



# CONSERVING THE CATALAN NEWT



Surviving in only a few Catalonian mountain streams, the Montseny brook newt is in such desperate trouble that the fight to save it has just gone international

Words **Victoria Williams**

In the rugged lands 75 kilometres (46.6 miles) outside of the ancient city of Barcelona looms the Montseny Massif, a Catalonian mountain range home to one of the most endangered species in Europe and one of the most endangered amphibians in the world. All the remaining Montseny brook newts live in a handful of cold mountain streams between 600 and 1,200 metres (1,968.5 to 3,937 feet) above sea level in an area about twice the size of New York's Central Park.

Adapted to life in fast-flowing water, the newts have flattened bodies and strong gripping fingers so they can crawl into crevices and avoid being swept away. Scientists have never seen eggs in the wild, but they think that females lay them under rocks to make sure they stay in one place. Brown backs camouflage the Montseny newt against rocks and debris in the streams, but should a predator manage to spot them, they're armed with a defence mechanism; when distressed, they secrete a foul-smelling, noxious white substance.

Montseny brook newts slipped under the radar for a long time, thought for decades to be the same animal as the Pyrenean brook salamander. It wasn't until 2005 that they were formally described to science as a separate

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# Conserving the Catalan newt

species and recognised as Catalonia's only endemic vertebrate. They were first assessed by the International Union for Conservation of Nature (IUCN) in 2008 and immediately joined the list of the world's critically endangered animals.

There are thought to be fewer than 1,500 of the newts remaining in the wild. Part of the problem is the fact that Montseny newts have a hard time finding love; they've never been seen out of the water, so experts think the only way they can find others is to travel up and down the streams and tributaries in the hope of a chance meeting.

In case this didn't make their prospects bleak enough, conditions are changing in the mountain range. The newts have evolved living in coldwater streams running through woodland, but the beech tree line has shifted further up the mountains over the last century because of warmer temperatures, replaced by holm oak forest in some lower parts of the newt's altitude range. Water is also being extracted from the streams to be bottled and sold for drinking, causing some of the waterways to dry up. With such a small range anyway, the loss of streams makes it even more difficult for the newts to survive and find mates to reproduce with.

Dr Gerardo Garcia, curator of lower vertebrates and invertebrates at Chester Zoo, explains the urgency of the newts' situation. "The Montseny newt is teetering perilously close to the brink of extinction and requires immediate action if we are to establish more numbers and save them. The newts are adapted to cold mountain streams and require pristine habitat but, sadly, they are affected



Dark brown bodies and flattened heads make the newts hard to spot against rocks and leaf litter

**MONTSENY BROOK NEWT**  
*Calotriton arnoldi*  
Class Amphibia



**Territory** Montseny mountain range, northeast Spain

**Diet** Aquatic invertebrates

**Lifespan** 10 years

**Adult weight** 4.6-10g (0.16-0.35oz)

**Conservation Status**



**CRITICALLY ENDANGERED**

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by problems linked to climate change, such as rising temperatures and decreasing water resources and human activities like deforestation."

Experts at Chester Zoo have now joined the growing team of conservationists trying to preserve the critically endangered species before it's too late. They've taken on a big challenge: breeding Montseny brook newts in captivity in a bid to restore their numbers. The breeding programme at Chester Zoo is the only instance of a Montseny newt being kept or bred outside of Catalonia. In a purpose-built facility, 12 pairs of newts brought over from the Torreferussa Wildlife Centre in Spain are being cared for and bred, and the hard work seems to be paying off; twelve young newts have already hatched at the zoo and will be released into the mountain streams back in Catalonia. After complex courtship females can lay up to

**BELOW** A new facility has been built especially for the newts away from the other amphibians at the zoo



## Not a good time for newts

There are over 1,400 amphibian species currently classified as Endangered or Critically Endangered on the IUCN Red List, almost 200 of which are newts and their close relatives.

### Leora's stream salamander

These salamanders also live in streams in a single small area, but they're native to Mexico rather than Spain. They're threatened by pollution, deforestation, being caught for food and, like the Montseny brook newt, water extraction for humans.

### Sardinian mountain newt

Across the Balearic Sea from Catalonia is the island of Sardinia, home to another endangered newt. The newts have fragmented into several separate populations and their numbers are falling due to water pollution and drying streams.

### Kurdistan spotted newt

In 2008, this species was only found in four streams in the Avroman Mountains on the Iraq-Iran-Turkey border. Drought, water extraction and capture for the illegal pet trade have caused declines in some populations and the complete loss of others.



**ABOVE** Small lungs and special grips on their fingertips enable the newts to live totally aquatic lives

**LEFT** Mating is an elaborate process for newts, with the pair twisting around each other before the male deposits a sperm packet for the female to pick up

40 eggs a year, so the pairs at Chester and their offspring could make a crucial difference to the species.

Dr Garcia believes the programme could help to rescue the Montseny newt. "Thankfully, vital conservation work to protect the species' habitat is now ongoing and a conservation breeding programme, which we're now part of, is ensuring there's a genetically viable population of newts that can be reintroduced to the wild. Growing up, I spent time in the mountain forests around Barcelona where the newts are found and so to now be part of the efforts to save them is a real honour. The mountains are

where my journey as a conservation biologist began and so, many years on, for the team and I to be able to use our skills and expertise to help save a species that lives there is hugely important."

Chester Zoo is well known around the world for its reptile and amphibian conservation, and it's the first non-Spanish organisation to join the efforts to protect the newt. Within the newt's native region, institutions including Barcelona Zoo, the Barcelona Provincial Council and the government's Department of Territory and Sustainability have been trying for years to boost the wild population



and secure its future. Francesc Carbonell Buira, a biologist for the Government of Catalonia, explains the conservation work that has already gone on and the importance of Chester Zoo's contribution to the project.

"This is a species that had gone unnoticed by scientists until the late 1980s. A population disappeared late last century and, although some are currently stable, some are in a very unfavourable state of conservation. That's why several administrations have come together to improve their conservation status – both through work in the wild and through a breeding programme.

"So far, over the ten years it has been up and running, more than 2,000 Montseny brook newts have been raised and four new populations created. Now Chester Zoo

is on board, given its enormous experience in breeding threatened amphibian species, we hope the programme will go from strength to strength and that we can create a much brighter outlook for these wonderful animals."

The Montseny Massif is a UNESCO-designated biosphere reserve and was named a protected natural park by the government of Catalonia in 1978, although this protection wasn't given to save the newts. To improve the survival chances of the existing population and the released captive-bred newts, experts involved in the recovery plan are also trying to improve the stream habitat in the Montseny Mountains. The newts are very sensitive to environmental conditions, so better water quality will help to keep them healthy and perhaps even allow the population to grow and become more stable.

The Montseny brook newt is a species staring extinction in the face and battling a long list of challenges. Luckily, it's quickly gone from an unknown animal to the focus of a determined collaborative rescue plan, so there's still a chance that one day the streams of Montseny will be home to a thriving newt population.

The newts have a tiny natural range, living in a handful of streams in the northeast corner of Spain

## The Montseny's range

