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AMBIOS PORTUGAL

GEIA

YEARLY AMBIOS PORTUGAL MAGAZINE

THE OCEAN ON THE SAND

Read about the ARROJAL project

SEEDS FOR THE FUTURE

Get to know the fundamental resource that is a seed bank

Find out about Ambios Ltd's multifunctional vegetable garden!

GEIA No. 6 12/2025

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ÍNDICE

AMBIOS PORTUGAL

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is a non-governmental not-for-profit organization founded in 2018 and based at the Cork Oak and Cork Observatory in Coruche, Portugal.

Ambios Portugal was founded by a team from universities, non-governmental organisations, companies, and the public administration, with links to the environment sector.

The principle of Ambios Portugal is to contribute with the professional experience and skills of each member to achieve a common goal: promote the conservation of biodiversity, sustainable development, and social involvement within these goals.

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EDITORIAL

This year brought big changes. Shirley moved to the United Kingdom and I started a new career path. Shirley bet everything on a new country, and I bet everything on a new institution in another city. Ambios had to follow suit, first entering a state of hibernation without us, saving its energy for the following spring. Then, slowly waking up, gradually resuming activity as we were able to devote time to it again.

Change is difficult, but it is what allows us to expand our comfort zone. It is what enables us to explore the world beyond our horizons.

Ambios also embraces change, like a chrysalis patiently waiting for the moment when it can fly, now a butterfly.

And our GEIA also had to wait for this new beginning. There was no edition in 2024, because that was the year the transition began. But now it returns, giving a voice to various people who work or contribute voluntarily to nature conservation and the sustaina-

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bility of life on our planet. A difficult challenge, at a time when the climate and biodiversity crises are compounded by the threat of large-scale war.

The world is also facing major changes. Let us see them as opportunities to reveal, more and more, the best in ourselves. If we do not, we will be seriously jeopardising the future of the planet – and our own.

In the following pages, we will focus on positive actions in favour of our planet in turmoil. Such as the work of researchers who rescue and study marine mammals and reptiles washed up on Portugal's beaches, or those who contribute to the global 'seed vault' in Norway. We will draw inspiration from the testimonies of volunteers who have kindly shared with us their experience of working with a collection of insects in Madeira and with the Big 5* in a reserve in Africa.

We will also look at the heather crab spider, learn new techniques for recording our observations in a nature journal, and learn how an organic vegetable garden can be so incredibly multifunctional, providing much more than food for an entire community.

It is admirable what we can achieve when we cooperate towards a common, benign and transformative goal, supported by the best knowledge we have of the world around us.

And that is where change begins.

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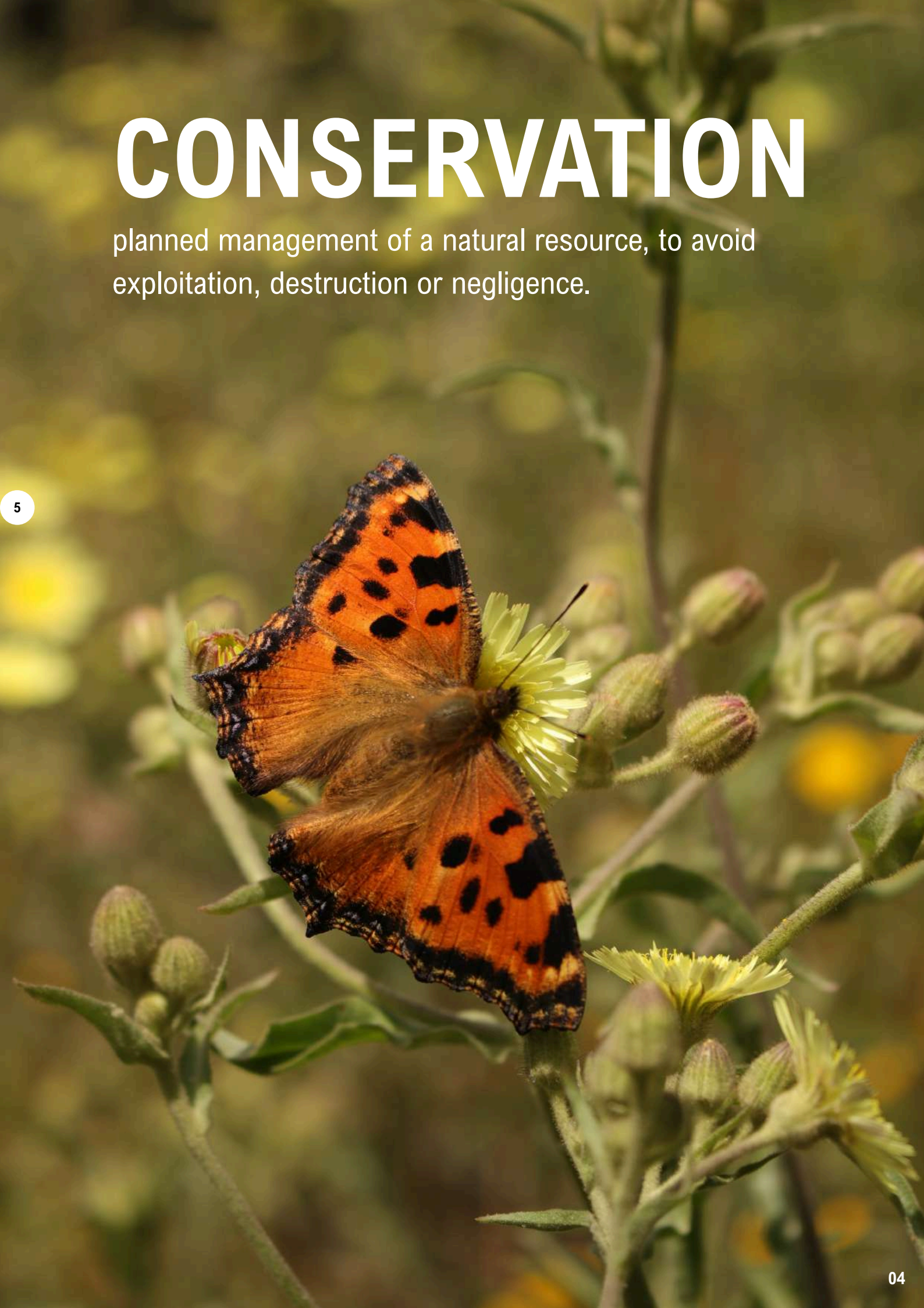
* The term 'Big 5' refers to five large African mammal species that were historically considered the most difficult and dangerous to hunt on foot: elephant, rhinoceros, African buffalo, leopard, and lion. Today, the expression is used mainly in nature conservation and wildlife tourism, symbolising the ecological and cultural importance of these animals and the international effort to protect their populations.

CONSERVATION

planned management of a natural resource, to avoid exploitation, destruction or negligence.



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THE SEA ON THE SAND

STRANDING OF CETACEANS AND MARINE REPTILES ON THE ALENTEJO COAST

It's an unexpected call on the phone that changes the rhythm of the day: a large animal was spotted beached along the coastline. Is it a dolphin, a sea turtle, or a whale? Is it alive? What should we do? The marine biology team from the University of Évora reacts quickly, coordinating with authorities and visitors to guarantee a safe and efficient intervention.

What we call stranding, when cetaceans or marine reptiles get stuck on the beach, alive or dead, is more than just a dramatic event. It's a window to the ocean. Each animal that appears on the coast tells us a story about marine life and the challenges it faces.

