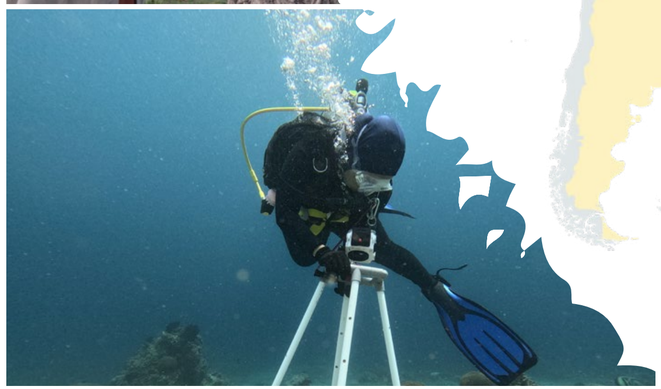
For a wilder planet

MOSSY EARTH

Monthly Field Report

ISSUE 91



OUR IMPACT THIS MONTH

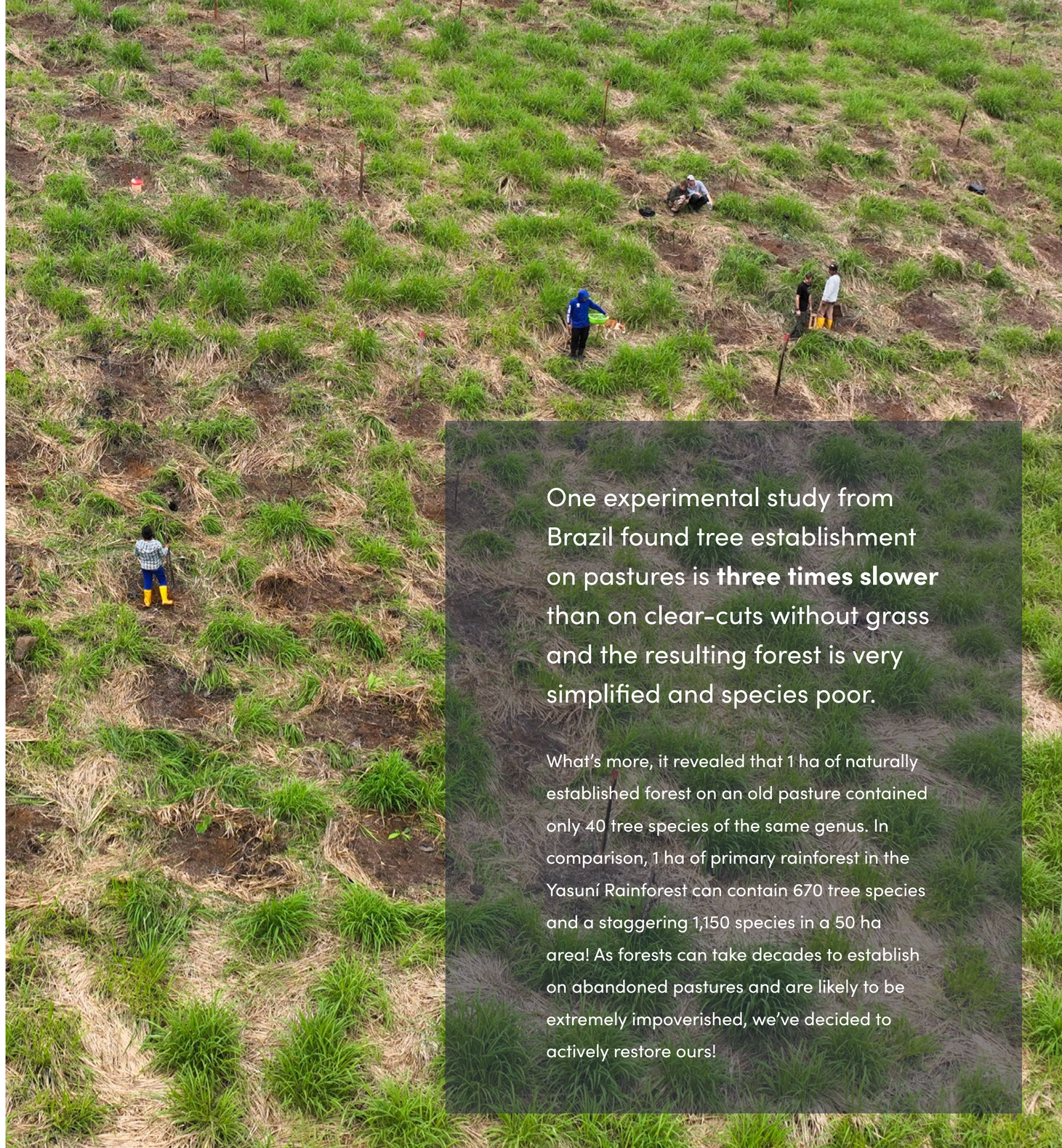
PLANTING TREE ISLANDS

Following on from last month's issue covering our rainforest connection project using tree canopy bridges, we're back in the Amazon with the latest on the Tree Island trial to speed up natural rainforest regeneration!

Why reforest old pastures?

In 2023, we acquired our first plot of land in Ecuador, which included an 8-hectare pasture. This pasture was previously cleared by the former owner for cattle farming. Although his plans to keep cattle here never truly materialised, the forest was almost irrevocably gone.

