

Great resettlement

Belarusian flora and fauna stand at a crossroads — not all species of plants and animals can survive climate change

The climate in Belarus is changing, and it has been for several decades. Scientists believe that by the middle of the 21st century, the average annual temperature in our latitudes will increase by another 1.5 degrees. This is the most optimistic forecast. It is not just people who feel uncomfortable in the conditions of global warming. We have consulted specialists from the Scientific and Practical Centre for Bioresources of Belarus’ National Academy of Sciences to find out which representatives of flora and fauna we have already lost, and who is next in line.

By Aleksandr Nesterov

No birds singing here

Endangered or completely vanished species of the animal and plant world mainly inhabit the pages of the Red Data Book. By the way, its fifth edition is currently being prepared for release. While the losses among mammals due to climate change are relatively small (touch wood!), the situation with birds is worse. This is sad; we often see our feathered friends, know and love many of them. “We propose to include the Western European subspecies of capercaillie, the turtle dove, and the boreal owl in the next edition of the Red Data Book,” shared Ivan Bogdanovich, a research fellow from the centre’s ornithology laboratory. “The main problem for the latter two species is the loss of habitats. **The turtle dove** is a typical representative of old broadleaf forests, while **the boreal owl** is a coniferous forest species that nests in old pine forests, in hollows.”

For comfortable habitation, pine forests need to be over 50 years old. This is where Belarus faces a problem — bark beetles that have proliferated recently favour precisely these mature stands of trees. The disaster zone is in the southern regions of the country, where the effects of climate change are felt most acutely.

On the wings of drought

Belarusian swamps are also suffering greatly from climate change. While air temperature rises, the amount of precipitation remains virtually unchanged, leading some local inhabitants to the brink of extinction. These include butterflies, among which specialists mention **the Frigga fritillary and the Freja fritillary**. “For the last ten years, neither my colleagues nor I have found a single specimen of these species,” lamented Anatoly Kulak, a leading researcher from the terrestrial invertebrates laboratory. “They have likely gone extinct due to warming.”

According to the expert, fritillaries are a good indicator of the health of raised bogs. Meanwhile, changes in the country’s forests are signalled by beetles. For instance, a reduction in old-growth forests is evidenced

SPRUCE TREES IN SOUTHERN BELARUS ARE EXPECTED TO DECREASE SOON

The Ministry of Natural Resources and Environmental Protection anticipates that due to climate change, the habitat of one of the most common forest trees in Belarus — spruce — will shift to the northernmost part of the country in the near future. This was stated by Aleksandr Dragun, First Deputy Forestry Minister. At the same time, the Ministry claimed that they managed to deal with the issue of the decline in pine plantations and the pests affecting pine forests. As a result, the population of these adversaries has decreased significantly and is now under control.

by deadwood inhabitants — **the Laccon lepidopterus click beetle** and **the Ampedus sanguineus reddish-brown click beetle**. They have already become extinct in many places across Europe. Fortunately, they still exist in Belarus, although scientists have serious concerns about the future of the last large populations.

There is, however, a counterexample.

The Zerynthia polyxena is one of the most beautiful day-flying butterflies in Europe. It only inhabits Gomel Region in Belarus, settling down around the perimeters of major rivers where the only food plant for this species — **Aristolochia**, aka Dutchman’s pipe — grows. Due to mild winters, snow accumulation is insufficient, and spring river floods are generally quite manageable. Thus, polyxena’s habitats (the butterfly emerges in early May) are not inundated with water, and local populations can intermingle, which positively affects the species.



TO THE POINT

According to Belarusian scientists, temperature rises will continue regardless of greenhouse gas concentrations. The Institute of Nature Management of Belarus’ National Academy of Sciences has calculations and forecasts for each region up to the year 2050, which suggest that by the years 2030 to 2040, the temperature in Vitebsk Region is expected to be approximately the same as it is currently in Polesie [Gomel Region]. Global warming is advancing at a rapid pace.

Rarities and uninvited guests

Experts are also monitoring the fate of local species known in the country from only one or two habitats. These are relict species from ancient geological eras that currently exist on our territory in conditions non-typical for them. “These species have already gone extinct across vast territories adjacent to Belarus, while we still have them,” noted Anatoly Kulak. “One such species is **the Ceratophylus polyceros earth-boring scarab beetle** — a beetle that spends most of its life as a larva in the sandy dunes of Polesie at a depth of 1.5-2 metres. The nearest known habitats are located more than 500 kilometres away from Belarus.”

Pavel Geshtovt, Deputy Director for Scientific and Innovative Work at the Scientific and Practical Centre for Bioresources of Belarus’ National Academy of Sciences, drew the attention of nature enthusiasts to another consequence of climate change that does not seem particularly positive for scientists — the invasion of non-native species into the country. “When the climate changes, species that previously did not live here begin to arrive,” the specialist remarked. “They can also have a negative impact on our Red Data Book species.”