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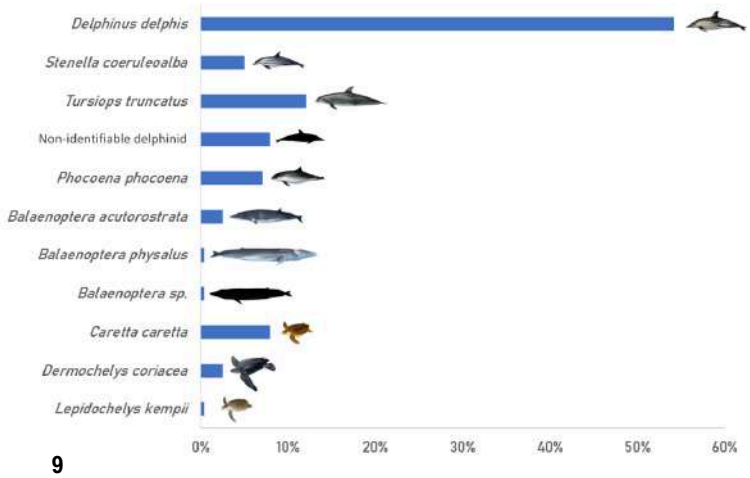
To systematically follow these events, in 2021 the ARROJAL - which translated stands for Support for the National Stranding Network - Alentejo Regional Network - project came into being, resulting from a collaboration between the University of Évora, the Institute for Nature Conservation and Forests and the *Fundo Ambiental* (the Portuguese Environmental Fund).

The project has clear objectives: registering occurrence and distribution patterns of the main species of marine mammals and reptiles that appear on the continental Portuguese coastline; collect and preserve biological samples; coordinate response to stranding; and teach local communities about these events.

Since then, 240 animals have been registered along the close to 130km of Alentejo coastline: 206 dolphins, 8 whales and 26 turtles, of nine different species. The majority of alerts, around 50 per year, comes from attentive citizens. Unfortunately, many of the stranding incidents (>40%) are connected to human activities, like interactions with fishing activities and accidental captures.

The study of these animals offers a unique opportunity to understand their ecology. The samples obtained can reveal clues about diet, accumulated pollutants, and the genetic connections between populations, helping to construct a detailed picture of the marine ecosystem and the role of each species.



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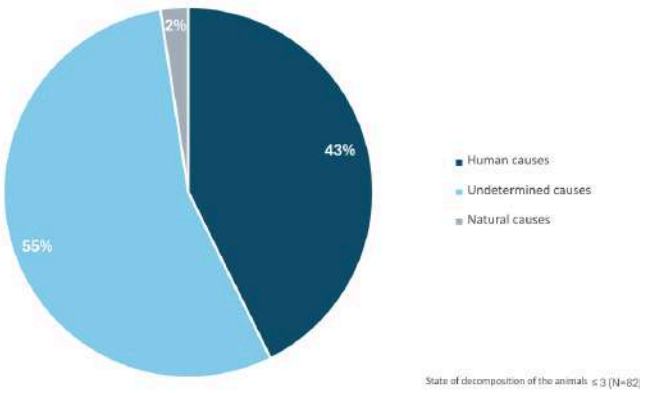

Source: ARROJAL; Illustrations: J. T. Tavares

The project goes beyond science: environmental education is central. Hundreds of people, from young to old, have participated in activities that promote the conservation of marine life, sharing knowledge about the ecology and biology of these animals, the pressures they are subjected to, and how to act when encountering a beaching.


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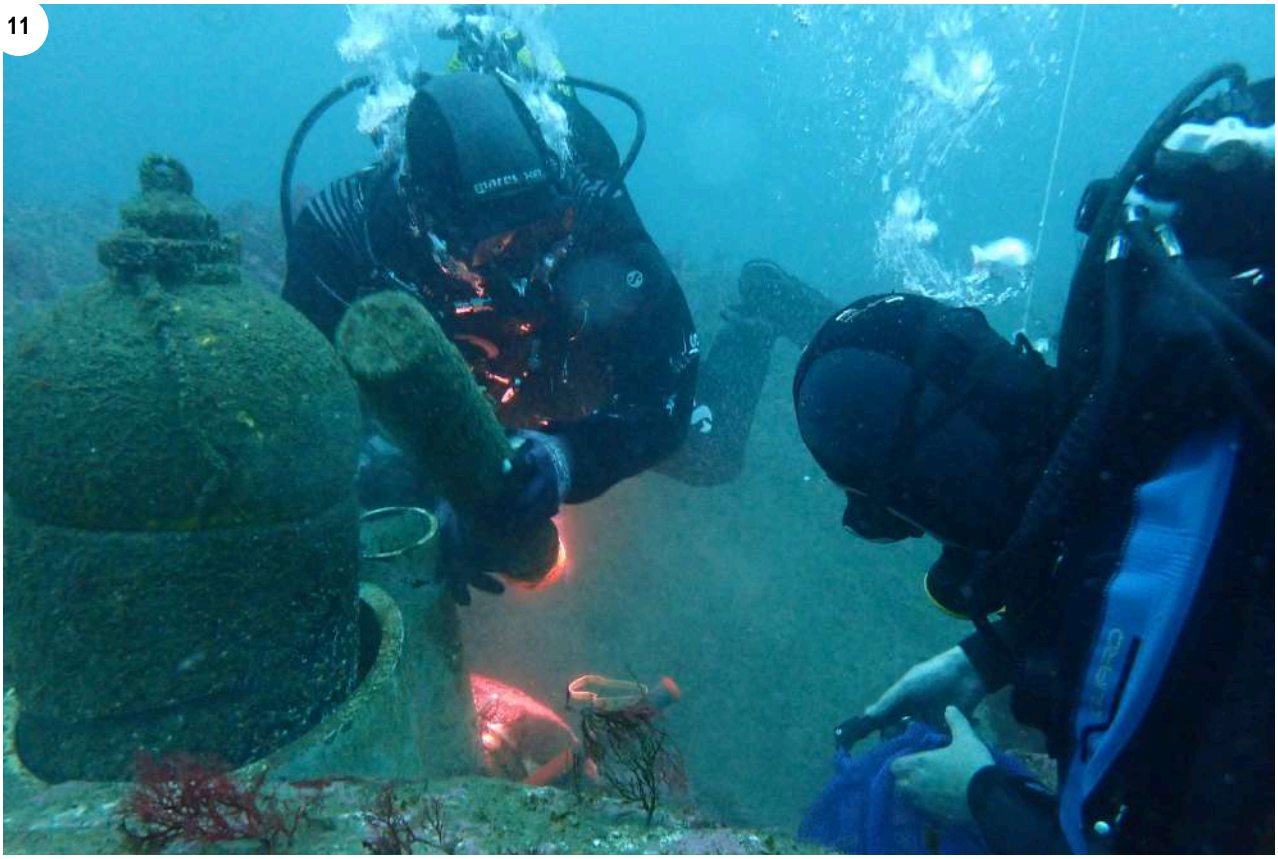
Other initiatives include the maintenance of a passive acoustic monitoring network for the detection of toothed whales along the Alentejo coast, the first of its kind in Portugal. This technology allows the user to register the presence of dolphins without disturbing them, which has shown that the Alentejo coast is an important area, especially for the harbour porpoise (*Phocoena phocoena*), a species that is important for conservation efforts. Locations such as Porto Covo, at the north section of the *Parque Marinho do Sudoeste Alentejano e Costa Vicentina*, stand out as essential places for the conservation of this species.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Despite the importance of the work developed by this and other similar teams, its continuity isn't guaranteed. Funding through the *Fundo Ambiental*, which has sustained the National Stranding Network and assured the response to these events along the coastline of the continent, lacks a predictable timeline and the guarantee of continuity, which has led to the temporary cessation of work in some parts of the country.

