

# Climate change: One man's fight to save a California tree

By Georgina Rannard  
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CODY PETTERSON

Image caption

Cody, an anthropologist and environmentalist, bought a plot of land destroyed by wildfire in 2002

**After a huge wildfire killed a forest in San Diego, California, in 2002, Cody Petterson set his heart on replanting the trees.**

As a child, he had happily played and hiked among these statuesque conifers, which provide shelter to black bears and black-tailed deer. By the age of 37, he wanted to do his bit to conserve and repair the land.

But in the six years since he began, **California has experienced severe drought**, which scientists link to global warming, and 650 of Cody's 750 seedlings died. **Cody's emotional account of surveying his dying trees** struck a chord with thousands of people on social media when it was posted on Earth Day, in April.



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CODY PETTERSON

Image caption

Cody Petterson grew about 750 seedlings, keeping the infant trees in his garden before planting them out

"I think of all the love I've put into saving that forest, all the

years, all the thousands of hours, all the thought, and worry, and hope, and faith," he wrote. "I felt despair for the world I've known and loved."

**'Early indicator of climate change'**

Globally, human activity is putting **one million species are at risk of extinction**, as nature declines at unprecedented speed, the UN said last week.

In California, the effects of climate change are ubiquitous - **recent years have produced record-breaking**

**temperatures**, earlier springs and less reliable rainfall.

The tree Cody planted, the Bigcone Douglas-fir, is native to southern California and does not grow outside the state. But now experts believe its time is limited in San Diego.

Instead, it will probably move to higher elevations in search of wetter conditions.



Image copyright

MICHAEL KAUFFMANN

Image caption

Bigcone Douglas-fir, which grows to 30m (100ft), in the San Gabriel Mountains, near Los Angeles, California

The species is an early indicator for the impact of climate change, says **ecologist Michael Kauffmann, who monitored and mapped Bigcone Douglas-fir** for the US Forest Service. The tree's decline in San Diego is a "harbinger for the next 50-100 years".

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For Cody, an anthropologist and environmentalist, it's a devastating result after years of difficult work on his 300 acres (1.2 sq km) of land in

the Volcan mountain range.

### **One-man crusade**

When he bought the property with his wife, in 2013, he realised the trees' seed bank had also been destroyed in the 2002 Pines Fire, making it difficult for the conifers to re-establish alone. After securing government funding to replant the forest, he began what could be called a one-man crusade.

"I read everything I could about reforestation, botany, ecology, soil. I collected acorns, thousands of cones, and seeds," Cody told BBC News.

"To my wife's chagrin, I filled a third of the refrigerator with bags of seeds in various stages of stratification and germination. I filled the backyard with potted seedlings."

Eventually, he began to plant the seedlings out on the mountain.

"I planted every which way I could, learning something new each time, year after year," he said. "The first year I planted in the open, the seedlings baked.

Next, I planted in the shade - and they baked."

When gophers and rabbits ate the fledging trees, he built cages to protect them.

**California was in a state of drought** from

December 2011 to

March 2019,

according to the US

Drought Monitor.

Cody was watering the seedlings across the large area every two to three weeks.



Image copyright

CODY PETTERSON

Image caption

Most of Cody's trees have died as California endured record-breaking temperatures

"Winter rains are good but there's no snow-melt anymore and a winter rain doesn't help a seedling survive in October when there hasn't been a drop of rain in

eight months," he said. "The second half of 2017 was the driest on record here.

"I've planted hundreds over the years, and filled my patio and yard. I've lost too many to count but I can somehow remember the moment I first saw each one had dried out."

Scientists have found that **snowy mountain winters are being "squeezed"**

**shorter** by climate change in California. Ecologist Michael Kauffmann says that climate change is "definitely" affecting the tree's ability to survive.

"The worst of it is the lower elevations.

Trees have always moved in search of good growing conditions," he said.

"But right now, because of the acceleration of climate change, the spots favoured by Bigcone Douglas-fir on lower elevation, south-facing slopes are drying out - and the trees just aren't making it."



Image copyright

MICHAEL KAUFFMANN

Image caption

Remains of Bigcone Douglas-fir after a wildfire in Mount Gleason, in the Angeles National Forest

Other factors are also contributing to the area's changing environment.

Invasive species such as grasses, which humans help to spread, compete with native species for moisture, nutrients and sunlight.

The **changing wildfire regime in California**, which is causing more frequent and more ferocious wildfires, is a particular cause for concern for forestry. Despite the fact the Bigcone Douglas-fir can regenerate, even flourish, after it burns, they cannot survive high intensity fires,

according to the US Forest Service.

### **The rise of 'eco-anxiety' and what to do about it**

Facing the shrinking tree range, Cody says he has accepted he must give up his dream of growing a new Bigcone forest. But he struggles to think how to explain it to his children, who are three and six.



Image copyright

CODY PETTERSON

Image caption

Cody says he struggles to explain the changing environment to his young children

"I thought of this photo we took a couple of years ago, sitting in front of all our hundreds of seedlings - so happy," he said. "How do I tell them that I don't know what to do with the 600 seedlings in the backyard? That there's no place left in

the world for these trees they've grown up with?"

Cody has begun to focus more time on environmental activism and lobbying but he hasn't given up his forest dream entirely.

This time he's pinning his hopes on another native but more drought-tolerant conifer - the Coulter pine.