Climate Change Causes City Trees to Struggle

气候变化导致城市树木挣扎

Life in a city can be especially hard for a tree.

城市生活对树木来说尤其艰难。

Buildings, pollution, poor soil, insects, and even car crashes can add to tree loss. Now, the warming climate is making a tree's life even harder.

建筑物、污染、贫瘠的土壤、昆虫，甚至车祸都会增加树木的损失。现在，气候变暖使树木的生活更加艰难。

Between 2016 and 2021, a report from the city of Seattle in Washington state said the city lost about 255 hectares of tree covering. The report blamed climate change in part for the loss.

2016 年至 2021 年，华盛顿州西雅图市的一份报告称，该市损失了约 255 公顷的树木。该报告将损失部分归咎于气候变化。

Then came the driest summer on Seattle's record books in 2022. The drier conditions and hotter temperatures have left many trees with brown leaves, naked branches, and extreme seeding. These are all signs of tree stress.

然后是 2022 年西雅图记录簿上最干燥的夏天。更干燥的条件和更热的温度使许多树木的叶子变成褐色，树枝裸露，种子过多。这些都是树木压力的迹象。

A tree expert at Washington Park Arboretum, Shea Cope, said that you can see evidence of tree stress in maple and hemlock trees. "(They are) just loaded with cones or seeds. It's kind of their last-ditch effort to reproduce."

华盛顿公园植物园的树木专家 Shea Cope 说，您可以在枫树和铁杉树中看到树木压力的证据。 “（他们）只是装满了球果或种子。这是他们繁殖的最后努力。”

Nicholas Johnson is a tree expert for Seattle City Parks. He said if this warming climate continues, "…we are going to have a lot of trees die." "Under the heat," he said, "trees get weak — just like people."

Nicholas Johnson 是西雅图城市公园的树木专家。他说，如果这种变暖的气候持续下去，“……我们将会有很多树木死亡。” “在高温下，”他说，“树木会变得脆弱——就像人一样。”

Effects of extreme weather

极端天气的影响

Researchers from France and Australia studied the effect of hotter temperatures and less rain on more than 3,100 trees and plants in 164 cities across 78 countries.

来自法国和澳大利亚的研究人员研究了气温升高和降雨减少对 78 个国家 164 个城市的 3,100 多棵树木和植物的影响。

They found about half the trees in the cities were experiencing climate conditions beyond their limits. They also found that by 2050 nearly all trees planted in Australian cities will not survive.

他们发现，城市中大约一半的树木正在经历超出以下的气候条件他们的极限。他们还发现，到 2050 年，几乎所有种植在澳大利亚城市的树木都将无法存活。

David Nowak is a retired scientist for the U.S. Forest Service. He said, "It's not the gradual change that's going to be the problem. It's these extreme swings of too much water, too little water, too much wind, and storm intensities (that) are going to cause these rapid changes."

大卫·诺瓦克 (David Nowak) 是美国林务局的退休科学家。他说，“问题不在于渐进变化。水太多、水太少、风太大和风暴强度的极端波动将导致这些快速变化。”

In 2005, Hurricane Katrina destroyed about 10 percent of the trees in New Orleans, Louisiana, said Michael Karam, Director of Parks and Parkways. And in 2021, he added, Hurricane Ida uprooted many new tree plantings.

2005 年，卡特里娜飓风摧毁了路易斯安那州新奥尔良市大约 10% 的树木，公园和公园道路主管迈克尔·卡拉姆 (Michael Karam) 说。他补充说，2021 年，飓风艾达将许多新植树连根拔起。

‘Assisted migration'

‘辅助迁移’

With climate change, researchers are also concerned that many cities will lose newly planted trees before they reach maturity -- between 10 to 20 years.

随着气候变化，研究人员还担心许多城市会在新种植的树木成熟之前（10 到 20 年）失去它们。

Non-native trees have been brought to cities for some time. However, climate change is causing many tree experts to specifically consider them — a practice called "assisted migration."

外来树木被带到城市已有一段时间了。然而，气候变化正导致许多树木专家专门考虑它们——一种称为“辅助迁移”的做法。

In the city of Bellevue, Washington, experts are growing different kinds of trees specifically for climate change. On city grounds, they are planting baby giant sequoias, just a few centimeters tall.

在华盛顿州贝尔维尤市，专家们正在种植不同种类的树木来应对气候变化。在城市地面上，他们正在种植只有几厘米高的幼年巨型红杉。

The giant sequoias are not native to the Pacific Northwest area. But tree managers in this city east of Seattle are planting more sequoias because the trees can deal with the lack of rain and insects.

巨型红杉并非原产于太平洋西北地区。但是西雅图东部这座城市的树木管理者正在种植更多的红杉，因为这些树可以应对缺乏雨水和昆虫的情况。

"Once these trees are established, they grow incredibly fast," said Rick Bailey of the city's forest management program.

“一旦这些树长好，它们就会长得非常快，”里克·贝利 (Rick Bailey) 说城市森林管理计划。

Planting more non-native trees is also drawing attention to something city tree experts have learned from years of tree deaths: having many different kinds and ages of trees is important to keeping urban forests alive.

种植更多非本土树木也引起了城市树木专家从多年树木死亡中学到的一些事情的关注：拥有许多不同种类和年龄的树木对于保持城市森林的活力很重要。

"Life always finds a way," said Nicholas Johnson, the tree expert for Seattle City Parks. "And in Seattle, people are helping life find a way."

“生命总是找到了方法，”西雅图城市公园的树木专家尼古拉斯约翰逊说。 “而在西雅图，人们正在帮助生活找到出路。”