Without continual and assured financing, part of the work, from the training of teams to the consolidation of a network of contacts could be compromised, equally effecting the capacity to monitor and characterise these events and to respond to international reporting responsibilities (for example ICES - International Council for the Exploration of the Sea; DQEM - Framework Directive on Marine Strategy, IWC - International Whaling Commission, amongst others).

Each stranding is an alert. Not just for the animal in danger, but for all of us: the oceans are changing, and we are part of that change. Monitoring, studying, and sharing information is more than science, it is about protecting our coast, safeguarding marine life, and moving towards a more conscious and responsible co-existence with nature.

David Jacinto, Beatriz Reis e Francisco Neves – MARE | ARNet | University of Évora

The ARROJAL project results from a technical and financial collaboration protocol between the *Fundo Ambiental*, the University of Évora and the Institute for Nature Conservation and Forests (ICNF).

This project aims to establish a regional network of response to stranding of cetaceans and marine turtles along the Alentejo coastline, from Troia to Odeceixe, integrating the National Stranding Network.

The National Stranding Network is is coordinated by the ICNF, and was established for the 1st time in 1979. The network is now divided into regional branches (North: CRAM; Centre: RALVT; Alentejo: ARROJAL; Algarve: RAAlg) coordinated by different entities, so that response to strandings of marine reptiles and mammals can be quicker and more efficient. The network's function also depends on other entities such as the National Maritime Authority, Municipalities, Lifeguard Associations and non-governmental organisations that collaborate directly or indirectly to respond to strandings.

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The ARROJAL project's aims are to respond to strandings of dead animals, aid in the rescue of stranded live animals, support pedagogic and scientific activities, manage data and contribute to the preparation and preservation of samples for the tissue bank.

The project's team is constituted by investigators from CIEMAR – Marine Sciences Laboratory of the University of Évora, of MARE – Marine and Environmental Sciences Centre, and of the Associated ARNET Laboratory − Aquatic Research NETwork. Beyond the permanent team, the project also has been aided by numerous volunteers and students from different universities, that have and continue to contribute a lot to aiding the project's objectives.

ARROJAL Project

@arrojal_arrojamentos_alentejo

www.uevora.arrojal.pt

SEEDS FOR THE FUTURE

HOW WE PROTECT OUR AGRICULTURAL BIODIVERSITY

A batch of blue boxes arrives at Svalbard airport and passes through security, just like any other piece of luggage. A short journey of less than three kilometres awaits them, to the place where they will be stored for the next few centuries. A dark, narrow structure with straight lines stands out against the white snow. This is where the van stops and the boxes are taken inside. Each box is labelled with a barcode that links it to a database.

Inside four of these boxes are sealed bags in which the Portuguese Plant Germplasm Bank has stored traditional Portuguese seeds of corn, rye and barley.

The 45-metre tunnel that descends to the three seed chambers is watertight and was built using the same technology as the oil platforms in the North Sea. In total, these chambers can hold four and a half million seed samples – the largest collection of agricultural diversity on the planet. If properly dried and stored, these seeds can retain their germination capacity for several hundred years.

Photo by Frode Ramone

In this vault built into solid rock on Plateau Mountain, 130 metres above sea level, the seeds are kept at minus 18 degrees. But what makes it even safer is that it is located under the permafrost – a type of soil in the Arctic region, formed by ice, earth and rocks, which remains frozen at all times. Even if the cooling system fails and the outside air temperature rises due to climate change, the permafrost will keep the seed chambers at the bottom of the vault naturally frozen.

Conserving plant genetic resources is essential for the future of humanity, and this vault – the Svalbard Global Seed Vault – holds a backup copy of the world's seed diversity. It is a secure facility, in operation since 2008, on a remote island in Norway. If any country loses its own seed bank, having a copy in Svalbard means it can start growing its seeds again.

Just like in a bank, only the depositor can withdraw their seeds from the vault. The seeds stored in Svalbard remain the property of the original gene banks, under a multilateral agreement between more than 150 countries – the International Treaty on Plant Genetic Resources for Food and Agriculture, under the Food and Agriculture Organisation of the United Nations (FAO). Portugal signed this treaty in 2002, which was approved by Decree-Law No. 22/2005 of 26 September.

According to the FAO's Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture, 2025, the Portuguese Plant Germplasm Bank of the Portuguese National Institute for Agricultural and Veterinary Research (INIAV) holds the fourth largest collection of maize in the world.

The main crops subject to plant breeding, genetic improvement and diversification efforts in Portugal are cereals, legumes, fruits, vegetables, fodder, medicinal and aromatic plants.

The National Plant Breeding Station of Elvas (INIAV), the Higher Institute of Agronomy and the Germplasm Bank of the University of Madeira also contributed to this FAO report.

The Svalbard Global Seed Vault is managed in partnership by the Norwegian Ministry of Food and Agriculture, the regional gene bank NordGen and the independent international organisation Crop Trust.

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This vault safely stores duplicate seeds from gene banks around the world, protecting the global food supply from losses caused by accidents, mismanagement, funding cuts, conflicts, disease or natural disasters.

This “insurance” has already been used once, during the war in Syria. To protect its collection, the International Centre for Agricultural Research in the Dry Areas (ICARDA) transferred 141,052 seed samples from Syria to Svalbard between 2012 and 2014. In 2015, the first seeds were removed from Svalbard to begin rebuilding the collection elsewhere. As a result, 99% of this crop diversity has been preserved for future generations.

Ines Roque

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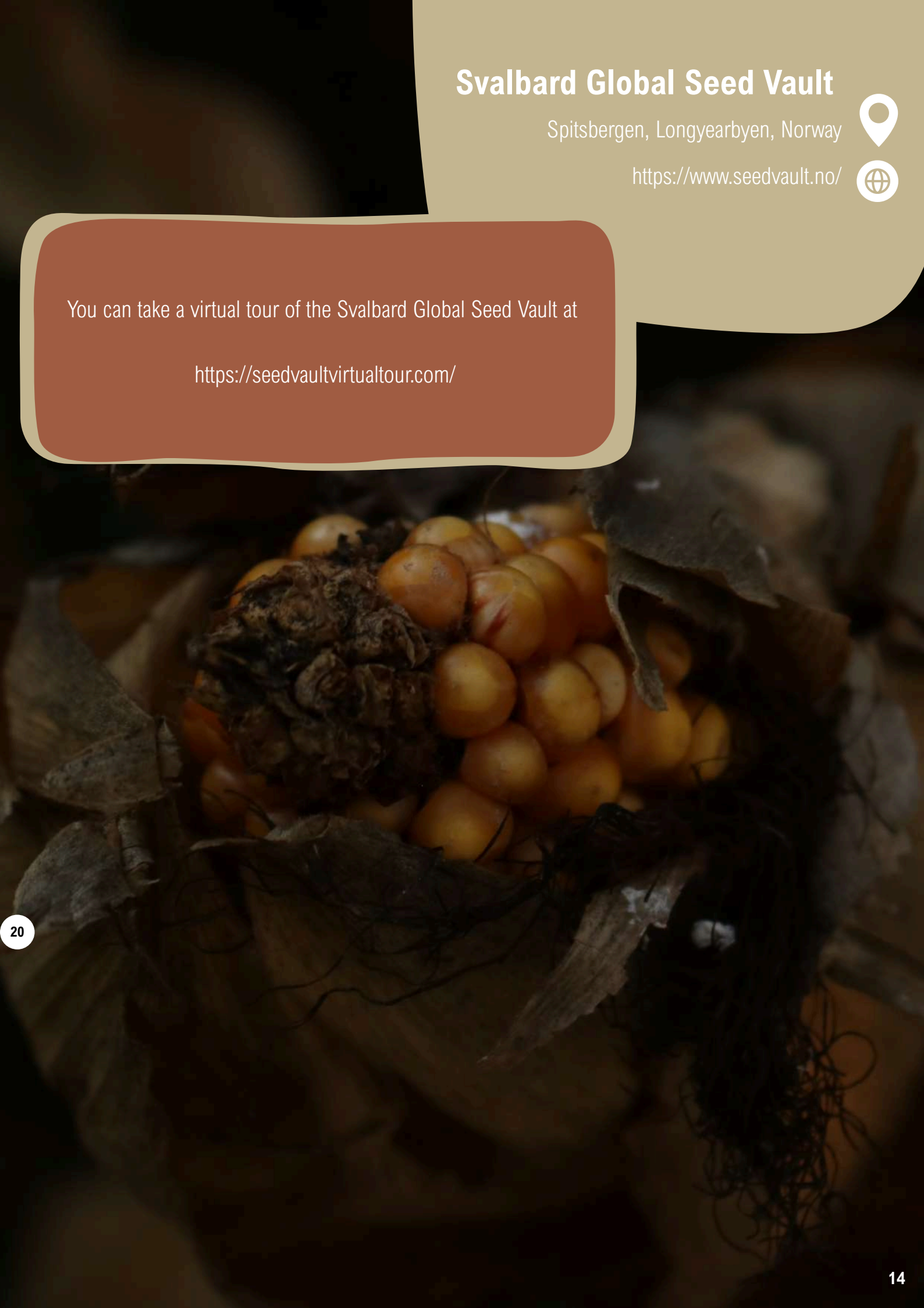
Svalbard Global Seed Vault

