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The Aurora Borealis dances on most clear nights between September and April.

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Abiskojåkka (Abisko River) lies at the heart of Abisko National Park.

Abisko

SWEDEN

Abisko National Park, located 200 km inside the Arctic circle in Sweden, was founded in 1909 to protect the scenic Abiskojåkka valley, which hosts rare plant and bird species. With the iconic valley of Lappporten nearby and the likelihood of witnessing the aurora borealis (commonly known as the Northern Lights), Abisko is an ideal destination for experiencing Sweden's northern mountainous landscape.

Abisko's plants and animals are characteristic of Arctic and subpolar regions. Arctic birds, moose, lynx and wolverine are common. Semi-domesticated reindeer roam the tundra and alpine grasslands, herded by the Sami Indigenous people.

The park is located on the border between two important northern ecosystems. Here, the northern limit of boreal birch forest

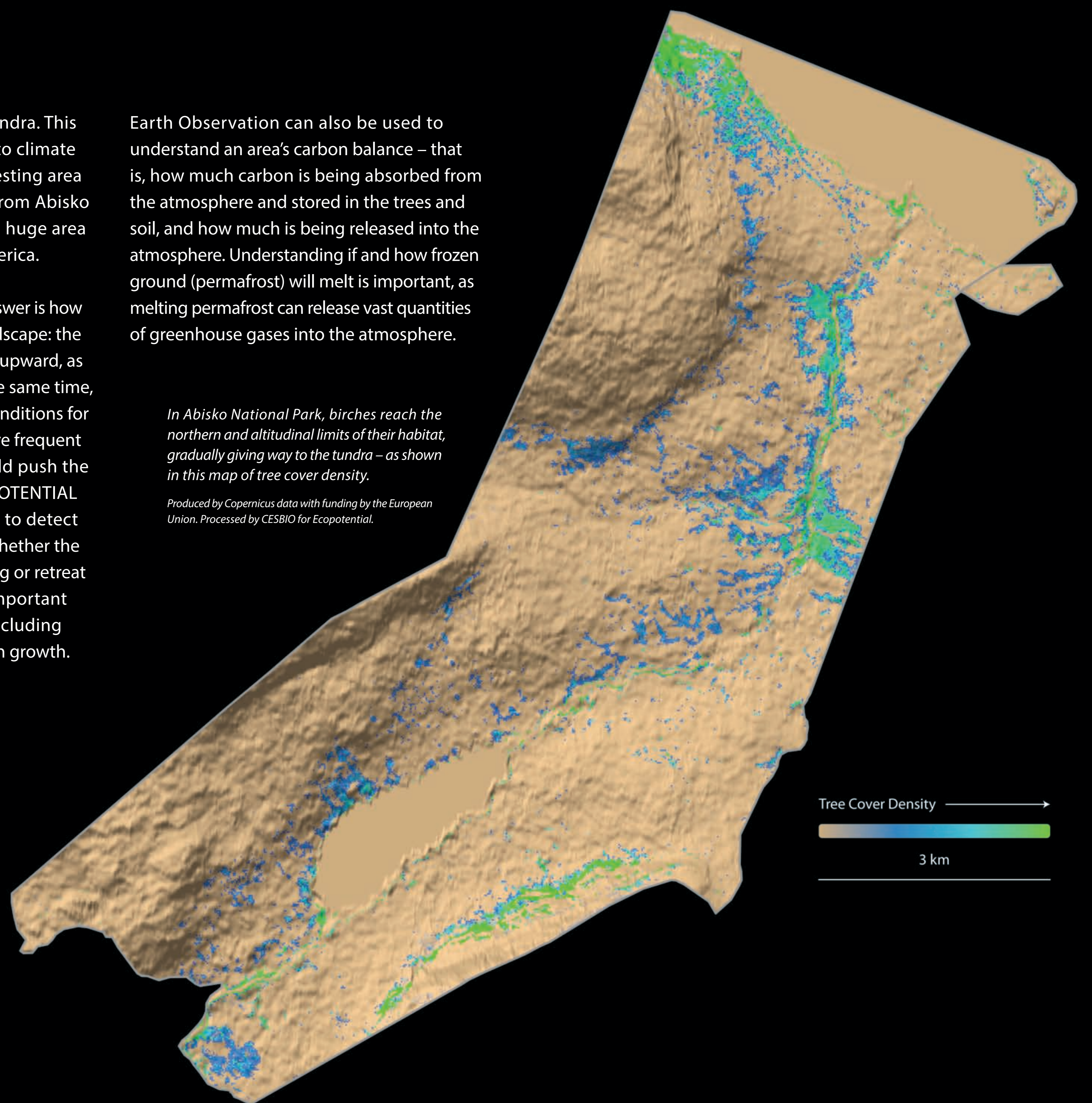
meets the southern fringes of tundra. This transition zone is very sensitive to climate change, making Abisko an interesting area for scientists to study. Findings from Abisko could potentially be applied to a huge area in Northern Europe, Asia and America.