Today, the main obstacle to natural regeneration on these pastures is non-native grass that dominates the area and outcompetes most of the tree seedlings. On top of this, there are harsh environmental conditions on the pasture for young trees to deal with from exposure to strong sun, rain and wind. Compared to the neighbouring abandoned plantain plantations, where a young forest is already developing, the pastures are practically barren with only a few pioneer species managing to fight their way through the grass.



One experimental study from Brazil found tree establishment on pastures is **three times slower** than on clear-cuts without grass and the resulting forest is very simplified and species poor.

What's more, it revealed that 1 ha of naturally established forest on an old pasture contained only 40 tree species of the same genus. In comparison, 1 ha of primary rainforest in the Yasuní Rainforest can contain 670 tree species and a staggering 1,150 species in a 50 ha area! As forests can take decades to establish on abandoned pastures and are likely to be extremely impoverished, we've decided to actively restore ours!

The Tree Islands method

Applied nucleation is a restoration strategy that integrates tree planting and natural succession to restore and regrow forests. It holds great potential for restoring forests at scale across the tropics and subtropics thanks to reduced costs compared to standard methods that plant trees over the whole site.

Trees are planted in islands to accelerate recovery of forest habitat through 1) creating habitat for seed dispersers, 2) providing shade to suppress the growth of sun-loving plants and other conditions that enhance tree growth, and 3) exporting seeds from planted trees into the surrounding landscape.

Mimicking natural succession

After a disturbance such as fires, isolated patches of early pioneer tree species start to return.

Under their sparse canopies, the climate is cooler and moister than the surrounding area, which creates more favorable conditions for longer-lived species.

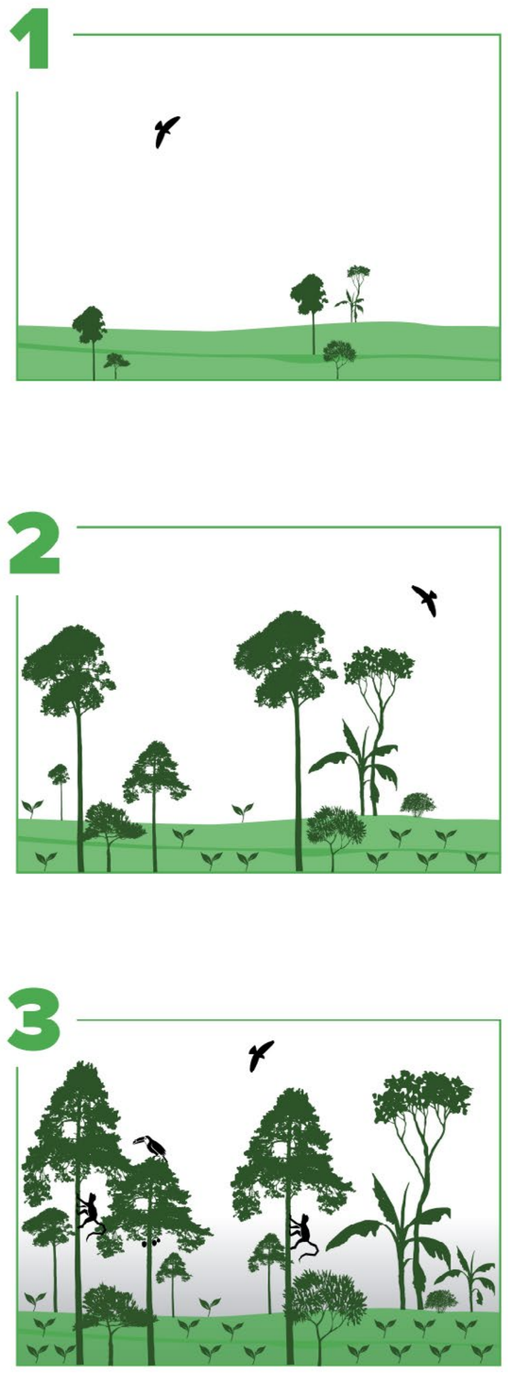


Illustration: Conservation International (2021), *Applied Nucleation Restoration Guide for Tropical Forests*

Canopies attract birds and other key seed-dispersing animals that defecate from the branches, adding to the pool of tree seed.