Spitsbergen, Longyearbyen, Norway

https://www.seedvault.no/

You can take a virtual tour of the Svalbard Global Seed Vault at

https://seedvaultvirtualtour.com/



Luena Soraya - Volunteer

UNIVERSITY OF MADEIRA (UMACI)
Funchal, Madeira

KARONGWE PRIVATE GAME RESERVE
South Africa

Beatriz Maia - Volunteer

IN MOBILITY

UNIVERSITY OF MADEIRA'S (UMACI) INSECT COLLECTION

Funchal, Madeira

Luena Soraya - Volunteer

MOBILITY IN

UNIVERSITY OF MADEIRA'S (UMACI) INSECT COLLECTION

Funchal, Madeira

I got to know the University of Madeira's Insect Collection when I arrived to work on my master thesis about insects on the island. At the time, I was doing a master's in Conservation Biology at the University of Évora, revolving around endemic species of the archipelago. It was in that context that I found out that the collection maintained a in-person volunteer programme. They were looking for people to help with the organisation and curating, and I decided to take the opportunity. I had always been very interested in insects, so it seemed to be the ideal place to spend some of my free time and learn more.

I started volunteering in July 2023 and stayed involved until March 2025, in a time of my life that would become more remarkable than I could imagine. In the beginning, I participated alongside volunteers and the more experienced technicians, observing and learning. With time, I gained autonomy and started working independently, working my own hours. The tasks were varied, making each day different. In the laboratory, I spent many hours mounting insects, especially leafhoppers, as well as digitisation and labelling of exemplars that would officially become part of the collection.

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There was also organisation tasks such as verifying that environmental conditions were optimal, keeping the boxes clean and verifying that all the specimens were correctly identified. Beyond that, I participated in field trips and environmental education and outreach activities, bringing the insect world to schools and events. This experience was better than all of my expectations. Being surrounded by so many different species, learning about other groups and working side-by-side with people that shared my passion was profoundly enriching. This constant contact with the insect world allowed me to develop competencies that were essential — from being rigorous in my work and communicating clearly, to teamwork. There is a spirit of help and enthusiasm that makes each activity, in or out the laboratory, an opportunity for growth.

This period changed me in many ways. Beyond the technical capabilities, I gained a deeper understanding of the role of scientific collections in nature conservations. Each insect preserved is a fragment of Madeira's natural history, and a valuable tool for investigation and education. The volunteer work amplified my network of professional contacts, opening new doors to new opportunities for internships, collaboration and work — experiences it would be difficult to access any other way.

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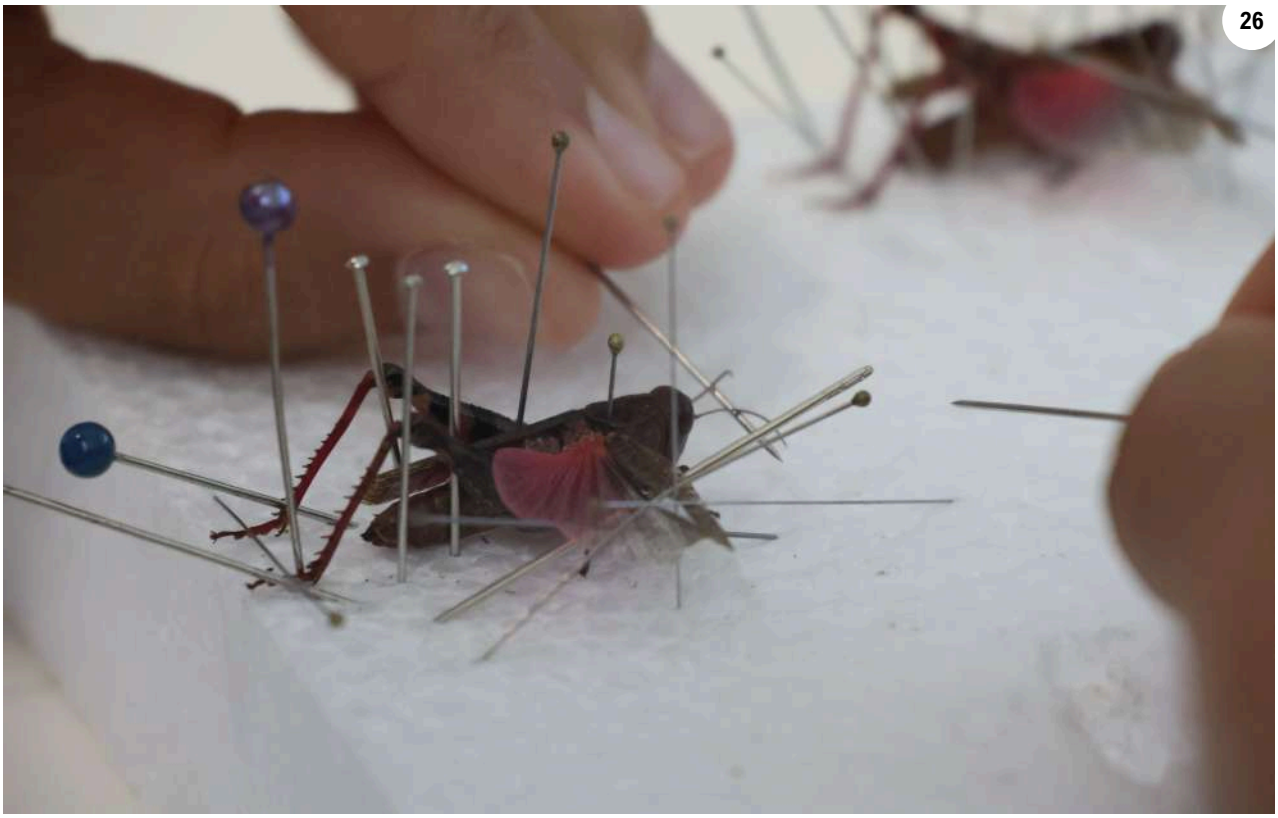
Participating in this volunteer work has made me look at nature with more attention and respect. There is an immense beauty in the small details — and insects, so often ignored, are proof of that. So I recommend this experience to those who have a curiosity about or a love for nature: the reward is ample; in knowledge, in experience, and in the feeling of contributing to something that really makes a difference.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UNIVERSIDADE da MADEIRA

