

THE PROGRAM

What is CoralWatch?

CoralWatch is a citizen science program based and supported by The University of Queensland in Brisbane, Australia. CoralWatch aims to increase understanding of coral reefs, coral bleaching and climate change and encourage reef protection through interactive learning and monitoring tools.

What is citizen science?

Citizen science is scientific work undertaken by the public, often in collaboration with or under the direction of professional scientists and institutions. It's a fun way of learning about the reef while collecting valuable data.

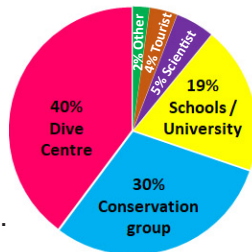
Why do we need to protect reefs?

Reefs provide habitat and shelter for many organism, one quarter of all marine species live in or around a reef. Healthy reefs produce food for millions of people and help to protect coastal land from cyclones and storm surges. Reefs support local economies, providing employment from tourism and fishing industries. Coral reefs globally are in decline, endangered from both local and global threats such as coral bleaching, storms, pollution, crown-of-thorn starfish, and overfishing. The biggest threat to reefs is climate change.

THE PEOPLE

Who is involved with the program?

Individuals as well as conservation groups, dive centres, government, schools, universities, scientists and tourists help collect data. Overall 93% of people involved are citizen scientists.



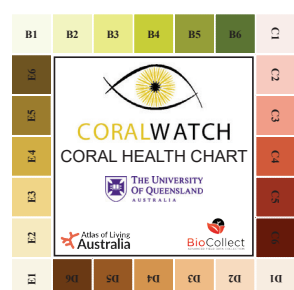
Why do you need my help?

There are not enough scientists to monitor all the world's reefs, this is why we need your help! By participating in volunteer monitoring programs, citizen scientists, just like you, can help gather important data that scientists otherwise do not have access to.

How could I get involved?

Anyone can participate in reef monitoring; you don't need special training. To get started, download the 'Do-it-Yourself' instructions, available in 13 languages online and request an initial free Coral Health Chart.

CORAL HEALTH CHART



How do I use the Coral Health Chart?

In the field, you simply compare the colour of a coral with the colours on the chart and record matching codes. Collect data for the lightest and darkest colour within one coral colony.

What do the different colours mean?

The colours on the chart represent the most common coral colours on the reef. Each colour square corresponds to the concentration of symbiotic algae living in the coral tissue, which is directly linked to coral health. Dark colours (4-6) represent a healthy coral and the light colours (1-2) indicate pale or bleached corals. Some corals however are naturally light in colour.

Why can't I measure blue corals?

Blue and purple corals cannot be assessed using the chart because the colour of purple corals is influenced more strongly by coral pigments, not symbionts.

What if the coral colour does not match the chart?

This is okay. It is the brightness of the coral colour that indicates the degree of bleaching. The different hues make it easy for our eyes to make an accurate match. You can also mix and use different sides of the chart.

What if I have troubles determining the coral type?

CoralWatch only uses 4 coral types: Boulder, Branching, Plate and Soft. Some corals do not fit clearly into one category, so please pick the closest form or choose a different coral.

When was the chart developed?

In 2002 on Heron Island by Dr Uli Siebeck, Prof. Justin Marshall and Prof. Ove Hoegh-Guldberg. A series of controlled bleaching experiments were performed showing a shift in coral colour brightness as corals became stressed in elevated temperatures.

Who uses the Coral Health Chart?

Apart from citizen scientists the chart is used by:

- Environmental Consultancies to measure the impact of dredging on harbours in Hong Kong and Western Australia.
- The CoralWatch methodology is applied by many scientists as part of their own research. In 2020, 60 scientific papers using the CoralWatch method where published, of which 8 were published in the Journal of Nature and Science.

Why can't I just print my own Chart?

The Coral Health Chart is printed on a special type of plastic with specific inks and colours that are consistent. Due to variation between printers, we supply the charts only in hard copy and not electronically.

Can I create my own data slate?

Yes, you can but make sure you include all the essential details. You can use CW data slate as a template.

CORALWATCH

Your name: _____
 Reef name: _____
 Country: _____

CORAL TYPE (please tick)

Boulder Branching Plate Soft

GPS coordinates (if available): _____

Coral NO.	COLOUR CODE		CORAL TYPE (please tick)				Date:
	Lightest	Darkest	Boulder	Branching	Plate	Soft	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Depth: _____ m / feet
 Sea temp: _____ C / F

Sorry if cloudy / raining
 Waking / snorkeling / diving
 (please circle)

Follow us

CORAL BIOLOGY

What are corals?