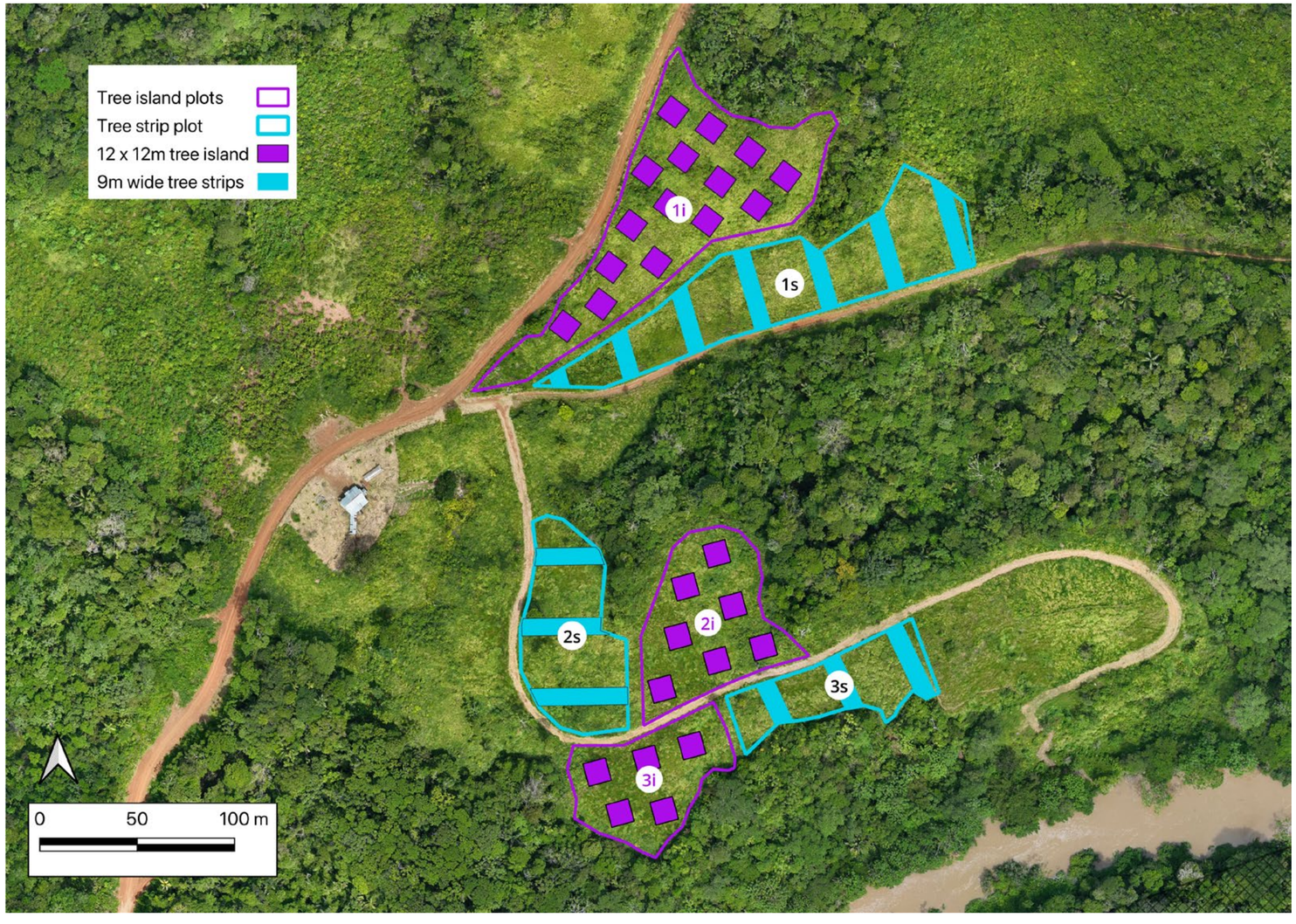
Over time, these scattered tree canopies act as nurseries, and other trees will germinate and grow underneath and around the edges, expanding the size of the tree patch.

Eventually, patches join, closing the canopy and making a continuous forest.

The Experimental Design

This is a great opportunity to test out this method because to our best knowledge, this is a first for Tree Islands reforestation in the Ecuadorean Amazon.

This region is a biodiversity hotspot under pressure from deforestation so gathering data on this method is really useful for any future rainforest restoration efforts done by us or anyone else. Using our land as a pilot site, we're experimentally testing two different planting configurations: squares vs. strips. Setting up three paired plots we are targeting 3.34 ha of pastures under restoration. We're considering setting up another test area too while we leave the rest of the pasture to develop naturally. This gives us a comparison area to see the different results in forest development in the long term.



Species selection

The tree mixture is a selection of eight different native species each fulfilling different roles to promote natural succession. We chose these trees for their ability to fix nitrogen in the soil, grow at different rates, produce fruits of different sizes and their large leaves for shading out the grasses.

Over the coming years, we'll collect data from each test plot to track canopy development and costs. The insights will help when deciding to scale this approach over larger areas. Experience from previous studies also shows that planting in squares might be more suitable in hilly areas while planting in strips is more applicable on flat lands.

PROJECT PAGE

First monitoring brings promising results!

It’s been two months since we planted the first area and our trees are developing well! Survival rates are between 89-99% depending on the species. We’re really happy with this and will continue monitoring survival rates along with maintaining the grass at regular intervals over the next two years.

Research collaborations

We’re looking to set up research collaborations with universities to monitor canopy development and explore additional research topics around species composition and long-term biodiversity change. If you know of professors and course leaders that might be interested in collaborating with us, please pass on the message!

RESTORING ANCIENT WETLANDS

NEW PROJECT

We’re thrilled to announce the launch of a new wetland restoration project in West Iceland

This is our second Icelandic project that focuses on restoring the health and biodiversity of two key watersheds in the Mýrar region—Kálfalækur and Blöndulækur—areas historically impacted by land drainage and stream modification.

This project is a collaboration with Fuglavernd (BirdLife Iceland), Land and Forest Iceland, the Marine and Freshwater Research Institute, and the RSPB.

Why this wetland?