COLEÇÃO DE INSETOS
UNIVERSIDADE DA MADEIRA

University of Madeira's Insect Collection
Faculdade de Ciências da Vida
Campus Universitário da Penteada
9020-105 Funchal - Portugal

https://entomoteca.web.uma.pt

Main curator (Dora Aguín-Pombo) aguin@staff.uma.pt

@umaci

UMACI.fcv

University of Madeira's (UMACI) Insect Collection belongs to the University of Madeira and was created in 1998. It is dedicated to the study and preservation of entomological biodiversity of the archipelago, coalescing a vast amount of endemic species of Madeira, many of which aren't present in larger collections, which grants it worldwide importance. The collection is divided into two main cores — the dry collection and the alcohol-preserved collection. The first is organised into three big subcollections: the collection specifically of the Hemiptera Auchenorrhyncha, the one of medical and veterinary interest, and the pedagogic collection, constituted of materials collected by students. Beyond being a fundamental resource for regional, national, and international investigation, UMACI also holds a teaching and scientific information role, supporting education projects and the dissemination of knowledge about the local insect fauna.

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OUT MOBILITY

THE YEAR THAT CHANGED MY LIFE: MY EXPERIENCE IN WILDLIFE CONSERVATION AT KARONGWE RESERVE

Karongwe Private Game Reserve, South Africa

Beatriz Maia - Volunteer

OUT MOBILITY

THE YEAR THAT CHANGED MY LIFE: MY EXPERIENCE IN WILDLIFE CONSERVATION AT KARONGWE RESERVE

Karongwe Private Game Reserve, South Africa

When I finished my bachelor's in Biology in 2014, I felt profoundly divided when it came to my future. Continue and do a master's? Look for work? Or stop for a bit to breathe and understand what I truly wanted to do as a biologist? My father, who lived in Angola at the time, suggested I do a Gap Year – a year to explore, grow and gain practical experience. The idea of going to South Africa, to do volunteering and to work with wild animals made a lot of sense. Just like many kids from my generation, I grew up watching "The Lion King" and the dream of seeing Africa beyond the screen had been with me since I was little.

After many hours of research, I chose a six-month internship with GVI (Global Vision International) in Wildlife Conservation. The initial plan was to spend three month at a nature reserve, and the remaining three at another institution. *Spoiler alert:* I liked the first three months so much — and they liked me so much — that I ended up staying the full six months at the same reserve: Karongwe.

Life at the reserve was anything but conventional. Our house didn't have fencing, we lived with limited electricity and very basic structures. Some days there was no water to bathe with, because the elephants would pull the pipes apart, searching for fresh water. Other nights we'd wake with the roaring of lions, so close they seemed to be at the window. Finding venemous snakes in the bathroom was not an uncommon experience. There, nature dictated the rules, and there was never a dull day.

The work was intense and profoundly gratifying. We learned to use telemetry to monitor the movement of the animals, identify species, run surveys and follow clues on the ground. We collected data about lions, leopards, rhinoceros, elephants, buffalos, cheetahs

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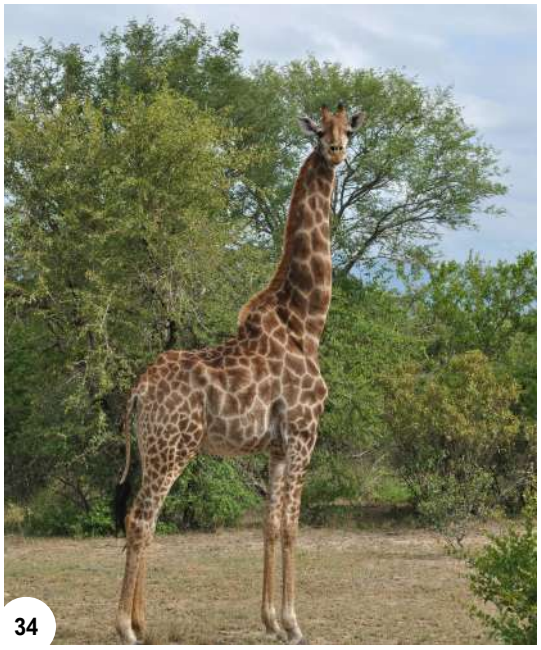

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and spotted hyena. We also participated in bird and invertebrate counts, removal of invasive species, maintenance of roads and production of environmental education materials.

Our days started around 3:30 to 4am. Our packs were prepped the night before, due to our early starts. We'd get into the open-top vehicle and leave in search of key-species within the reserve. Some animals were GPS tracked, others we found through tracks and previous sightings. Finding them was essential not only to collect scientific data. but also to inform the lodges, guaranteeing that visiting tourists had the best experience possible during safari outings. We'd return to the base at the end of the morning to rest, study and eat. In the afternoon we'd be back out again repeating the process until the sun set.

Seeing, for the first time, these animals that I'd only ever see in documentaries was unbelievable. There is something profoundly moving about being face-to-face with an elephant, a lion or a cheetah in their natural habitat. We feel small, humble and privileged. I shared this experience with people of varying ages and nationalities. I learned about conservation, ecosystems, cultures, languages and, above all, I learned about myself. Those six months changed my life — and solidified that my path would always be beside nature.

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GVI (Global Vision International) is an international organisation dedicated to conservation projects, investigations and community development in different parts of the world. Since 1998, GVI has worked in partnership with scientists, governments, local communities and private reserves to promote sustainable projects with real impact. Their programmes offer practical learning in areas such as wildlife conservation, marine investigation, environmental education, and community development. Beyond the scientific component, GVI is notable for its strong ethics, for its local capacitation and for the creation of learning opportunities for volunteers and interns from all over the world.

Karongwe Nature Reserve, situated in the province of Limpopo, in South Africa, is one of the most recognised private reserves, for its promise of biodiversity conservation and protection. Covering more than 9 000 hectares, Karongwe is home to an impressive diversity of fauna, including the iconic “Big 5”, as well as a large variety of birds, reptiles, and small mammals.

https://www.gvi.co.uk/

https://www.facebook.com/gvitravel

https://www.instagram.com/gvitravel

+44 1727 250 250

KEEPING A NATURE JOURNAL

Shirley Therese van der Horst
Biologist and Illustrator

WHAT IS A NATURE JOURNAL?

Nature journals are a visual and creative way of keeping notes on the natural processes and species in our local area, or any area we may visit. Their objective is to be informative, giving us clues on which species may be seen at certain times of the year, the behaviour these species may adopt, how they interact with each other and their habitat, and how populations can change over the years, among other data that can be gathered. At a personal level, nature journaling is good at tackling stress, connecting us to nature and allowing our brain time to focus on what we are seeing and how to represent that on paper. Thinking about how it can make us citizen scientists, data collected through nature journaling can be very useful for understanding local natural processes, changes in species diversity, and communication of this information to the general public in a visually appealing and simple manner. Here, I have decided to share a different experience of nature journaling each time, to hopefully inspire you to try it out!

Moving country definitely interrupted what little flow I had with drawing - I won't pretend - its felt like I've not had much time to do anything. Although the new landscapes and nature has inspired me, I've been woefully bad at keeping up the nature journal habit. However, on the times I spend on the train commuting to work, or the lovely moments I grab with friends birdwatching or having a wander, I try to be good and sketch a little. That's the beauty of nature journaling - it can be a quick sketch while commuting, or a dedicated time you've carved out of your day to spend sitting, observing and drawing, or even a bit of nature that you've collected a leaf, a flower, whatever takes your fancy (while of course being respectful of nature, as always!)

