

The Rocky Shore



Unit: **8930** *Identify biological community interrelationships and patterns through investigation (Level 2).*

Element: 1 Gather quantitative field data from a community.

 2 Process data to show interrelationships or patterns in a community.

 3 Explain how biotic and abiotic environmental factors contribute to a community pattern.



Students record species coverage 20cm² quadrats at 0.5m intervals



Data is recorded in a table to be analysed back at school.



Oyster *Crassostre glomerate*

- Oysters were found right through out the zones of the Rocky Shore and were most abundant at 5m



Black nerita *nerita melanostragus*



barnacles periwinkle seaweed mussel



Barnacles and mussels compete for space



Chiton and periwinkle are herbivores that graze on a seaweed in a rock pool



Mussel *Perna*



- Mussels like to grow in wet areas of the rocky shore and are found mostly on the low tide of the rocky shore between 0m – 1.5m mark.

Limpet *Cellana ornata*



Chiton *Ischnochiton maorianus*



- Found under
- stones or in crevices away from sunlight

Barnacle *Elminious modestus*



- Barnacles are found mostly between 1m – 2.5m so they like to be in the water a lot of the time as well and being out of the water for very little time.

The blue Periwinkle *Melarpha olivera*



- Periwinkle show the largest range
- Are mobile so can move if conditions are not suited

Periwinkle and seaweed in a rockpool



Lichen grows high on the splash zone



Palaemon affinis Rockpool shrimp



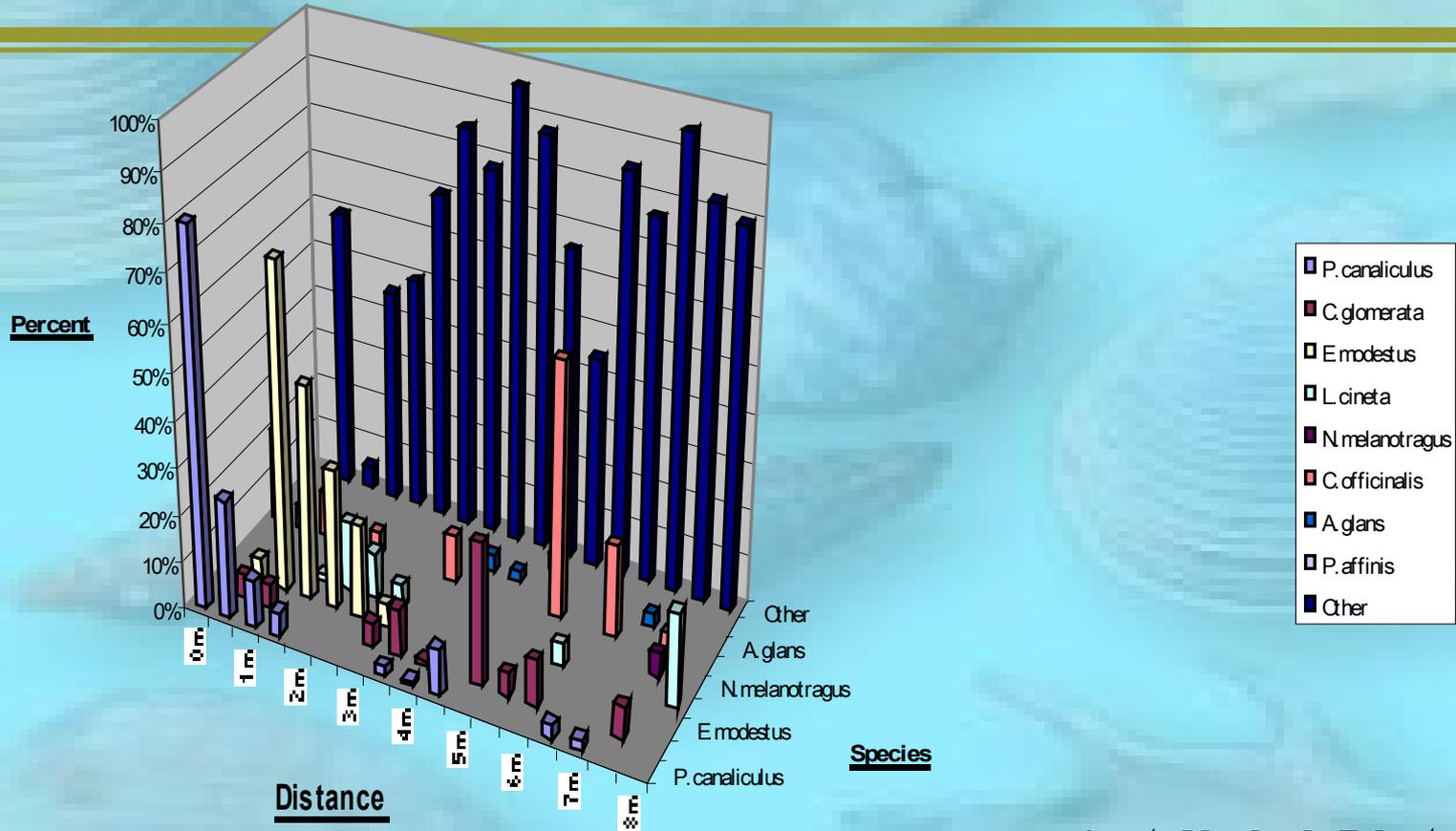
Task 2: Processing the data to show patterns

