



Bison beyond

Thanks to a longstanding reintroduction programme, the European bison population in the Southern Carpathians of Romania is now growing rapidly. As it expands, rewilding efforts are shifting their focus towards coexistence and ecological impact.

A remarkable return

Rewilding often involves doing things that have never been attempted before. A good example of this can be found in the Southern Carpathians of Romania, where a partnership between Rewilding Europe and WWF Romania saw Europe's largest-ever bison reintroduction kick off in 2014. Over the following seven years, 105 bison were translocated to the Țarcu Mountains (part of the Southern Carpathians), an area where no wild bison had roamed free for at least 250 years.

With the story of the bison's return to the Southern Carpathians now moving on to a new chapter, the future

of this ecologically and socio-economically important species in the area looks bright. Despite a few setbacks along the way, the population now numbers at least 150 animals of various ages, with the focus of rewilding efforts now shifting more towards maintaining harmonious coexistence with local communities and analysing the behaviour, growth rate and ecological impact of the growing herd.

"We're almost half way towards the minimum viable population level of 150 mature individuals, as established by the International Union for the Conservation of Nature (IUCN)," says

Marina Drugă, Executive Director of Rewilding Romania. "In fact, preliminary data shows that this may be the fastest growing free-roaming European bison population in Europe, although this will need to be confirmed. Either way, it's remarkable where we're at now, compared to the start of the reintroduction programme."

Despite this impressive growth, there will still be a need to further strengthen the Southern Carpathian bison population going forwards. In 2022, eight new animals were carefully selected and prepared by the Springe Bison Reserve and Dounaumoos Zweckverband in Germany – these will be released and join their free-roaming counterparts in the Țarcu Mountains in 2023.

Genetic analysis

In 2022, a second genetic study was carried out on the bison population in the Țarcu Mountains by the WWF Romania field team, involving the collection of 292 scat samples. Subsequent laboratory analysis was carried out by a team from Senckenberg Society for Nature Research at the Centre for Wildlife Genetics in the German town of Gelnhausen, in collaboration with an expert from WWF




DANIEL MIRELA / REWILDING EUROPE

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Romania. Adding these results to those of a first genetic study performed in 2021, the total number of bison individuals identified by unique DNA (genetic profile) was calculated to be 127, of which 30% were male and 70% were female.

“Based on this data we can estimate that the current bison population in the Țarcu Mountains numbers around 152 individuals,” explains Marina Drugă. “We estimate that only 77 of these animals were reintroduced between 2016 and 2021, so that means effectively half were born in the wild. In 2022–2023, we’re expecting the second generation of bison born in the wild, so this percentage will increase again.

If the population continues expanding at a similar rate, I would expect it to number between 350–450 individuals by 2030, but this is a very rough estimate.

- **Country**
 Romania
- **Focal landscape**
Southern Carpathians
- **Size of landscape**
100,000 ha
- **Work started in**
2011
- **Larger landscape**
Southern Carpathian mountain range including a connected series of national parks and protected areas ranging from Danube River valley in the south to Retezat NP in the north.
- **Main habitats**
Temperate forest, sub-alpine grasslands, cliffs, and steep river valleys.
- **Focal species**
European bison, red deer, wolf, brown bear, Eurasian lynx, griffon vulture.
- **Team leader**
Mariana Drugă

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Around 152 bison now roaming free in the Southern Carpathians. Around half of these animals are estimated to have been born in the wild. In 2022–2023, the second generation of wild bison will be born in the rewilding landscape.
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Record-breaking expansion

Romania’s Southern Carpathian Mountains, which rise to heights of 2500 metres, are one of Europe’s most spectacular wild areas. Bounded by the Balkan mountain range in eastern Serbia, they encompass the Țarcu Mountains Natura 2000 Site, as well as the adjoining Domogled-Valea Cernei and Retezat National Parks.

The landscape here comprises various ecosystems – alpine meadows, old-growth forests, dramatic cliffs and canyons. Above the tree line, the meadows once supported large flocks of sheep, with abandoned sheep pens and stock trails still marking the landscape. The area currently inhabited by free-roaming bison population, which consists mostly of half-open beech and spruce forest, is home to a wide range of other wildlife, including brown bears, grey wolves, Eurasian lynx and wild boar.

While rural depopulation and land abandonment have had a long-term impact on the Țarcu Mountains, there is still significant evidence of man in the landscape, with around 22,000 people in 8,500 households living in the area. Despite the fact that more and more land is now left unused, many residents still rely on subsistence farming.



