

Hi Everyone,

Our next activity is a trip to. Rusty Acres, a sculpture garden at 1 Roscrea Place, Mandeville, Christchurch 7692. I haven't been before, but others have said it's an interesting place. Andrea will provide hot water for tea and coffee. The entry fee is \$15. Address is 1 Roscrea Place, Mandeville, Christchurch 7692

There are still places available on the bus trip to Castle Hill with Kate Pedley, so let me know if you'd like to be added to the list. \$25 for Geo/Bot members and \$30 for others. That will be our last time for this year.

Our new bank account is **Gillian Fountain 03 1599 0139475 000**. The bank wouldn't open an account called GeoBot and insisted on using Gill's name. Hugh Curry is a signatory so that is our security apart from knowing that Gill is totally honest. I had the old account on the last newsletter. Apologies to those who tried to use it.

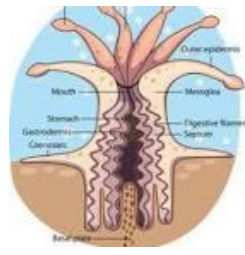
Latest talk

6th October 2025

Coral

Paul Broady

Paul began by talking about the classification of corals, the main types being shallow water species and deep-water ones. Corals are found worldwide, in the warm tropical seas but also in colder regions. The main genus is cnidaria, dividing into Anthozoa which are corals and sea anemones, and scyphozoa and cubozoa, squishy forms like jellyfish, with stinging cells.



The hard based corals are formed from colonies of millions of polyps anchored to a calcium carbonate framework below. They have stinging tentacles 1-3mm long which capture food. All functions of feeding, excreting and reproducing work through one orifice at the top. Zooxanthellae is the name for the single-celled photosynthetic algae that live a symbiotic relationship with reef-building corals. They produce sugars by photosynthesis and If these algae leave, bleaching occurs as the coral's food source has gone. Reproduction happens three ways. Asexual by division or fragmentation and sexual by sperm and eggs. Some colonies are male and others female. On a single night when conditions are right these colonies simultaneously emit sperm and eggs in vast numbers into the sea giving maximum fertilisation chances.

There are different types of reefs. Fringe reefs are most common from 40-200m deep The Great Barrier Reef is one stretching 2,300km with 600 species of coral and 1625 sorts of fish. The surgeon fish eats seaweed which would strangle the reef by cutting out sunlight. The parrot fish scrapes algae and exudes sand which forms the white beaches. Turtles also graze on algae. These reefs protect the land by absorbing 97% of the energy of the waves. Tourism and fishing add to the economy. It's estimated 300,000,000 people travel to reefs each year. Some sea creatures also produce useful drugs.



Cold-water corals grow deep in the ocean where there is no sunlight. They feed off the water catching sinking dead algae. Because they are undisturbed they can grow to enormous size forming mountains and living for thousands of years. Gold coral up to 2740 years and black coral up to 4270 years. They form calcium carbonate rings like tree rings, one hundredth of a mm a year, which helps to date them.



Paul also told us a lot of facts about coral survival over 500million years, coping with ice ages which kill them but reviving when conditions warmed up. Many now cope with water's high temperatures and increasing acidity, but it is the speed of change which might be disastrous. Some corals may survive by going deeper or moving to cooler latitudes.

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Recent Trip

17th September 2025

Bottle Lake

Grant Gillard

- The forest is leased from the council by Matariki, a forestry company, owned by The Rohatyn Group (TRG) and Stafford Capital Partners. TRG bought Rayonier's interest in the forestry group on June 30, 2025, making it the majority owner.
- Unlike Kate Valley, there is no landfill lining. The site was filled before that technology. Instead, leachate filters through the underlying sand dunes and out to sea. Grant said, "pollution plus dilution equals solution."
- The native plants are sourced from the CCC's own nursery. The site orders their requirements a year in advance and seed is collected and raised. Before planting, biosolids from the wastewater plant are spread thickly, followed by a layer of composted material from the council's green waste operation, followed by topsoil and then plants. Natives grow well but deeper-rooted trees can't thrive as they die when they reach the waste layer.
- The landfill gas is "vacuumed" from the "straws" inserted into the mass, transferred to a ring pipe which encircles the whole site, fed into the gas plant where it is cooled (which separates the leachate) before being piped into the city. It is used at QE2 pool, the Art Gallery, civic buildings and wastewater plant (for drying bio-solids). When not needed, it is flared. The flare is now too large for the amount of gas being produced and needs to be smaller.



The smaller hills seen north of the highest point are the sites of demolished Christchurch buildings post-quake, with the lowest hill comprising those buildings where people died, including 4 people who have never been found. They are commemorated on the signboard adjacent to the hill.

The new ponds are attracting huge numbers of birds. Water not suitable for people or dogs.



- All water within the landfill is regularly sampled and has to be below defined guidelines for toxicity. There are short standpipes protruding from the landfill hills where samples are taken.



Active site with harvested forest block and the very edge of Burwood Hospital on Right



Active site containing silts and land development soils.



Landfill gas plant showing large flare

The active site, (contractors KBs earthmoving) contains silt and other ground soils which are unsuitable for buildings. KBs also do the native plantings. Rangers monitor it but there are rough sleepers camping in the area at times, and people do come and set up campsites (not sure if they're moved on or if there's a time limit).



This is the site where 29,000 tonnes of rubble from the CTV Building and the PGC Building is buried.

On 22nd February 2011 at 12.51pm, a 6.3 magnitude earthquake struck Christchurch.

Tragically, 115 people who were in the CTV Building and 18 people who were in the PGC building lost their lives. Many others were seriously injured.

The names of 185 people who lost their lives in this earthquake are inscribed in stone at **Oi Manawa Canterbury Earthquake National Memorial**, Oxford Terrace beside the Otaharo/Avon River.

These landscaped hills and plantings were completed in March 2023

Four earthquake victims were never found or identified. This is their final resting place.

Thank you to Liz Gilbert and Gill for these notes and pictures

Future dates

Wed 15th Oct Rusty Acre garden \$15 entry fee. Car pool McCormacks Bay 10.15 or go there directly for 11am.

Mon 3rd Nov Toxic Plants, Prof Ian Shaw

Wed 19th Nov Bus trip to Castle Hill with Kate Pedley

You can contact me on 384 3475 or by email patwandpate@gmail.com