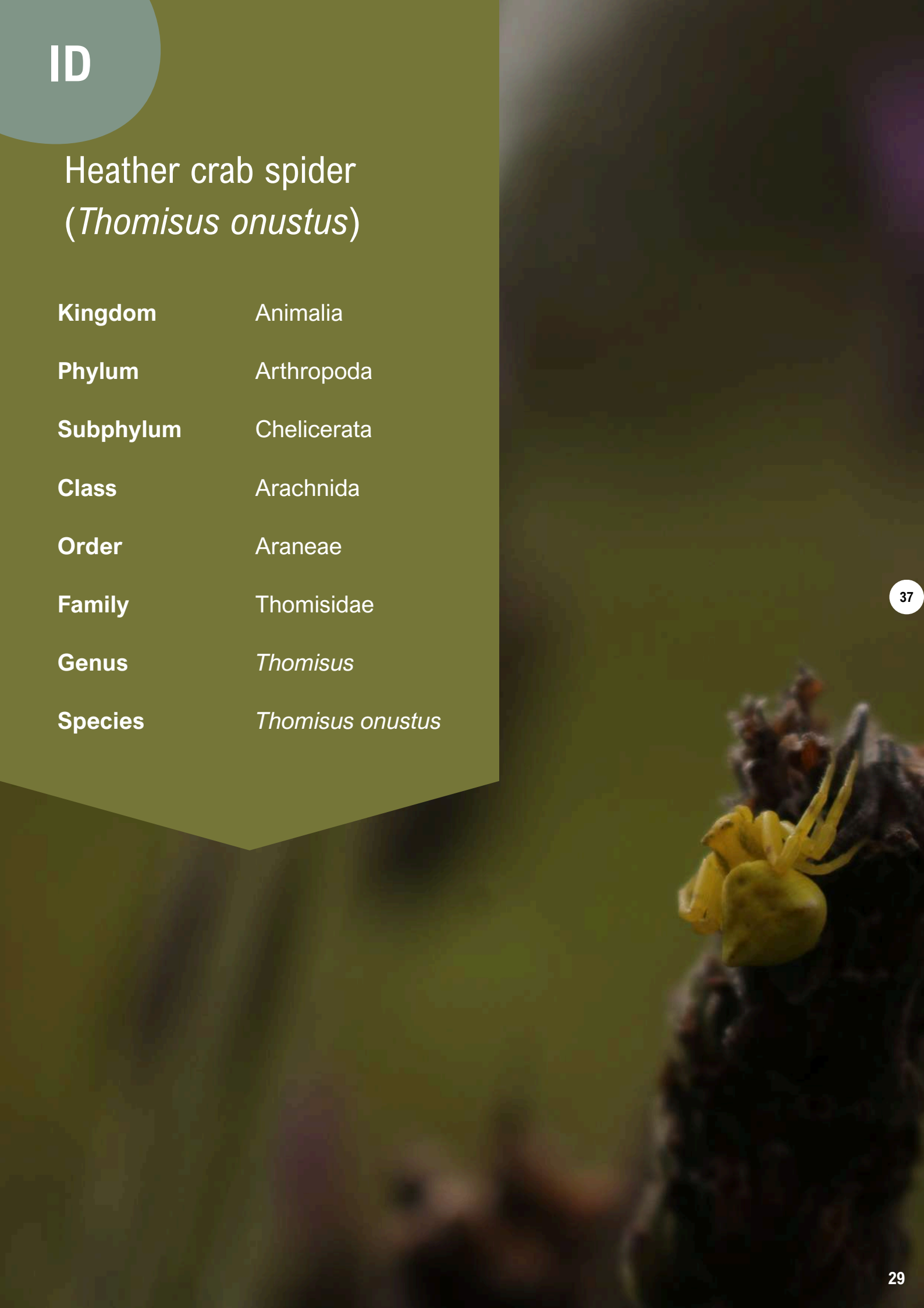
A new technique I've been enjoying

I've really been enjoying using a reduced number of coloured markers within the same shade range. It's a great technique for nature journaling as it lowers the number of stuff you need to drag along with you, as well as being an interesting challenge to figure out how to use the different shades to get the right contrast.

ID

Heather crab spider (*Thomisus onustus*)

Kingdom	Animalia
Phylum	Arthropoda
Subphylum	Chelicerata
Class	Arachnida
Order	Araneae
Family	Thomisidae
Genus	*Thomisus*
Species	*Thomisus onustus*



ID

If you've never noticed these remarkable spiders, you may not know that they can come in a variety of colours – and this variety isn't permanent! Heather crab spiders (*Thomisus onustus*) are able to, like some other animals, alter their colour to best suit their environment. Being predators, it's a great advantage to be able to blend into the surroundings and remain unseen by their prey until the last moment. This change is considered morphological not physiological, as it isn't instant (Cott, 1940), taking a few days to a few weeks to complete depending on which colour the spider starts and ends with.

They generally range from white to yellow or yellowy green. The females are the only ones that alter their colours, the males being smaller and being a constant brown or green-yellow colour.

This colour alteration is especially important as these spiders, also called flower crab spiders, hunt from open flowers, often yellow or white-petalled ones from the daisy family.

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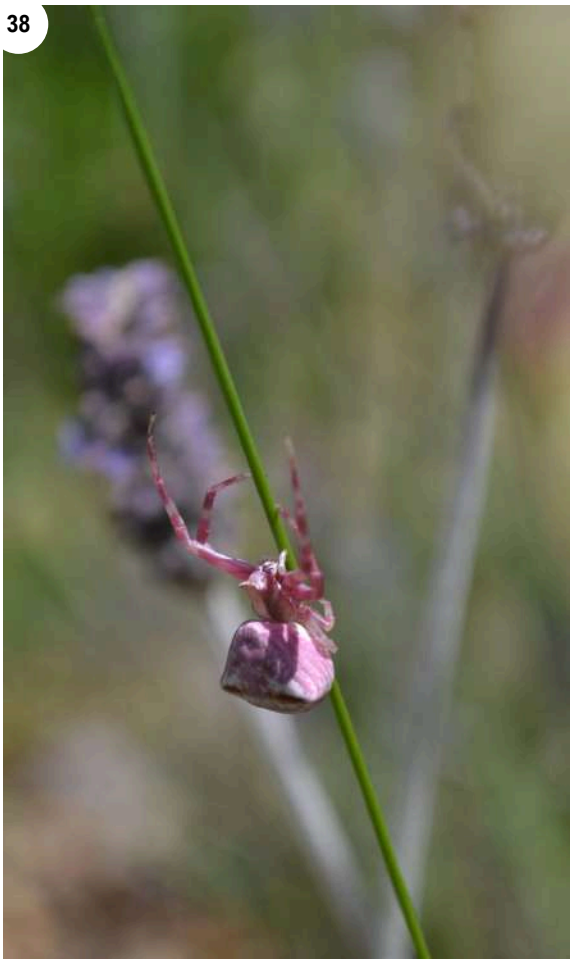

