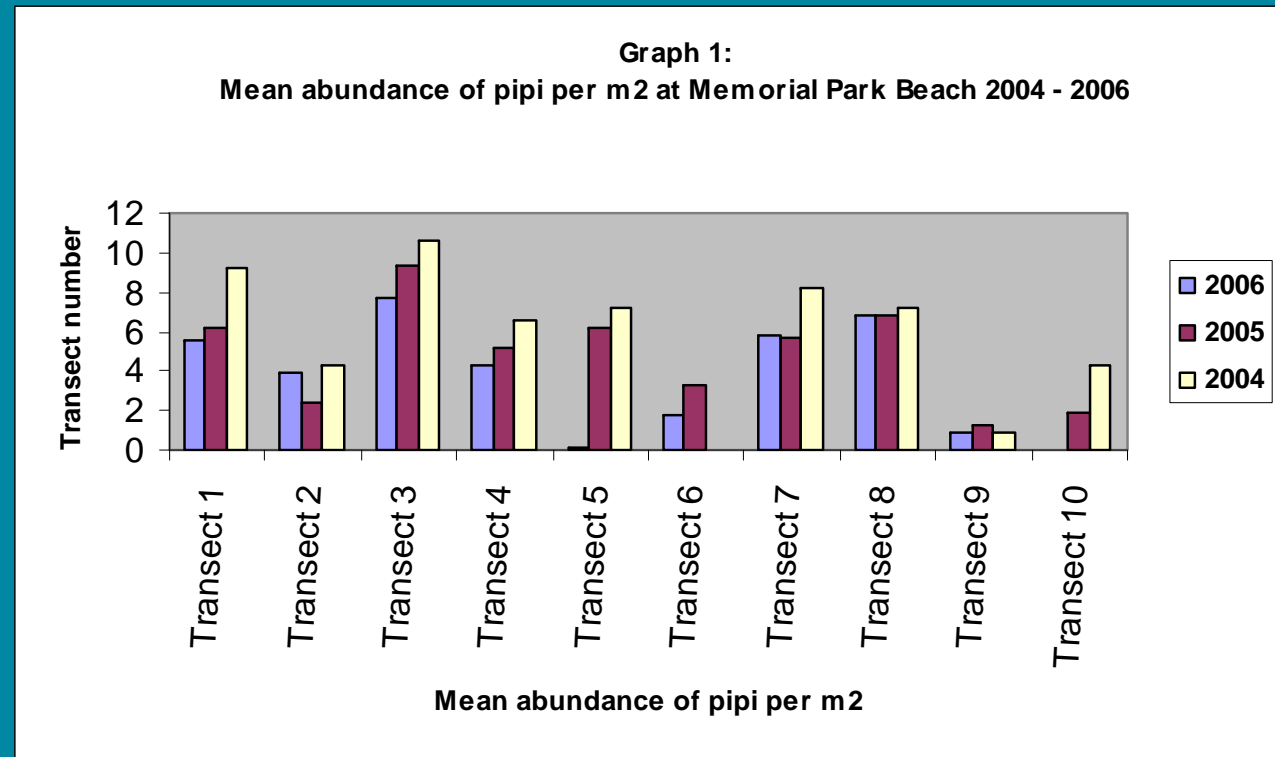


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- Graphs can be generated to show changes in abundance of individual species over time



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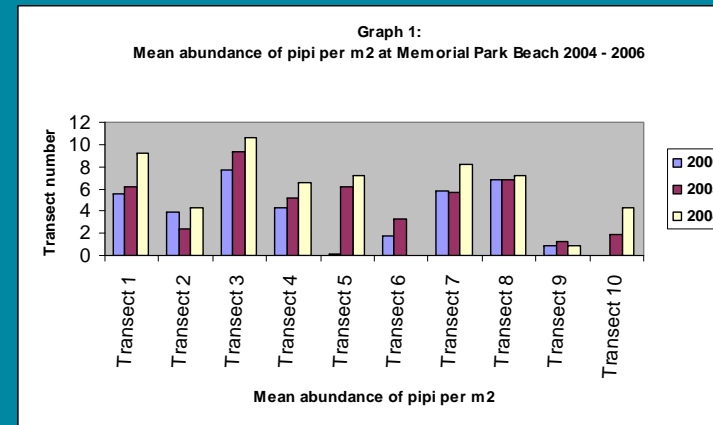


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Discussion questions

- What is the X axis & Y axis?
- What information can you tell from this graph?
- Did pipi abundance increase over time on any transects?
- Did pipi abundance decrease over time on any transects?
- Overall would you say there is a trend towards more or less pipis?