Against this backdrop, the range of the growing bison population is becoming larger and larger, and is now estimated to be around 230 square kilometres. This is the largest range expansion of any reintroduced European bison herd, which can be partly attributed to the fact that the animals receive no supplementary feeding (as is the case with a number of other free-roaming bison populations in Europe). Some animals, which are tracked using GPS collars, have been seen to reach elevations as high as 2100 metres, which is also a record for free-roaming European bison.

“The movement of the herds is typically influenced by meteorological conditions,” explains Marina Drugă. “In cold weather, when there is a lot of snow, the bison tend to gather in big groups of 20 to 40 individuals and use small areas where the most food is available. In warm weather, they stay in smaller groups of around five to 10 animals and move extensively in search of food.”

In the near future further studies on the reintroduced bison are planned. These will examine variables such as the impact of the bison on local habitats, with the interaction between bison, vegetation and dynamic ecological processes central to the rewilding of the

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overall landscape. Other studies to be carried out in the near future will look at variables such as DNA (genetic viability and dynamics of the herds within their home range), diet (through a DNA-based technique called metabarcoding), parasitology, and the carrying capacity of the landscape (both ecological and sociological).

“We now have a unique opportunity to examine in detail how a rapidly growing, free-roaming herd of European bison interacts with the landscape,” says Marina Drugă. “What we learn will hopefully have a beneficial impact on other European bison reintroduction initiatives and help to scale up the overall recovery of this majestic and ecologically important animal.”

Promoting coexistence

As the bison population in the Țarcu Mountains grows and its range expands, so does the potential for challenges around human-wildlife

coexistence. From the very outset of the reintroduction programme, Rewilding Europe’s goal has always been to use the presence of the iconic bison as a drawcard for building a nature-based local economy, while ensuring bison and local residents live harmoniously alongside one another.

Moving forwards, Rewilding Romania and WWF Romania rangers will continue to patrol areas which have the highest opportunity for encounters between bison, people and their property, particularly during the winter and spring, when many animals move to lower elevations in search of food, and in the late summer, when they are attracted to orchards. These areas will be mapped, while electric fences will continue to be installed to protect orchards, agricultural land and villages. The rewilding team will also continue its longstanding efforts to engage with local communities to raise awareness of the bison and how best to behave around them.



▲ Marina Drugă, Director of Rewilding Romania and Team Leader of Southern Carpathians with Administration & Operations Officer Alexandra Stancu.

◀ Summer landscape in the Southern Carpathians.

▶ The newly built WeWilder Campus will drive nature-based tourism and spark entrepreneurial innovation.



The rewilding team have also taken steps during the release of the bison to ensure that coexistence problems are minimised.

“The distribution of bison during their first year in the wild is particularly critical, since they tend to use areas visited during this time more often,” says Marina Drugă. “This means that bison released close to human habitation are more prone to create such problems.”

To minimise the likelihood of bison coming close to villages in the Țarcu Mountains as they move through the landscape, the enclosure where translocated animals are unloaded and allowed to acclimatise to their new surroundings is situated 14 kilometres from human habitation.

Feeling the benefits

Before bison were reintroduced into the Țarcu Mountains, tourism was almost non-existent in local villages such as Armeniș. With the giant herbivores acting as an increasingly potent tourism drawcard, more and more locals are now able to make an additional income from activities such as guiding, driving, the provision of meals and local products, and hosting visitors. This helps to increase local appreciation for the animals, and to wild nature in the area generally.

In 2022, WWF Romania opened a new green complex close to Armeniș – called the “WeWilder Campus” – comprising a collection of sustainably built wooden accommodation. It will help to drive nature-based tourism forward in the area and spark entrepreneurial innovation around rewilding, the recovery of local nature, and regenerative economics. WeWilder was supported by a loan from Rewilding Europe Capital, and is a social enterprise arm of WWF Romania.

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Iconia Miculescu is the headmistress of Armeniș General School

“The impact of the bison has been beneficial because they have attracted attention to the area and allowed tourism to develop. Because visitors are curious, they come to see the animals, but they want to know about local culture too. We are good people, welcoming, and are glad to have people visit us. We laughed about the fact that the bison kept appearing near our village in the beginning, but now they are more wild and we don’t see them that much.”



Miculescu understands that the benefits of the bison aren’t simply limited to economics.

“My son was out camping with his friends and in the morning when they woke up the meadow close by was full of bison. For him and for me, knowing

that you can meet these animals in the wild is a unique and special feeling. Looking ahead, I feel that having the bison here will be good for our community. Now they are part of us.”