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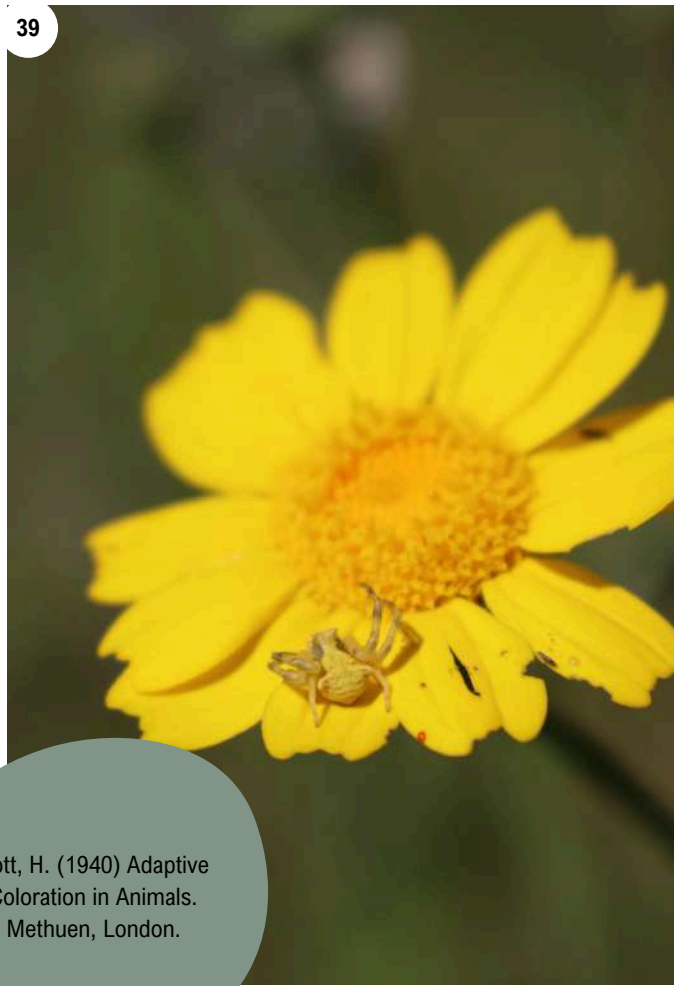

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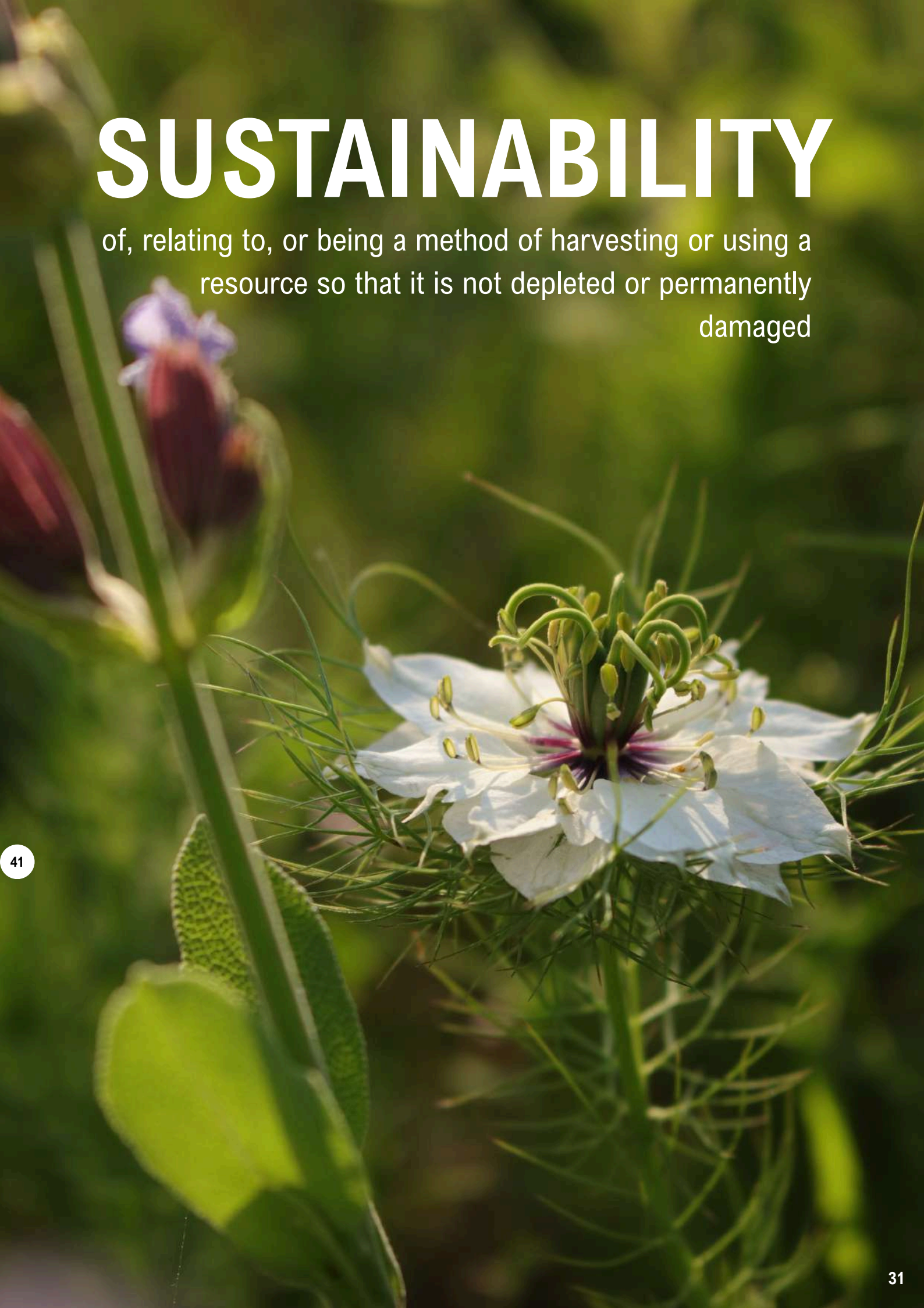
Cott, H. (1940) Adaptive Coloration in Animals. Methuen, London.



SUSTAINABILITY

of, relating to, or being a method of harvesting or using a resource so that it is not depleted or permanently damaged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A YEAR IN THE AMBIOS LTD. GARDEN

We are very lucky to have a one-acre organic garden at Ambios, which is visited and worked by a big range of people. The garden grows food for the team, serves as an educational space for learning about growing and many other topics, and is also a place many people come for mindfulness practices and nature connection. All of these functions of the garden have informed my work over the last year. The journey that has unfolded in the garden over that time is about balancing needs, listening and responding to nature, and the virtue of patience.

The questions I've been asking are:

- How can we evolve this garden to provide for and balance the needs of all (humans, animals, plants and fungi)?
- How can we grow organic, nutritious food and share it widely, as far as our capacity allows?
- How can we do this while repairing our soils and supporting the recovery of wildlife?
- How can we provide space and support for people in reconnecting with nature?
- How can we provide practical education that is contextualised?


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United Response is a charity that supports people with learning disabilities, autism and mental health needs, at home and in the community.

Many of the practices, projects, and systems we've implemented this year have answered more than one of these questions at once.

We did a lot of work on the Earthship (bottom right photo below; no.41), building a potting bench and kitchen, shelves for storage and a library of books and resources all from reclaimed wood from elsewhere on site. The Earthship is somewhere you can sit and meditate, read a book, sow seeds, do the potting on, make tea or soup, teach a lesson, and many other things… All with a view of the Dart Estuary! It has felt really important to develop a hub in the garden that meets the different needs of the people who pass through. The gardeners and trainees can now use the Earthship as a classroom and sowing/potting area; United Response can take shelter, have a seat and check the board for garden jobs; the Barn Retreat* residents can find a quiet spot for meditation; and school groups can gather there when they visit. In terms of growing, we focused on feeding our soils through using compost teas, adding nutritious mulch and minimising digging. We also adopted much more companion planting (planting different crops together) as a way of managing pests and disease, improving soil health,

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*_The Barn Retreat Centre_ is a retreat and meditation centre, located near the garden.