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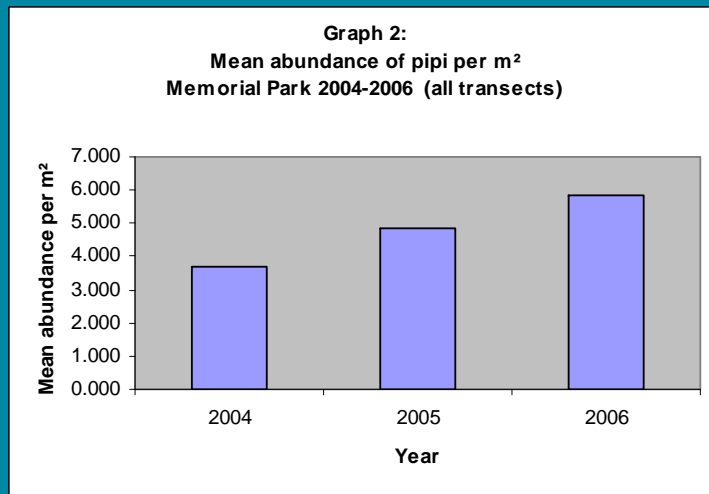
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Discussion questions



- Does this graph have the same information on it as the last one?
- What story does this graph tell?
- Are pipi numbers increasing or decreasing?
- Is the pipi population story told better by this graph or the last one?
- What reasons might there be changes in pipi populations?



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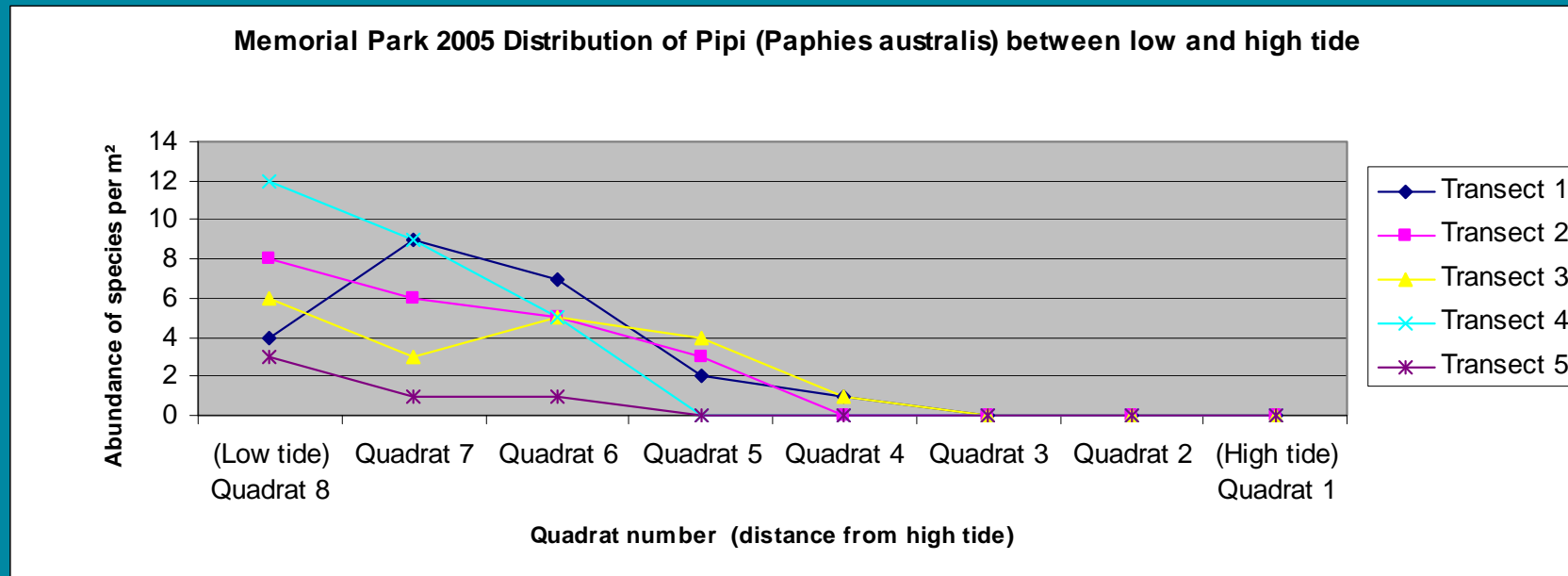


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Data



Graphs can be generated to show distribution of a species between high and low tide

Species identification

- Use the species identification slides from your area to practice identifying marine organisms you will see on your survey!



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