

Measuring Coral Health using transects

Learning Objectives

At the end of this field activity, students will be able to:

- Monitor the health of corals using the Coral Health Chart.
- Use a transect line as research technique.

Equipment

- If snorkelling - mask snorkel, fins
- If reefwalking - booties, hat and sunscreen
- Waterproof DATA slate (see picture) with pencil
- Underwater camera (if available)
- Viewing tube (if available)
- Do It Yourself leaflet
- Coral Health Chart
- Thermometer
- GPS (if available)






Instructions

1. Read the instructions on the back of the Coral Health Chart.
2. Make sure you have all your equipment as listed above.
3. Start with recording survey details on your data slate: name, date, time, GPS (if possible), water temperature, depth, activity and conditions.
4. Follow the instructions on the chart and aim to collect data for 20 different colonies using a transect tape.
5. Lay out a tape measure or string with measurements marked on it. To decided what intervals to use on the transect tape you should consider the coral cover in your area. With high coral density you could collect data every half a meter, meter or with low density it might be best to take 2 meter intervals.
6. Swim or walk along the tape, and record data every 50 cm (depending on coral cover).



Teacher notes

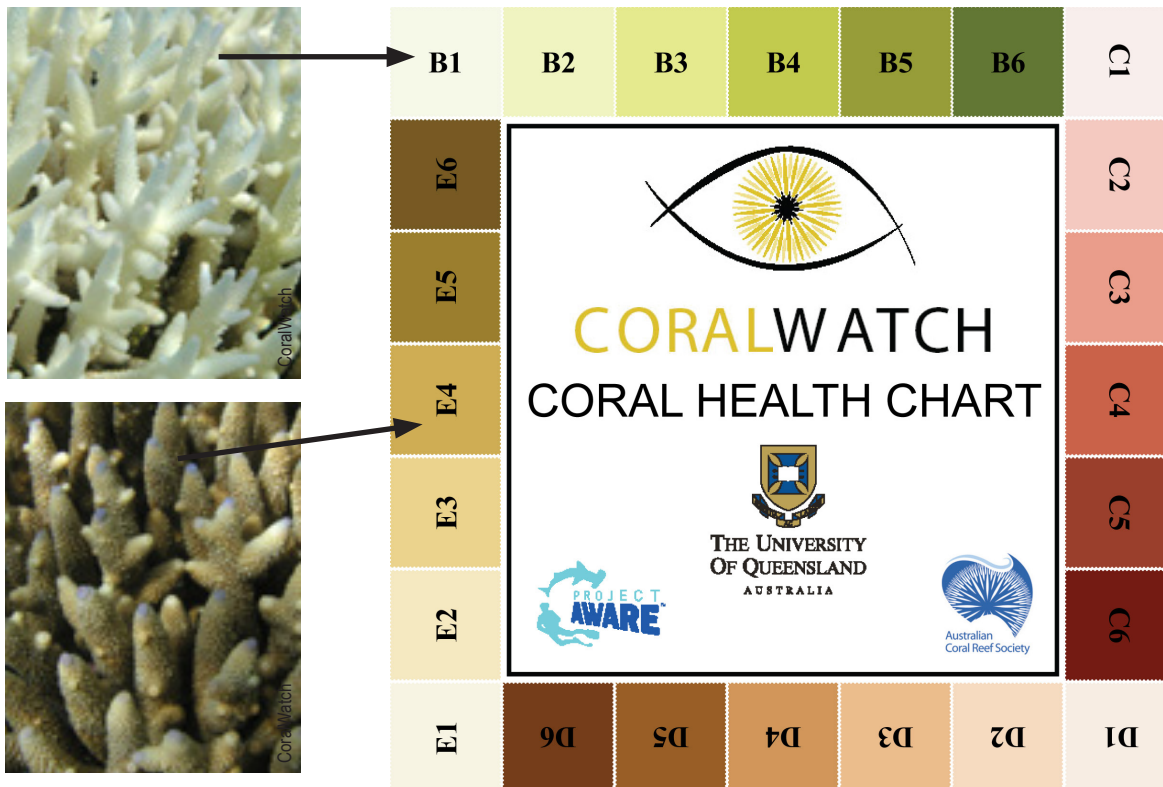
- *The CoralWatch Virtual Reef Activity is useful preparation for using the Coral Health Chart in the field.*
- *The CoralWatch data slates contains all required survey details. You can also create your own data slates by transcribing all the information onto a blank slate. Make sure you don't miss any details!*
- *The distance along the transect line between measurements can vary depending on coral cover. If there is no coral underneath the assigned reading, students can pick the closest coral colony.*
- *Ensure students don't damage the coral as they lay out the tape.*
- *For future reference, students could mark the start and end of your transect using GPS coordinates.*

Reef name and country:							
Your name:		CORALWATCH					
Date and time:	Coral NO.	COLOUR CODE		CORAL TYPE (please tick)			
		Lightest	Darkest				
GPS: (if possible)	1						
	2						
	3						
	4						
	5						
Depth: m / feet	6						
Sea temp: C / F	7						
	8						
	9						
	10						
Sunny / cloudy / raining	11						
Walking / snorkelling / diving (please circle)	12						
	13						
	14						
	15						
	16						
	17						
Enter all your data online at WWW.CORALWATCH.ORG	18						
	19						
Your data is important to us!	20						

Example of CoralWatch data slate. You can create your own as long as you make note of all details.

The Coral Health Chart

The colour charts are based on the actual colours of bleached and healthy corals. Each colour square corresponds to a concentration of symbionts contained in the coral tissue. The concentration of symbionts is directly linked to the health of the coral.