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biodiversity and yield… And the result has been vibrant! Luckily, United Response kindly made us a load of wooden signs to stick in the veg beds, which we've painted, to identify what's growing where. We have lots growing in the garden this Spring, and after the staff and trainees are fed (and sometimes the chickens and rabbit), we have been taking lots of surplus to Food in Community, who provide free veg boxes to people referred to them.

With a focus on caring for wildlife, the garden is surrounded by wild edges, including a pond and lots of piles of logs and brash. We have also been sure to leave some plants to go to seed, not only so birds and other wildlife can eat them, but we can also save the seeds for the next growing season, which we know are successful in our microclimate. Seed saving has been another big project this year, and we've got more seeds than we know what to do with! Luckily there are seed swaps organised by Schumacher College, so we have opportunities to give some away and come back with different seeds to try.

This year has been a big learning journey, about how to slow down and listen to nature, and work with its processes and diversity instead of against it. It has been heart-warming and rewarding to see the response of the garden and its ecosystem, and to see so many people enjoying the garden in different ways.

Annie Emery – Ambios Garden Facilitator


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Ambios Ltd. is a not-for-profit nature conservation training organisation. They deliver nature recovery traineeships and projects, that aim to develop skills and learning, and progress people towards their goals of working with nature.

Ambios offers a range of residential training options that provide you with the skills and experience needed for a career working with nature and its recovery.

See the full range of traineeships offered here:
https://www.ambios.net/category/training/

PROJECTS

Citizen science: how we can help control the water hyacinth in the Sorraia River

Ambios Portugal was a partner in the Project for the Eradication and Control of Invasive Species in the Sorraia River: Water Hyacinth and Water Pine, led by the Coruche Municipality and funded by the Fundo Ambiental.

Our association was responsible for producing communication content and supporting the Municipality team in raising awareness among the school community. In February 2025, we visited Coruche Secondary School and explored many interesting facts about the water hyacinth (*Eichornia crassipes*), a species native to the Amazon Basin in South America, which is one of the most problematic invasive species in the world – and also in the Sorraia River.

So, in November, we took the students to our river to put into practice some actions that help control this aquatic plant. We started by learning how the aquatic harvester works, a boat acquired by the Municipality that collects water hyacinths in a front bucket, to be dried on the bank before being sent for organic recycling.

Then we “got our hands dirty” and mapped some of the species we found that day on a digital platform that allows biodiversity observations to be shared with other observers and scientists: iNaturalist (also known as Biodiversity4All in Portugal). By joining the “Invasoras.pt” project on this platform, we can use our mobile phones to photograph and georeference our observations of invasive species, helping to raise the alarm so that they can be controlled more effectively. It’s very easy and we can all make a difference.

If you think you don't know how to identify species... well, try installing the app and see how it is a great way to learn about all the species you find on your walks along the river (or even at home)! We’ll leave you with that challenge.

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Coruche biodiversity for everyone!

With the school community and anyone curious about nature in mind, Ambios Portugal has created the Coruche Biodiversity Audiovisual Library. At the time of this edition of GEIA, this project brings together more than 120 photographs (and some videos) of species and landscapes in Coruche, which can be used in school projects or for any other non-commercial use, free of charge, under a Creative Commons licence: Attribution-NonCommercial (CC BY-NC 2.0).

Creative Commons is an international non-profit organisation that helps people and institutions share knowledge and culture openly. Its goal is to make it easier and safer to make content — such as photographs, videos or texts — available so that everyone can use it, learn from it and contribute to solutions that respond to the world's great challenges.

Under this licence, we promote the circulation of knowledge and facilitate access to quality visual resources: the general public, journalists, teachers and science communicators can use and reuse the images in our library legally, free of charge and with respect for authorship.

Don't forget that we must always give credit to the authors. For example: 'Author: Shirley van der Horst – Ambios Portugal'. You will always find the authorship mentioned in our photos. In addition, of course, to the identification of the species and habitats illustrated.

Enter this library at: https://www.ambios.pt/en/project/audiovisual-library/ or scan the QR code in the top righthand corner.


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Image legend

Front cover image -

Technical data sheet image - Natterjack toad (*Epidalea calamita*)

1. Marbled Newt (*Triturus marmoratus*)
2. Sunset painting the clouds pink
3. Fungus growing out of a fallen log on the forest floor
4. Harlequin ladybug (*Harmonia axyridis*)
5. Moorhen (*Gallinula chloropus*)
6. Large Tortoiseshell (*Nymphalis polychloros*)
7. Open-water diver
8. Response to a harbour porpoise stranding (*Phocoena phocoena*)
9. Laboratory necropsy of a common dolphin (*Delphinus delphis*)
10. Left: Total number of strandings recorded along the Alentejo coast (2021 – September 2025); Right: Main causes of death
11. Outreach activity carried out as part of the *Festival de Músicas do Mundo* in Sines
12. Dive for maintenance of acoustic sensors
13. Left: Response to a bottlenose dolphin stranding (*Tursiops truncatus*); Right: Map of the operational area of the different regional networks in mainland Portugal
14. Sea foam over rocks
15. Cosmo flower seeds
16. The Svalbard seed bank entrance
17. Inside the seed bank
18. Data pertaining to the Portuguese seed bank
19. Norway from above
20. Maize
21. Luena capturing insects with a net
22. Species of the Flatidae family (*Cyphopterum retusum*)
23. Identifying species under the microscope
24. Environemntal education activities
25. Luena exploring a cave
26. Mounting a species of grasshopper
27. Use of an aspirator to collect small insects
28. Insect collection
29. Species of the Auchenorrhyncha suborder
30. Species of the Auchenorrhyncha suborder
31. South African giraffe (*Giraffa giraffa*)
32. Karongwe Natural Reserve
33. South African lion (*Panthera leo melanochaita*)
34. South African giraffe (*Giraffa giraffa*)
35. African elephant (*Loxodonta africana*)
36. Beatriz photographing a lion
37. Heather crab spider (*Thomisus onustus*)
38. Heather crab spider (*Thomisus onustus*)
39. Heather crab spider (*Thomisus onustus*)
40. Heather crab spider (*Thomisus onustus*)
41. Love-in-a-mist (*Nigella damascena*) flowering
42. Planting beds in the garden
43. People working in the garden near the polytunnel
44. Harvested vegetables, herbs and edible flowers
45. Pumpkins growing on the vine
46. The Earthship
47. Flowers and pea pods in the garden
48. Signs to organise the beds
49. Seedlings
50. The garden is a place for many people, from staff to visitors
51. The produce grown is used to feed the trainees and staff
52. Unripe tomatoes
53. European stonechat (*Saxicola rubicola*)
54. Explaining how invasive species persist in rivers
55. Using a QR code to link users to citizen science projects
56. A leaflet explaining the issues behind water hyacinth (*Eichhornia crassipes*) as an invasive species
57. Greenfinch (*Chloris chloris*) in the foreground, with a house sparrow (*Passer domesticus*) in the background
58. Spotted rock-rose (*Tuberaria guttata*)
59. Crag martin (*Ptyonoprogne rupestris*)
60. Goldfinch (*Carduelis carduelis*) perched in the corn fields

Back cover image - Mushroom growing out of a mossy rock

Image authoship

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Luena Soraya **21-30**
Shirley van der Horst **1-6, 15, 20, 37-41, 52, 53, 57-60, cover image, back cover image, technical data sheet image**

The illustrations on pages **25-28** are by Shirley van der Horst

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