



TREC
TRAVERSING EUROPEAN COASTLINES

TREC is a research scientific expedition and a scientific project that focuses on the coast of Europe.

TREC's goal is to observe and understand how the rapidly changing environment affects life at all levels, from the very small (cells) to the very big (ecological communities). During this project, researchers collect samples along the coast at more than 120 locations.

It is the first-time scientists are studying life at all biological levels, along the whole European coast.

Logos: EMBRC, European Marine Biological Resource Centre, Tara Ocean Foundation, TREC, and the European Union flag.

For more information scan the QR code or visit <https://www.embl.org/about/info/trec/>



5 What do you do with all these samples?

A sample is like a leaf. It can give you a lot of information, but it's only when you look at many leaves from many different trees that you can understand the health of a forest.

By taking samples, analysing each of them, and looking at all the results together, scientists are able to describe which organisms live in the environment, how they interact, what is their importance for that environment, how healthy they are, and therefore, by understanding, scientists can suggest ways of protecting our planet.

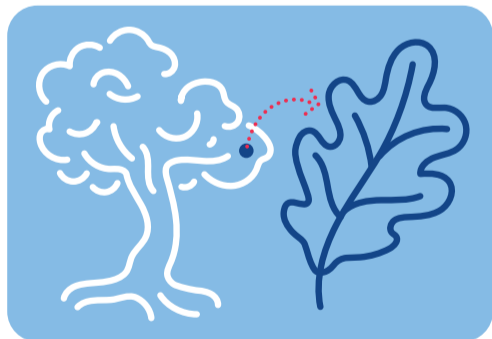
1 What is a scientific sample?

Imagine you are standing in front of a tree and you would like to know if that tree is healthy.

A way to answer this question is to pick a leaf from the tree and see if the leaf is healthy. Maybe you can even run some experiments with it to check what is inside the leaf - like doing a blood test to check your health.

Similarly, TREC scientists collect samples of soil, water, sediment, air and some organisms such as plants, worms and algae to understand what lives inside the environment we live in and how healthy the environment and the organisms are.

A scientific sample is then a piece of something that we would like to study to discover many things about the object of our research, which for TREC is: life (from viruses to big organisms) along the European coastline.



2 What do you use to take a sample?

The tools and strategies to take a sample depend a lot on what is the object of study, the environment where it lays, and the purpose of your study.

For example, trees come in many different shapes and forms. If you want to evaluate the health of a bonsai, you may need (small) tweezers to get its leaves. Instead, if you want to evaluate the health of a monkey puzzle tree (which is tall and spiny) you may need a ladder and gloves to get its leaves. What you do is the same (collecting leaves), but how you do it changes according to the leaves.

For scientists, sampling the environment is the same. What they do is the same (collecting a small part of something). But they use different tools (shovels, buckets, nets, bags...) according to what they are collecting.

As you can imagine, shovels work well for soil, and buckets work well for water.

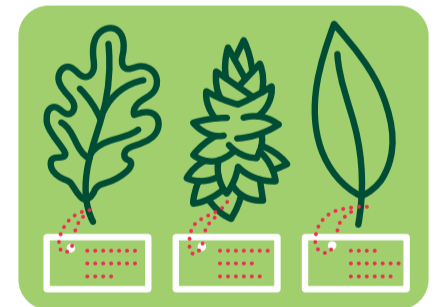


3 How do you take a sample ?

Let's say you want to compare the health of the bonsai and of the monkey puzzle tree. So, you are going to get leaves from both trees.

For your comparison to be fair, you need to get leaves in similar conditions. For example, getting dead leaves from one tree and live leaves from the other would probably give you very different results. You want to pick leaves in the same amount and conditions, then you will be able to do a good comparison.

To achieve this goal, scientists follow a specific set of actions (called 'protocol') to collect samples. Protocols describe in detail what to do to get a sample, thus ensuring that the information that the samples generate can be compared.

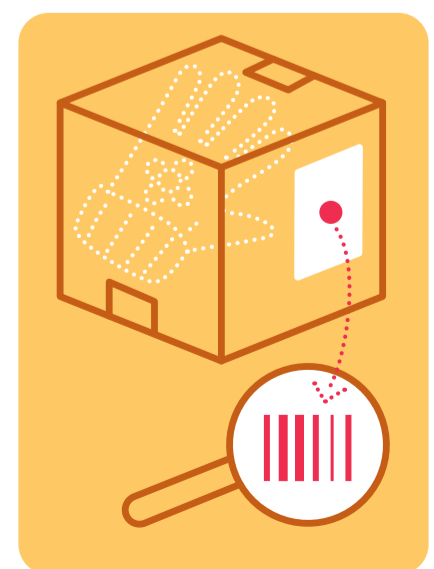


4 How do you track samples?

Like a parcel! When you buy something online (like gloves for gardening), it gets shipped with a barcoded label.

Using that barcode, the people involved in delivering your parcel know where the box is coming from, where it is supposed to go, and to whom it belongs.

Similarly, each scientific sample is stored in a barcoded container that lets scientists know where and when the sample was taken. This is very important because TREC will collect thousands of samples!



Run, scientist run!

Be the first one to get the samples! Like a scientist in the field, do your best to collect samples and bring them back to the laboratory.

But be careful: anything can happen and your race might be sped up - or slowed down!

HOW TO PLAY

'Run scientist run!' is a race game, where the first player to reach the end wins.

Each player puts a token on the start area (you can use the tokens at the bottom of the board or items of your choice). The youngest player starts by throwing the dice (use 1 dice for 2 to 4 players, and 2 dice for 5 or more players). Players move their tokens forward by following the number(s) shown on the dice.

To win the game, a player must reach the finish area after space 61.

If a player lands on one of the following spaces, that player must follow the stated rule:

- 4** The expedition just started:
→ you have extra volunteers to help carry the gears, skip to number **11**
- 8** You forgot to charge the GPS battery:
→ go back to the power plug on number **3**
- 15** There is a storm:
→ skip a turn and wait for the storm to pass
- 17** Local guides help you find the right spot for sampling:
→ to see where they are leading you, throw the dice again
- 25** The cows are standing on your sampling spot.
→ Go back to your accommodation on number **19** to rest and try again tomorrow
- 32** The mobile laboratory has arrived! All the samples can be swiftly processed.
→ Go to number **45**
- 40** The local research centre brings you a delicious meal.
→ Full of energy to sample, throw the dice again
- 47** The water is full of jellyfish!
→ Skip a turn and wait until they leave
- 52** You give a talk in a local bar and people are enthusiastic about what you are doing!
→ Fully motivated, rush to number **56**
- 58** Your sampling location turns out to be a protected natural reserve.
→ You cannot sample here, so back to number **1** and start over

Good luck and thank you for playing with us!

