

horizons



There's still life

Here ten young Scots pine trees display what might normally escape the eye: the delicate intertwining of their roots. As part of a study into the effect of drought on different species, Christoph Bachofen of the Institute for Forest, Snow and Landscape Research (WSL) has been growing these trees in two-metre long boxes in Leuk, Valais. The plants on the right have been growing under normal conditions, whereas those on the left have been subjected to intense artificial droughts. In order to ensure that the natural competitive environment

was reproduced, several trees were grown in each box.

The researchers waited three years before opening the boxes and then carefully took them out with their roots intact. On a white background, they photographed each one before recomposing the plants together in digital format. "We're looking particularly at the length of the roots, their diameter and their mass, but also their architecture", says Bachofen. "They are denser at the surface, where they have access to nutrients in the humus, and at the bottom, where they have access to

water accumulating in the sand and gravel. This is highly representative of soil profiles in Valais".

The study failed to confirm the hypothesis that the Spanish, Greek and Bulgarian pines (2nd, 3rd and 5th from the left) would fare better with the lack of water. "We didn't even expect the local pines to survive. The artificial drought was drastic: no water at all between June and September for two consecutive years". With this unexpected resistance, native species might not be so unprepared for global warming. *dsa*

Image: Christoph Bachofen/WSL