The Mýrar-Löngufjörur area is a protected natural habitat and a crucial annual nesting ground for internationally significant bird species. The Eurasian golden plovers, Eurasian whimbrels and common redshanks find refuge to raise their young in the wetlands' shallow lakes and grassy tussocks before flying south to Europe and beyond.

Migratory fish also heavily rely on these freshwater habitats during spawning and growth stages of their life cycles. Species such as brown trout and the critically endangered European eel migrate upstream from the sea, passing through the network of small streams and lakes in search of prey.

Undoing
historical drainage

As part of a nationwide effort to improve food self-sufficiency and rural livelihoods last century, wetlands across Iceland were dug up and drained to expand farmland.

In Mýrar, peatlands and lakes were drained to create more land for grazing livestock and streams were channelised to reduce the risks to these animals from drowning in the narrow, deep streams with hollow banks. The impact on the landscape left straightened streams, large ditches, and degraded wetlands. This has disrupted natural water flows, degraded peatland habitats and created abrupt bed level changes that block migratory fish from reaching spawning and feeding grounds. Today, with only a small portion of the land in Mýrar being used for grazing, there's a great opportunity to reverse some of the damage.

Rewilding Goals

Reconnect habitats
by restoring natural water flows for migratory fish and other freshwater species

Enhance peatland habitat
with a focus on improved habitat for breeding waders—key indicators of healthy wetland ecosystems. Re-wetting drained peatlands will also reduce carbon emissions and provide other ecosystem services beneficial to humans.

Project budget:
€135,364

Our Plan of Action

In both watersheds, we'll re-naturalise stream channels and remove man-made barriers (two in each catchment), allowing fish and other aquatic species access to vital habitats.

This includes reshaping straightened watercourses into longer, more natural bends to support all kinds of aquatic life whilst reducing erosion of the stream banks. In the Kálfalækur watershed, restoring flow to Lake Bretavatn will reconnect 30.6 hectares of vital feeding grounds for trout. Meanwhile, in the Blöndulækur watershed, two lakes covering 21.6 hectares will be reconnected to 6.3 km of stream habitat—benefiting both eel and trout populations. The end result of this work will open up an interrupted flow of 16 kilometres from the headwaters to the sea.

We're also closing 3,362 meters of surrounding drainage ditches. This will help re-wet the peatlands, raise the water table, and restore the natural carbon-capturing functions of the bog. As the water returns, decomposition will slow, greenhouse gas emissions will drop, and conditions will improve for native peatland vegetation, an important habitat for breeding waders.

The Final Preparations

This month, detailed surveys are happening to guide the final restoration designs. If the weather cooperates, groundworks will begin in mid-August!

To hear the latest news from our first project in Iceland rewilding the desert, see the *Rewilding Roundup* below.

Be sure to watch our latest video where Duarte walks us through the project from Iceland. The footage captured shows just how special this wetland ecosystem is!

PROJECT PAGE

WILDER MIRA

eDNA sampling

Biodiversity monitoring is one of the main focuses of our Wilder Mira rewilding team right now. In the Mira Basin, there's a data gap on which species exist and where.

As such, we're prioritising gathering data as fast as possible, particularly on native and invasive freshwater species like fish, crabs and crayfish. In a superb effort, the team collected eDNA samples from 40 different sites across the basin! Once they're analysed (by Nature Metrics), we should have a solid picture of biodiversity distribution in the basin.