Instructions - Using the Coral Health Chart

1. Choose a random coral.
2. Look down at the coral and select the lightest area, avoiding the tip of branching corals.
3. Hold the colour chart next to the selected area.
4. Rotate chart until you find the closest colour match.
5. Record the matching colour code along with coral type on the data sheet.
6. Repeat steps 2 to 5 for the darkest area of the coral.
7. Continue survey with other corals.
8. When you finish, transcribe your collected data to the website data sheet www.coralwatch.org and submit.

Survey Methods

The Coral Health Chart can be used while diving, snorkelling or reef-walking. You can choose one of three monitoring methods depending upon your skills, experience and location:

Random Survey – select corals randomly, such as choosing the coral closest to you every second fin kick or when you are reefwalking measure your steps.

Transect Survey – select your corals by following a line (transect) and record colour scores every few meters. Make sure that the transect has no affect on marine life.

Easily Identified Corals – select corals that you can easily identify and return to.

Coral types



soft (SO)



boulder (BO)



branching (BR)



plate(PL)

DATA SHEET

Group name: _____ Your name: _____

Email address: _____

Participation field: dive centre / scientist / environmental / school or university / tourist

Country of reef: _____ Reef name: _____

GPS if possible: _____ Depth _____ m / feet Sea temp: _____ °C

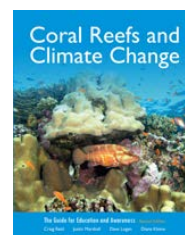
Date of survey: _____ / _____ / _____ Time collected: (ie. 14:00 or 2pm) _____
Day Month Year

Weather: sunny / cloudy / raining Your activity: reef walking / snorkelling / diving

***Please note: data will not be accepted on the website if any of these fields are left blank**

Coral Number	Colour Code		Coral Type			
	L=Lightest	D=Darkest	Br=Branching	Bo=Boulder	Pl=Plate	So=Soft
<i>example</i>	<i>L: D2</i>	<i>D: E5</i>	<i>Br</i>	<i>Bo</i>	<i>Pl</i>	<i>So</i>
1	L:	D:	Br	Bo	Pl	So
2	L:	D:	Br	Bo	Pl	So
3	L:	D:	Br	Bo	Pl	So
4	L:	D:	Br	Bo	Pl	So
5	L:	D:	Br	Bo	Pl	So
6	L:	D:	Br	Bo	Pl	So
7	L:	D:	Br	Bo	Pl	So
8	L:	D:	Br	Bo	Pl	So
9	L:	D:	Br	Bo	Pl	So
10	L:	D:	Br	Bo	Pl	So
11	L:	D:	Br	Bo	Pl	So
12	L:	D:	Br	Bo	Pl	So
13	L:	D:	Br	Bo	Pl	So
14	L:	D:	Br	Bo	Pl	So
15	L:	D:	Br	Bo	Pl	So
16	L:	D:	Br	Bo	Pl	So
17	L:	D:	Br	Bo	Pl	So
18	L:	D:	Br	Bo	Pl	So
19	L:	D:	Br	Bo	Pl	So
20	L:	D:	Br	Bo	Pl	So

Check out these resources...



Reid, C., Marshall, J., Logan, D.,
 Kleine, D. (2012)
Coral Reefs and Climate Change: the guide for education and awareness.
 CoralWatch, The University of Queensland, Brisbane, Australia.

Siebeck, U.E., Marshall, N.J., Kluter, A. and Hoegh-Guldberg, O. (2006)
Coral Reefs 25(3):453-460

Any other relevant information, e.g. average diving depth, species of coral, pollution, long term weather such as drought, flood, heat-wave.

Please enter your data directly onto the CoralWatch website www.coralwatch.org

Or use one of the following options if you don't have web access:

1. email: info@coralwatch.org
2. mail: CoralWatch, Queensland Brain Institute, The University of Queensland, Brisbane, QLD 4072 Australia

Thank you very much for participating! Check our website for survey results and global bleaching trends.

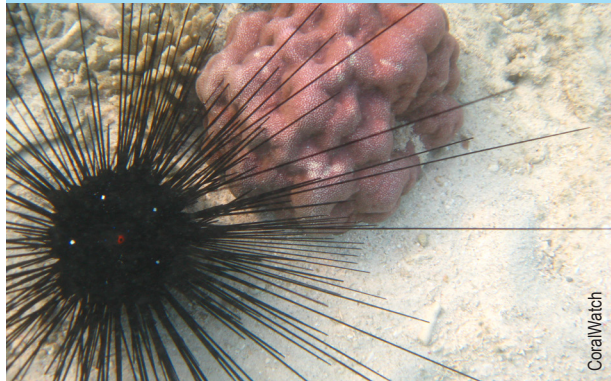
TIPS FOR MONITORING

For best data results and safe survey practices please use the following tips.

Collect data from 20 different coral colonies



Be careful - avoid touching marine life



Stay together as a buddy team



Corals are fragile - please don't touch



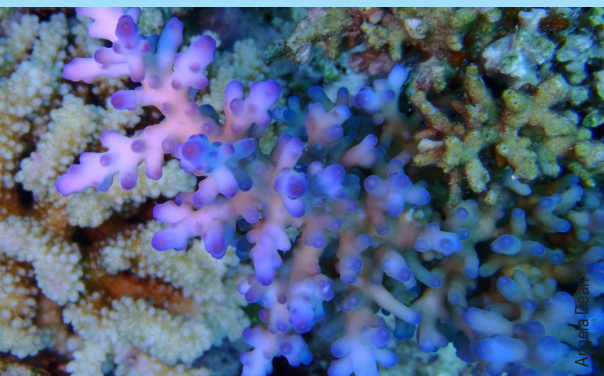
Use a GPS for accuracy



Use a torch when diving below 5m/15 feet



Do not monitor blue corals



Blue corals bleach differently to other corals.

Don't measure the tips of corals



Growing tips are naturally pale.