

SANDY & MUDDY SHORE

How do I survey my **Marine Metre Squared**?

- 1. Plan your trip to the shore or estuary.** You need to be on the shore at low tide. Tide times can be found by looking in the weather information section of your newspaper, or on the MetService website at <http://www.metservice.com/marine/tides/index>. Note: the tide levels change each day and often are lowest around the time of the new or full moon so you may not be able to find the same low shore level next time.
- 2. Gather your equipment.** For soft shore sampling you need:
 - A **square frame** (e.g. tie 4 x 1 m bamboo canes together, or use a 4 m length of rope with three knots tied on it at 1 m intervals that can be arranged into a square shape on the shore.)
 - A 10 cm x 10 cm quadrat (1% of your m²) – a ice cream container lid is very useful! Find out how to make one [here](#).
 - A 10 cm diameter **core** (e.g. a large fruit can 10 cm in diameter and approx.. 11.5 cm tall is ideal or a pipe or plastic container this size.)
 - A small **trowel**, a kitchen **sieve** and a **bucket**.
 - A small ruler, a hand lens and a camera are also useful.
- 3. Choose your Marine Metre Squared.** If you arrive at low tide, lay your square down near the sea. Record the shore level on the data sheet by ticking “Low”. If you want to put your square in the mid shore or high shore, then tick this instead. The top of the intertidal seashore is close to the seaweed drift line from the last high tide. To help you find your metre squared again draw a simple map, look for and photograph/record features that could help you on your next visit.
- 4. Take a photo.** Take a photo of your m² area with the top of your datasheet in the corner so that you can compare the features of your sample area with others.
- 5. Record your survey site information**
 - a. Describe the location of the site, (e.g. name of the beach or a local landmark). This can also be done using a GPS function on your phone.
 - b. Record the start time of your survey.
 - c. Record key features of the site, (e.g. presence of a fresh water stream, evidence of human influences).
 - d. It is useful to fill in as much information as possible before heading to the shore.
- 6. Record the type of ground surface (substrate) in your square (e.g. reef, boulder, etc.) in percentages.** This should add up to 100 %. If sand layered on top of reef – record the upper surface (in this case sand). Remember you can use your 10 cm² quadrat (1% of your m²) to help figure out the cover of substrate.
- 7. Look for evidence of what lives in your m².** You may find holes (borrow openings), worm deposits (faecal casts). Record these on your sheet.

TURN OVER FOR FURTHER INSTRUCTIONS!



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8. **Count animals and plants on the surface.**

- a. Measure the abundance of **seaweeds using percentage cover**. This is the percentage of the square that is covered by the seaweed when looking down.
- b. Start in one corner of your square and **count the animals** that you can see without moving any rocks or seaweed.
- c. If you find a species you cannot identify, write a description of it in the species list. If you can, take a photo of it with a ruler (if possible) in the shot to indicate its size. Write a brief description of where it was found and what it was doing. Email this information to marinemetresquared@gmail.com to help others to identify it later.

9. **Take a core samples.** Starting in one corner, push in the core to a depth of 10c m and use your trowel to dig it out.

10. If the sediment core remains intact, first **measure and record where the RPD layer starts** (from the surface). This is to see what lives just under the sediment and to measure the Redox Potential Discontinuity (RPD) level where **oxygenated substrates (light brown) change to deoxygenated substrates (dark and often smelly)** as this influences what lives where in the soft sediment.

11. Next, place the sample in the sieve and pour water through it to wash off the sand and mud. **Count and record** the different species. **Repeat in the other 3 corners of the square** (so you have 4 core samples in total – one for each corner!)

12. **Enter your information on the Marine Metre Squared website:** www.mm2.net.nz

13. **If you have any more questions** – contact us on marinemetresquared@gmail.com or via Facebook

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