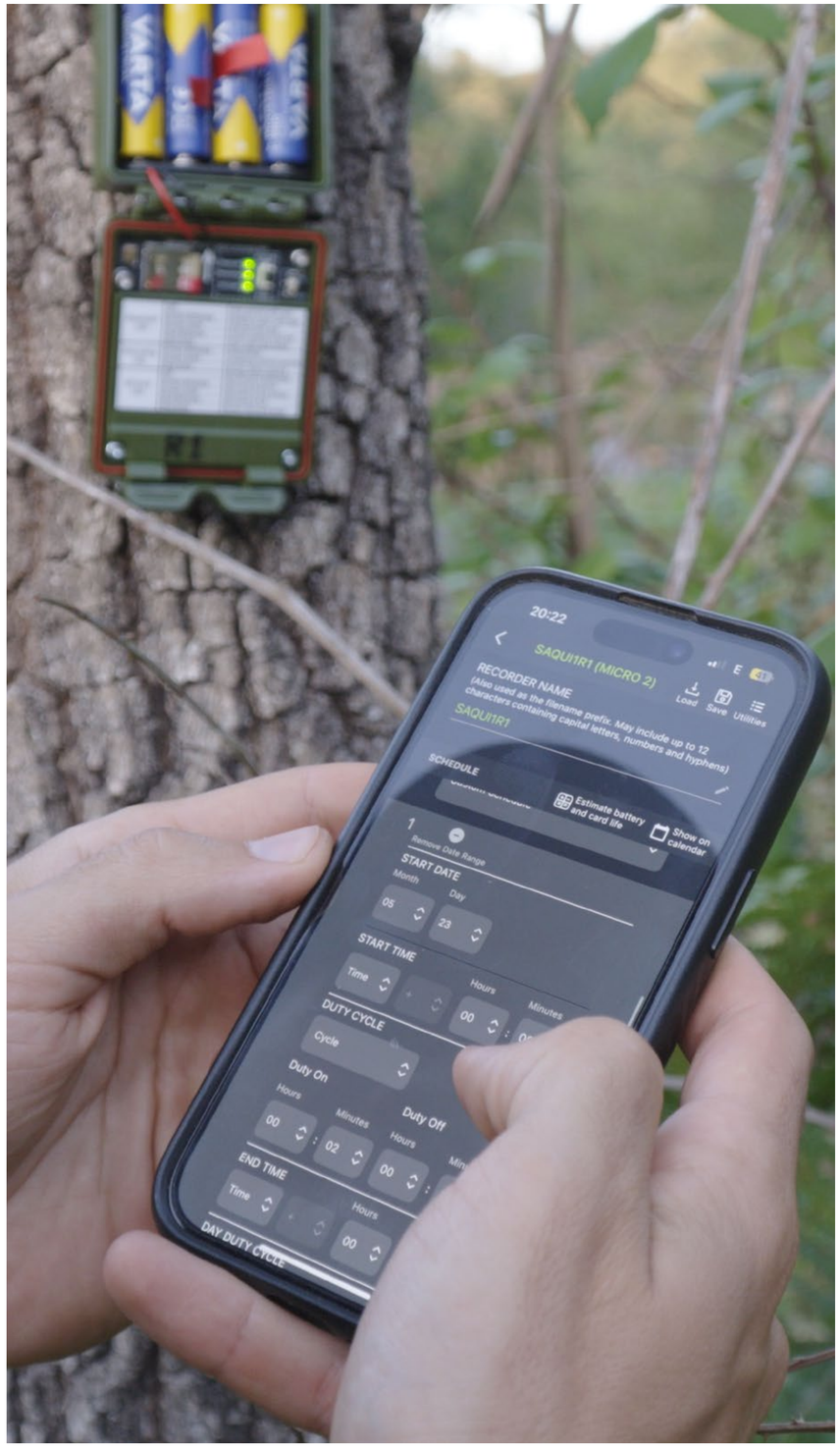
Two of the species we're particularly interested in are the Mira-chub and the Southwestern arched-mouth nase from our saving endemic fish project. Gathering this data urgently will help inform our actions in the region. Without it, we risk losing the opportunity to help other vulnerable species, who could also be teetering on the brink of extinction.

Bioacoustics devices installed!

As well as eDNA sampling, we've installed bioacoustics devices to monitor the soundscapes of the Mira's ecosystems.

Through sound recordings, we're trying to capture the layers that vibrate through mature forests, scrub/shrubland, pastures and eucalyptus plantations along the Mira River. This could be a really fun way of tuning in to the ecosystem, helping us identify and assess species and their relative abundance. Who knows, we might even be able to pick out their behaviours!

What's more, by gathering bioacoustics data from various sites, we can demonstrate the contrasts of a healthy, active ecosystem with a degraded and depleted one. Let's see (or listen to) what comes back from the first batch of recordings from the 26 devices we deployed!