Corals are living animals related to jellyfish! A single animal is called a coral polyp. Most corals form colonies, containing thousands of polyps. There are more than 800 species of corals worldwide providing a home for fish and other marine creatures. Corals are fragile and grow only up to 10cm per year.



What are symbiotic algae?

In healthy coral, symbiotic algae (zooxanthellae) live within the coral tissue. Algae provide the coral with food and energy and give the corals their characteristic brown colour and in return the coral provides a home.

What is coral bleaching?

Stressful environmental conditions can cause the coral to expel the symbiotic algae, changing the coral colour to white. This whitening of coral is called 'coral bleaching'.

Can corals recover from bleaching?

Corals can recover if the water temperature cools and/or other stressors are removed. When corals do recover, they do not always return to full health. If stressful conditions are severe or persist for a long time, the loss of symbiotic algae, and the nutrients they provide, can lead to coral death.

Can corals bleach due to other stressors?

Mass coral bleaching is directly related to global warming and an increase in sea temperature. On a local scale corals can bleach as a result of changes in salinity, increased sedimentation, extreme low tides and reduced water temperatures. Corals can also appear white due to disease, impact of crown-of-thorn starfish and parrotfish bites.

What can I do if I monitor or see bleaching?

Conduct additional CoralWatch surveys to confirm if a bleaching event is occurring and contact your local reef management group to investigate further.

CORALWATCH DATA

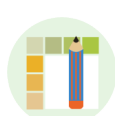
How much data has been collected?



8,686
members



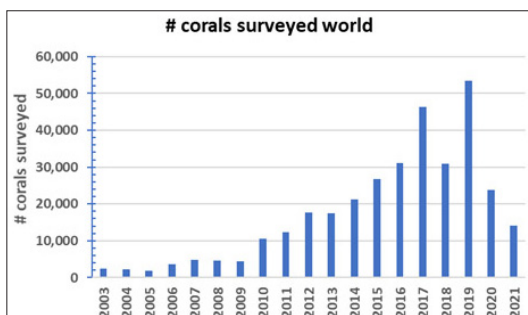
2,503
reefs



4,478
surveys



329,643
corals



Number of
corals surveyed
per year in the
world
(23 July 2021).

In which countries is data collected?

Data has been collected in 81 countries. Honduras is the number one country for amount of data collected, followed by Australia, Thailand, Mexico and Indonesia.

Who can use the data?

All the data is public available online and can be downloaded for scientific analysis as well as being valuable in an educational and management context.

What kind of questions can be answered?

General questions about which reefs are monitored and their bleaching status can be answered easily. For people seeking more specific answers, data can be differentiated by country, location, date and time, group name and type, sampling activity (walking, snorkeling or diving), weather and coral type.

Is there a difference between data collected by untrained volunteers and expert scientific teams?

Because the CoralWatch method is so simple, there is no difference. The difference comes in the identification of species, and the application of the data (for instance understanding differences in coral location and morphology).

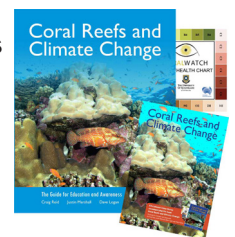
What are the known limitations of the data?

For some areas the data can be patchy. Our best datasets are collected fortnightly. If you have specific questions that you want to answer, you may have to design a particular monitoring protocol to obtain the information you require.

CORALWATCH EDUCATION

Can I use CoralWatch in the classroom?

You don't need access to the reef to get involved. A range of education materials for individuals and educators, including Australian curriculum linked lesson plans, are available on our website. Many can be downloaded free of charge or can be purchased through our online shop. These include the 'Coral Reefs and Climate Change' book and DVD, virtual reef materials and reef education packages.



SAVE REEFS FROM HOME

What else can I do protect reefs?

- Minimise your impact on the planet. Reduce and think carefully about what you buy.
- Be energy efficient. Reduction in electricity and using alternative energy sources reduces the use of fossil fuels and the effects of global warming.
- Save water. Installation of water saving devices and using less water reduces run-off and wastewater polluting our oceans.
- Visit the reef, learn about it, and educate others
- Adopt seven areas of LIFE-CHANGE with actions that make a difference! Visit <https://coralwatch.org/index.php/ambassadors/save-reefs-from-home/>