- **a) Use your returned raw data to produce a summary in a tabulated, systematic format. Include all the plant and animal species you found. Remember that to be systematic, your summary must be logical, with site information, species named (care with spelling), orientation, measurements, units and headings.**
- **2.1q b) Using this tabulated data, choose the FIVE most common/widespread species and represent their distribution pattern by drawing a series of kite diagrams.**
- **2.2q Task 3: Interpreting your data Carefully consider the environmental factors you noted in Task 1 and any others you may think are appropriate.**
- **a) Choose one biotic (living) and one abiotic (non-living) factor that you think contributes to the zonation pattern shown in the raw data or kite diagrams.**
- **b) Explain how each of the factors contributes to the pattern shown. Use one example from your data to back up your explanation. The "Rocky Shore" booklets are available for your use. 3.1q**

Distribution of species

Species:	<i>P. canaliculus</i>	<i>C. glomerata</i>	<i>E. modestus</i>	<i>L. cineta</i>	<i>N. melanotragus</i>	<i>C. officinalis</i>	<i>A. glans</i>	<i>P. affinis</i>
0m	80%					20%		
.5m	25%	5%	5%			5%		
1m	10%	5%	70%			10%		
1.5m	5%		46%	1%		2%		
2m			30%	15%		5%		
2.5m			20%	10%				
3m		5%	5%	5%				
3.5m	2%	10%				10%		
4m	1%	1%					4%	
4.5m	10%						2%	
5m		30%						4%
5.5m		5%				55%		
6m		10%		5%				
6.5m	3%					20%		
7m	2%						3%	
7.5m		7%			5%	5%		
8m				20%				

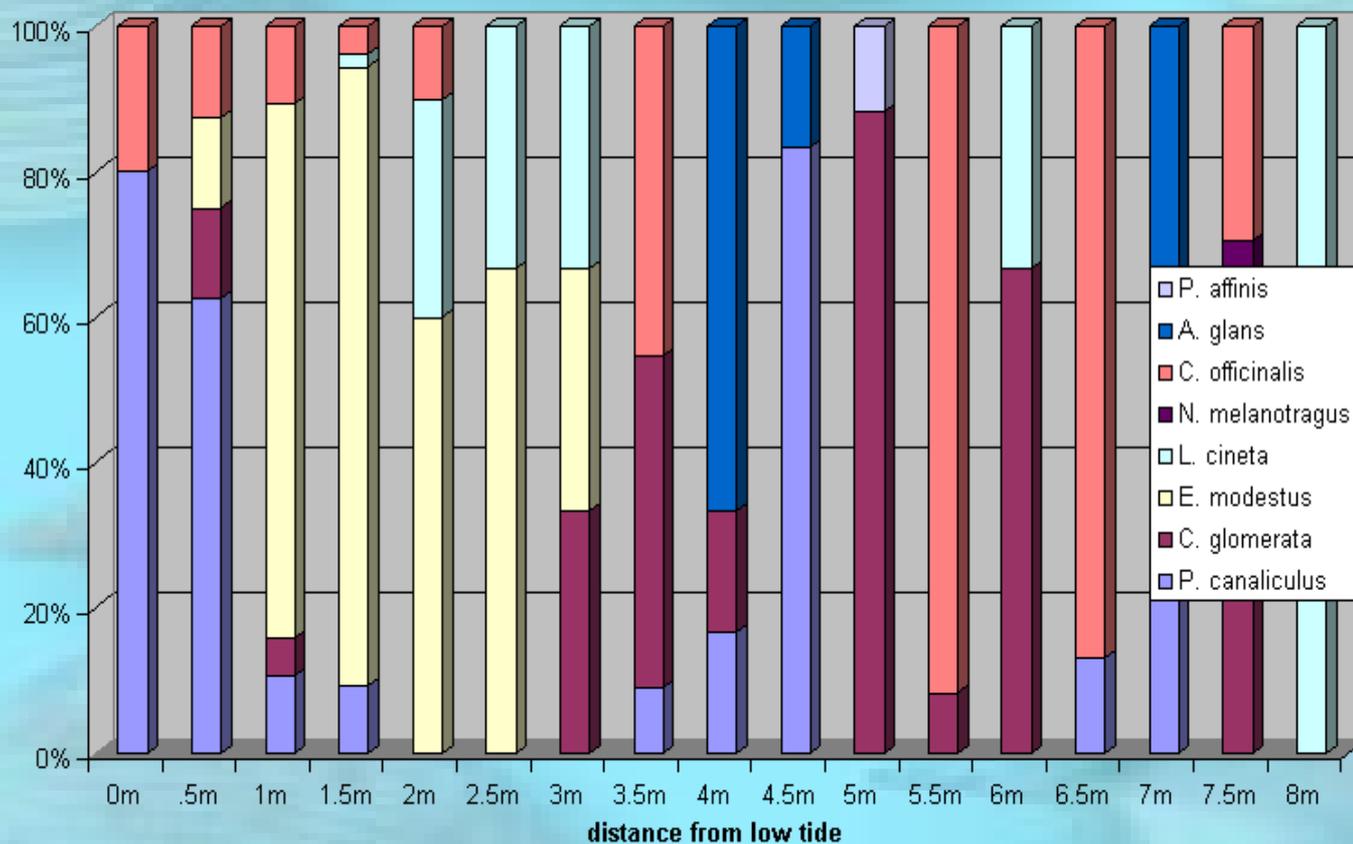
Distribution Patterns @ Rocky Shore



Created by Jamie Roberts

Zonation Taipa Rocky shore

% coverage 20x20cm quadrat



More Links

- Life on the Rocky Shore
- Exploring Ecosystems
- good site for seniors
- Worksheet1
- Worksheet2