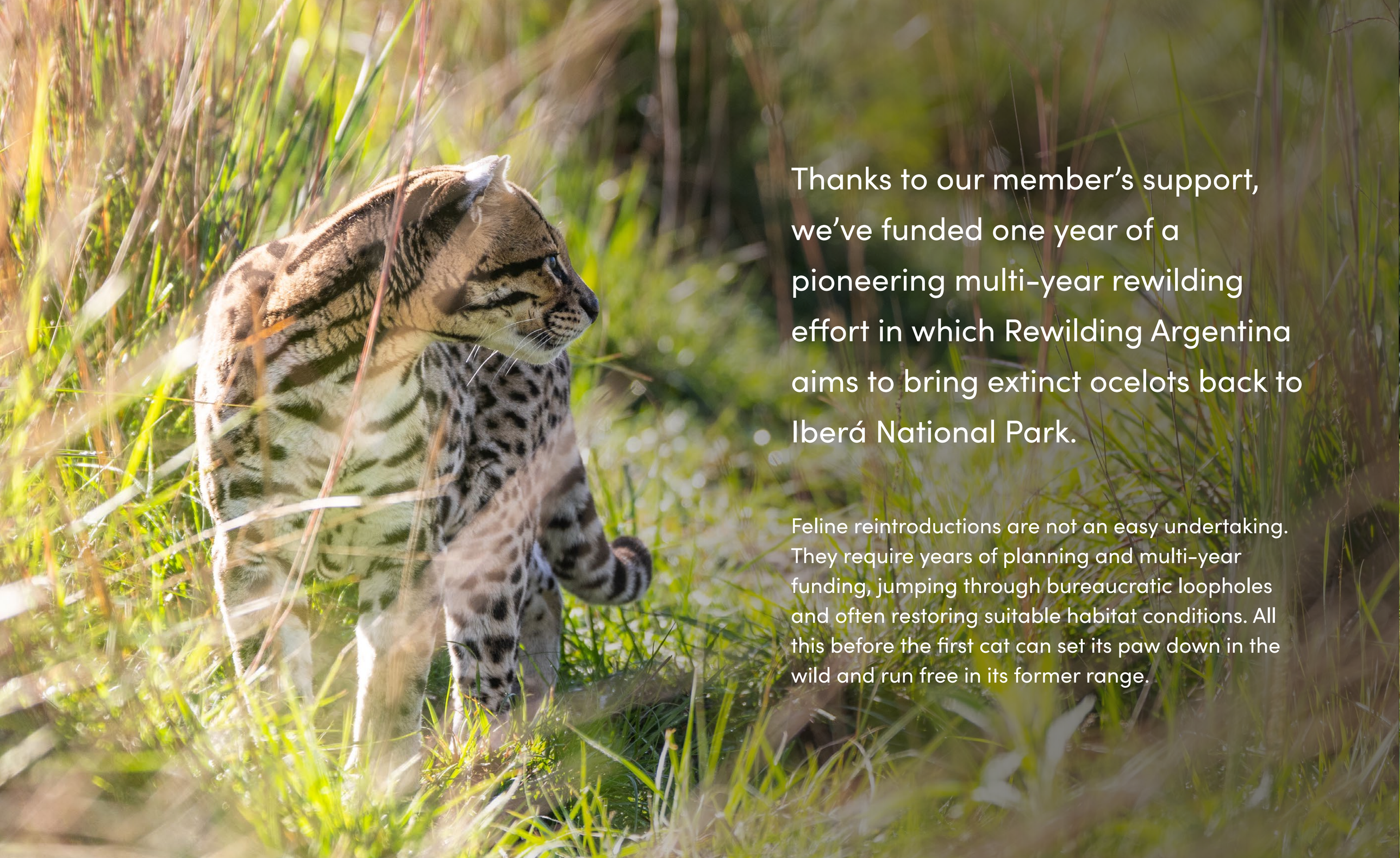


Engaging the Community

We held four talks with groups of local fishers in recent weeks. The idea behind these gatherings was to discuss the threat of invasive aquatic species in the Mira and what we can collectively do to protect native species. Our team distributed leaflets and posters to help inform people of the particular species and their characteristics.

Each event was a success in that people shared our concerns about the invasive species, such as the Atlantic blue crab, leaving the talks more informed on how to look out for our native species.

OCELOT PROJECT WRAPS UP



Thanks to our member's support, we've funded one year of a pioneering multi-year rewilding effort in which Rewilding Argentina aims to bring extinct ocelots back to Iberá National Park.

Feline reintroductions are not an easy undertaking. They require years of planning and multi-year funding, jumping through bureaucratic loopholes and often restoring suitable habitat conditions. All this before the first cat can set its paw down in the wild and run free in its former range.

PROJECT PAGE

Our ocelot reintroduction also experienced setbacks as the goal to release four ocelots during our partnership hasn’t been accomplished.

Out of the three ocelots released, one male died in an unfortunate snake bite and the GPS collar of another stopped working. After losing contact with this female, the second male was re-captured in order to participate in the breeding program in captivity.

The lessons learned, however, led to improvements in Rewilding Argentina’s release protocol with more rigorous pre-release collar testing and incorporating snakes into pre-release aversion training of captive-bred ocelots.

On a more positive note, the team succeeded in incorporating more ocelots into the programme with six individuals currently undergoing a rehabilitation programme focused on hunting practice, climbing experience, and learning to avoid human and other threats.

Three ocelots have been assessed as suitable for release later in the year while three others will continue the programme and be reassessed later. The team also succeeded in obtaining permissions for relocating wild ocelots from another province in Argentina. These wild ocelots have better survival skills so the hope is they will quickly adapt to the new environment. This will also allow for a comparison of their performance with that of ocelots raised in captivity.

Taking into account the exploratory nature of the project and the inherent difficulty with species reintroductions, especially those of larger carnivores, we are very happy about the positive developments in the year of Mossy Earth funding and continue to be in conversation with the team at Rewilding Argentina about possible next steps.

To access the project's final report,
head to our project page.

REWILDING ROUND -UP

What else has been going on?

