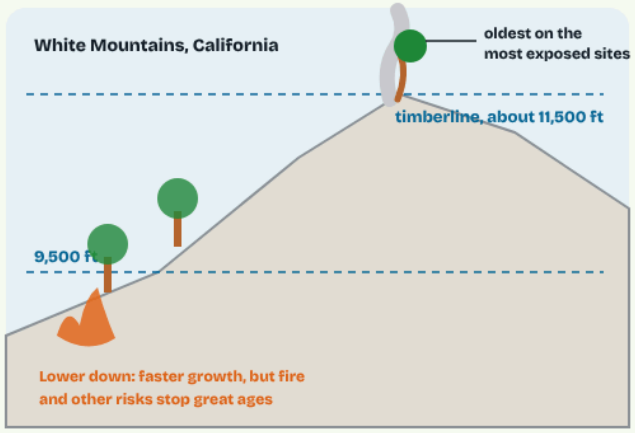
That is why

Why do bristlecone pines live so long?

They grow slowly where little else survives, build dense resinous wood, and let dead slices go while the rest lives on.

A A hard place to live



< 12 in
rain and snow a year, mostly snow

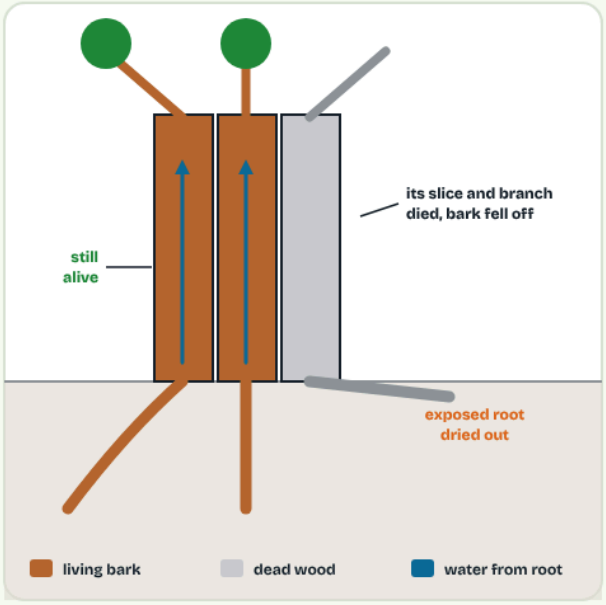
6 weeks
of warmth to grow, in some summers

Few nutrients
dolomite, a kind of limestone

Sparse cover
little fuel for fire, few rivals

In very harsh years a tree may not add a growth ring at all, so ring counts can come up short.

B One root, one slice



1. Wind dries an exposed root, or rot kills it
2. Only the slice of trunk above that root dies
3. The rest of the tree carries on as before
4. Oldest trees: one strip of bark, one branch

C Built to last

How long needles stay on

Most pines
a few years

Bristlecone
up to 30 or 40 years



Girth: no more than 1 inch per century. Dense, resin-rich wood keeps out insects and rot.

No sign of wearing out

Trees aged 23 to 4,713 years were tested (2001): wood, shoot growth, pollen, seeds and seedlings showed no decline with age.

Age in years

Oldest tree tested in 2001 — 4,713

Prometheus (cut 1964), estimated — ~4,900

Tree found in 2012 — 5,065

Prometheus had 4,862 growth rings. Dead trees can stand for centuries.

Like a house that shuts its cold rooms: let dead slices go, keep the warm one alive.

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