One question scientists want to answer is how climate change will affect the landscape: the treeline could advance north and upward, as conditions become warmer. At the same time, a warmer climate improves the conditions for insects feeding on leaves and more frequent and severe insect outbreaks could push the treeline further south. The ECOPOTENTIAL project is using satellite imagery to detect the treeline, in order to find out whether the forest will advance due to warming or retreat due to insect herbivory. Other important processes can also be tracked, including phenology and rates of vegetation growth.

Earth Observation can also be used to understand an area's carbon balance – that is, how much carbon is being absorbed from the atmosphere and stored in the trees and soil, and how much is being released into the atmosphere. Understanding if and how frozen ground (permafrost) will melt is important, as melting permafrost can release vast quantities of greenhouse gases into the atmosphere.

In Abisko National Park, birches reach the northern and altitudinal limits of their habitat, gradually giving way to the tundra – as shown in this map of tree cover density.

Produced by Copernicus data with funding by the European Union. Processed by CESBIO for Ecopotential.



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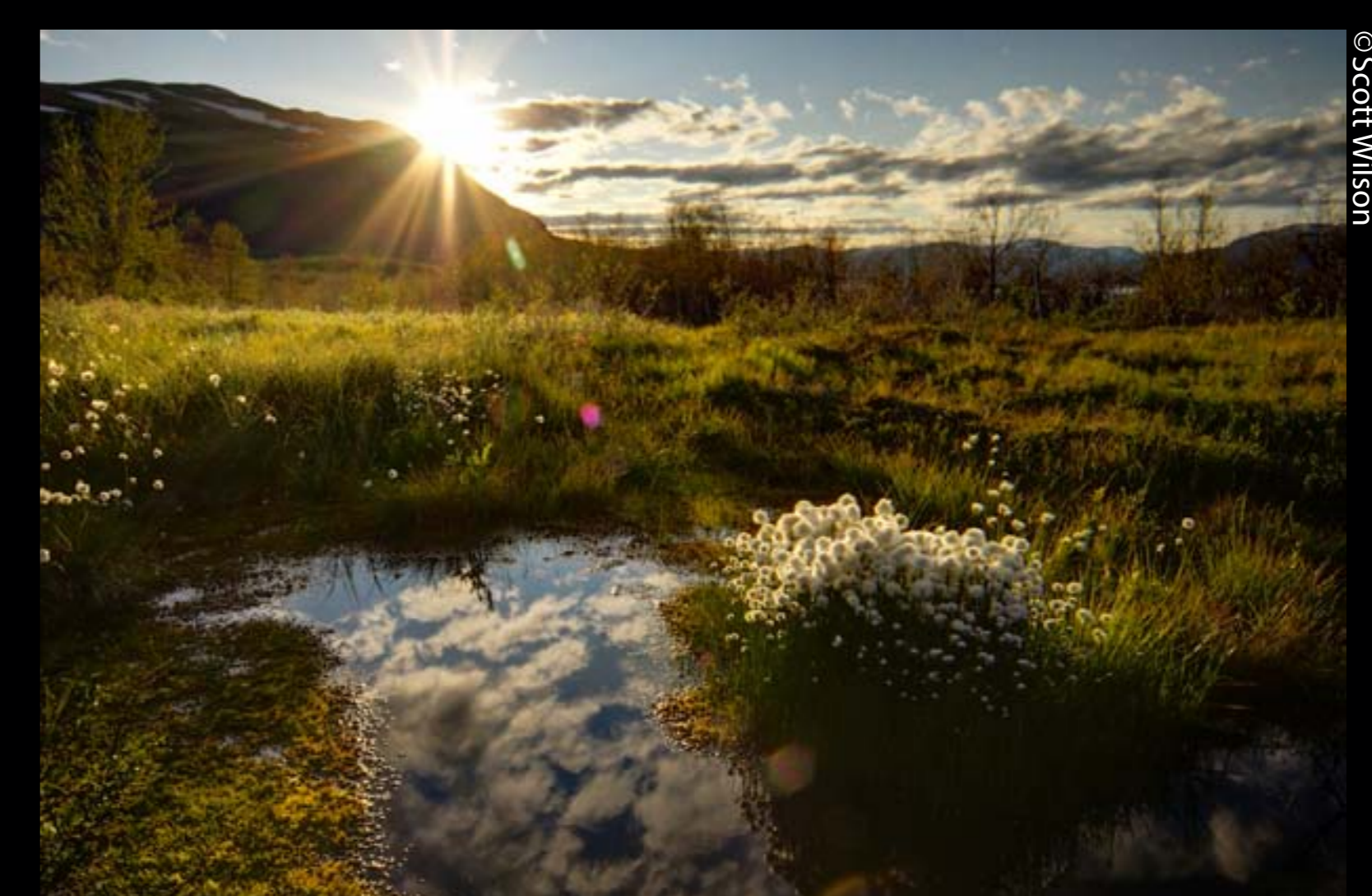
Lappporten, the large U-shaped valley formed by glacial erosion, is Abisko's most distinctive landmark.



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Tree-line birches are twisted by the wind. Abisko National Park is in the valley and on the mountainside behind the birches.

Mires, dominated by cottongrass (*Eriophorum scheuchzeri*) and Sphagnum moss, are an important carbon sink.



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