Year 1 Milestone

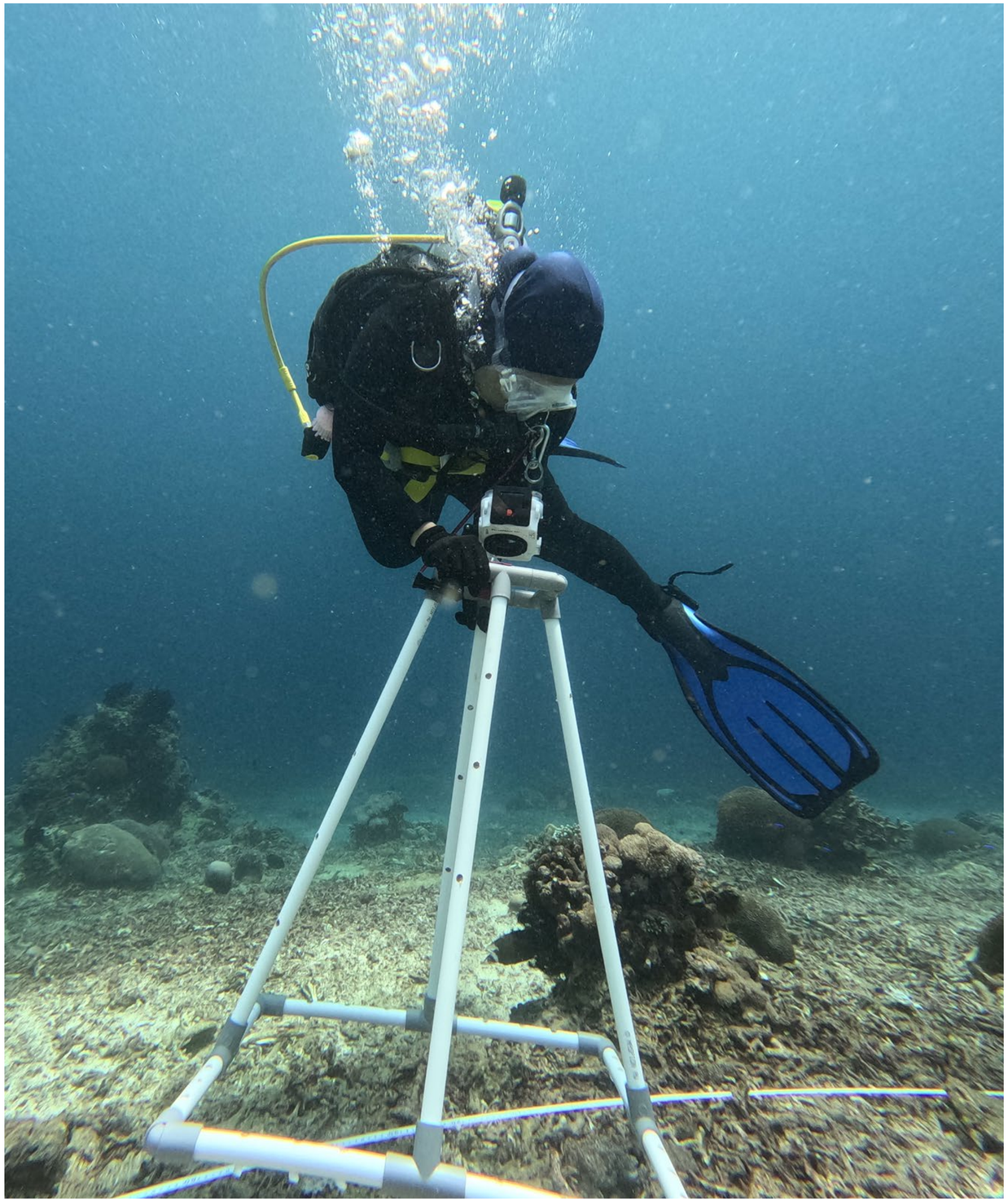
Project: Wilder Reefs

Indonesia

We've hit the end of Year 1 of our coral reef restoration project and with it comes our first annual monitoring. Using an Underwater Photo Transect (UPT) method, we've been taking precise photos along a defined transect line within each of the three restoration areas.

We will then analyse the photographs using specialized software to identify and quantify different components of coral reef ecosystems, such as coral cover, algae, sand, and other benthic organisms.

The goal is to gather consistent, visual and quantifiable data for our coral restoration efforts that becomes incredibly valuable over time. This aids new insights from baseline data comparison and long-term data recording, and enhances adaptive management, for example, if a certain method isn't working, we can respond effectively.



Final year of releases

Project: Red Kite Reintroduction

Spain

This is the last year of our project to reintroduce red kites on the Iberian peninsula with AMUS. Since 2022, we've supported this LIFE EUROKITE project to boost populations, with the final 32 birds now in Spain preparing for release. After veterinary checks, the birds were moved to AMUS's pre-release facilities, where AMUS fits GPS trackers on the birds for post-release monitoring. The final releases will happen this summer. We'll keep you posted on this final farewell!

Collecting seagrass data

Project: Wilder Firths

Scotland

Our new team members have been busy plugging data-deficient gaps along the northern shoreline of the Cromarty Firth. This involved surveying the edges of seagrass meadows to map distribution and assess any reductions compared with historic data. Seagrass Officer Milo has also set up systems and equipment to record field data, including some DIY tally boards! These will be included in quadrat photographs to help identify locations of seagrass, alongside GIS data to be captured via tablets. This work, supported by the Scottish Marine Environmental Enhancement Fund (SMEEF), aims to fill key data gaps around seagrass coverage in this part of our project area.

Scottish Marine Environmental Enhancement Fund

Expanding Aspen

Project: Restoring Aspen

Scotland

Our Scottish partners, Eadha Enterprises, planted 2,810 aspen trees at North Hourat and Comraich in May. At Comraich, a corporate group from Hewlett Packard and an addiction recovery group called CIRCLE joined the planting efforts. To increase the limited supply of aspen in the UK, we've helped Eadha expand their nursery and increase the number of aspen clones available for planting through micropropagation.

