

A hiker with a backpack stands on a rocky mountain peak, looking out over a vast range of snow-capped mountains under a clear blue sky.The ERGA logo features the word "ERGA" in white, with a stylized European Union flag (a circle of stars) integrated into the letter "E".

ERGA

The iBOL EUROPE logo features a stylized DNA double helix above the text "iBOL EUROPE".

iBOL EUROPE

July 2025

Connections

7. Science Needs You!

The European Reference Genome Atlas (ERGA) and the European node of the International Barcode of Life (iBOL Europe), two international communities of scientists brought together under the Biodiversity Genomics Europe Project, are joining forces for a series of blog posts that explore the fascinating world of Biodiversity Genomics and the intersection of their communities.



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Co-funded by
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Science needs you!

BY CHIARA BORTOLUZZI, KASIA FANTONI, CHRISTIAN DE GUTTRY AND LUISA MARINS

Did you know you could be a scientist? In our [last post](#), we talked about biodiversity hotspots and bioblitzes. Now we are talking about citizen science, a fancy term for regular people helping out with scientific research. If you have ever counted birds in your garden, taken a photo of a cool bug to share online, or helped clean a beach while noting what you found, congratulations, you are a citizen scientist! Let's explore what this means and why even the biggest biodiversity projects need people like you on board.



Citizen Science

What does "Citizen science" mean?

The term might sound too formal, but it is pretty simple: citizen science is science done by everyone. The term only became popular a few decades ago, but the idea has been around for much longer. Think of the Audubon Christmas Bird Count that's been running since 1900, where volunteers nationwide count birds every winter, that's classic citizen science in action. In 2014, the Oxford dictionary defined it: it's when non-scientists work with scientists to do research. And a citizen scientist just means someone who is not a professional scientist but volunteers to help out. In this context, the word "citizen" is not about passports or politics; it just means people, any people who want to contribute.

Now, many people hear “citizen science” and picture volunteers trekking through the wilderness collecting things like soil or water samples. It is true, **some** citizen scientists do go outdoors, scoop pond water to look for DNA traces of creatures, or set up insect traps on mountaintops. But that is just one part of the story. Citizen science is done **anywhere** by **anyone**. You can do it in a city apartment, a classroom, or on your computer at home. For example, you can help botanists track blooming times, play an online game that maps a neuron in the brain, or dive into the sea to collect floating DNA clues to help scientists spot invasive species. Without these citizen champions, covering so much ground (and water!) would take ages, or might never happen at all.

Who are citizen scientists?

- Members of the public from all walks of life who voluntarily contribute to scientific research.
- Collaborators at any stage of the scientific project lifecycle.
- Individuals driven by curiosity, passion for nature, community interest, or the desire to make a difference by helping scientists answer questions.
- Partners who expand the reach of research to locations unreachable by professional scientists.



Why do scientists need citizen scientists? Because the world is such a large place and lots is happening out there! Professional scientists might have advanced gear and training, but there are only a few of them. Imagine trying to keep track of every bird, insect, fish, and flower across Europe. It is like reading every book in a giant library by yourself. Impossible, right? But with thousands of volunteers reading a page or a chapter, the job becomes doable. Biodiversity genomics needs helpers! In the Biodiversity Genomics Europe project, citizen scientists have joined expeditions and lab days. Some were bug enthusiasts catching and identifying insects to build a DNA “barcode” library of species, while others were speleology enthusiasts collecting organisms in caves. Citizen science makes science more personal and fun. When you participate, you are not just sending data into a void. You become part of a discovery.

How to become a citizen scientist? Being a citizen scientist can be extremely rewarding. You might be the person who finds a new population of a rare butterfly, or whose data shows that a once-common frog species is now in trouble. Plus, scientists and volunteers learn together. How to make that happen? The first thing that comes to mind is to join a fieldwork organised by researchers in your proximity. In these cases, citizens learn new skills (like how to handle DNA samples or identify species) and professionals get local insights and extra hands (or eyes). Science stops being a distant thing in a lab and turns into a community adventure. But you can also do it yourself and with your smartphone only, by uploading media (pictures, audio...) of the biodiversity around you through some specialised apps, such as ObsIdentify, iNaturalist, MerlinID. Then, experts review your media and assign them to a species.



The biggest takeaway is that science needs you. Protecting biodiversity and understanding it through DNA is a huge mission, and everyone has a role to play. You do not have to be an expert to make a difference. Each bird counted, each sample collected, and each photo shared can add a piece to the puzzle of life on Earth. So next time you hear about a citizen science project, why not give it a try? By joining forces, we can discover more, faster, and work together to keep our planet's amazing biodiversity safe. Stay tuned for more adventures in our series, who knows, maybe we will feature a discovery made by a citizen scientist just like you!