Understory planting

Project: Restoring the Understory

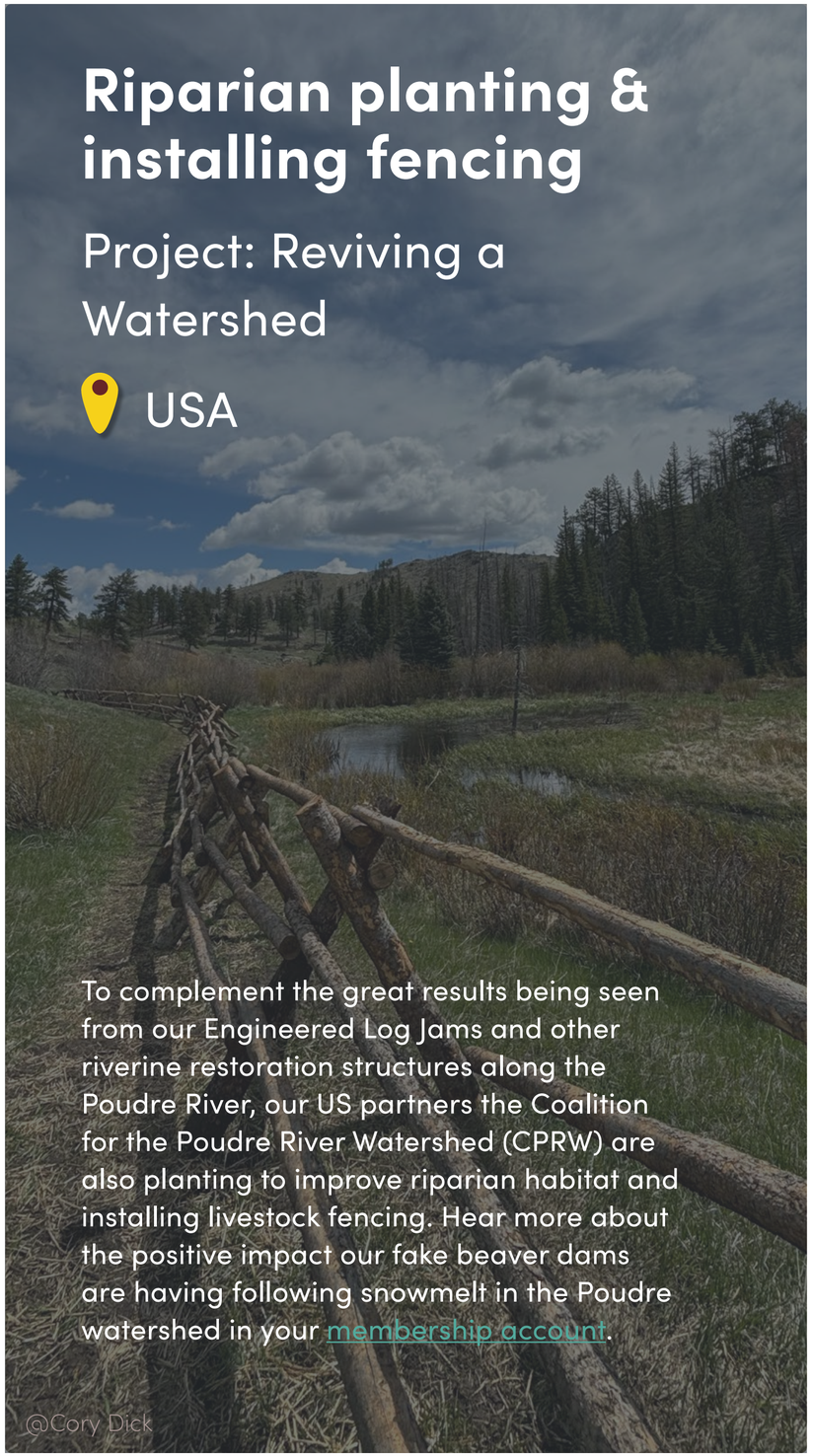
Scotland

At Locherwoods, Eadha Enterprises and groups of volunteers have been busy enriching the understory with hazel, eared willow and other wildflowers. Planting also included 30 rare wild apple trees and thorny brambles to protect previously planted aspen from herbivore browsing. Additionally, 350 bluebell bulbs were translocated from trees uprooted in winter storms. At North Hourat, the Star Project and Scottish Wildlife Trust volunteers helped plant red campion, loose strife, ivy, honeysuckle and 200 bluebell bulbs. All great work in the name of biodiversity!

Riparian planting & installing fencing

Project: Reviving a Watershed

USA



To complement the great results being seen from our Engineered Log Jams and other riverine restoration structures along the Poudre River, our US partners the Coalition for the Poudre River Watershed (CPRW) are also planting to improve riparian habitat and installing livestock fencing. Hear more about the positive impact our fake beaver dams are having following snowmelt in the Poudre watershed in your membership account.

@Cory Dick

Iceland tree planting

Project: Reforesting Iceland

Iceland

Our first rewilding project in Iceland has begun its third year of reforesting efforts to restore ancient birdwood forests. Building on the 273,815 trees we've planted since spring 2022, our target this year is to plant 30,000 downy birch, 1,000 aspen and 1,000 willow. Look out updates on this as the planting season progresses!

MEMBERSHIP NEWS

Work for us:

Conservation & Research Coordinator

Wilder Yasuní, Ecuador

This is a unique opportunity to join our team and play a leading role in shaping our conservation and research agenda in the Amazon.

Want to be focal in our vision of creating an ecologically and socially resilient buffer zone along the North-West border of the Yasuní National Park?

Get your application in by August 10th, 2025!

People behind our Field Report

Tim Ozkurt
Comms manager

“Is about to hit the road on a trip down south. Happy days!”

Ria Appleton
Brand manager

“Been enjoying the parks and the nice summer evenings with my puppy.”

Meija Wallenius
Community manager

“Recently had one of the most magical experiences of my life - admiring the midnight sun from the top of a fell in Lapland with a heard of reindeer sleeping on the slope just below.”