

Bigleaf Maples in Decline Across the Northwest

By Kayla Seaforth

The often massive bigleaf maple is one of the first trees to show signs of life in the spring; their dangling flower clusters are an early sign that winter is drawing to a close. These giants provide shade to our riparian forests and city streets. Bigleaf maples are vital habitat for many birds and small mammals who find refuge in their many cavities and crevices. They are an iconic species of the Pacific Northwest, and they are one of many species facing mortality as the climate changes. Their decline has the potential to radically shift the landscapes that sustain us, especially as this phenomenon is compounded by other losses.

A 2021 [study](#) published by researchers at the University of Washington found that bigleaf maple dieback has increased since 2011 and is more prevalent near roads and areas of intensive development, and is associated with warmer summers. Of the 59 trees sampled in the study, 22% showed symptoms of dieback. Symptoms include crown thinning and dieback, clumps of small leaves and heavy seed crops, and yellow leaves that sometimes appear scorched around the edges ([WSU Extension](#)).

The study also looked at nutrient concentrations in soil and leaves to examine whether pollutants had an effect

on the health of the maples, but results were inconclusive. Forest pests and pathogens routinely affect bigleaf maples, but the UW study did not see any trends that indicate a single outbreak leading to overall decline. Most likely is the stress of hotter, drier summers, compounded by the increased heat associated with heavy development leading to additional resource stress on the maples, and making them more susceptible to disease and insect outbreaks.

Study co-author Jacob Betzen said of the bigger picture “climate change, habitat loss, and increased development are leading to declines in many tree



Maples seem to be faring better in areas with limited development like this Skagit River shoreline. Photo Credit: Jacob Betzen

species, and bigleaf maple appears to be experiencing the same fate.”

A small ray of hope exists however, in healthy, well connected riparian forests. The results of the study discussed above indicate that trees growing closer to roads or nearby significant human development are suffering, while those rooted within ecologically in-tact low elevation forests are faring much better. Landscape level approaches that prioritize connection and biodiversity are one tool we have to preserve this important species.

If you are interested in contributing to data collection on bigleaf maple decline, you can record observations through the [Bigleaf Maple Health Watch project](#) on iNaturalist. These community science observations are used to estimate the extent of dieback across the northwest and may help with future research efforts.



Photo Credit: Jacob Betzen

Climate change is affecting many species that are vital to the ecology and culture of the Pacific Northwest. Western redcedar has also been suffering under warming conditions and many fear what its decline will mean for northwest tribes who have stewarded the forests where the trees once thrived for millenia. This [story map](#), a product of collaboration between the US Forest Service, Oregon Department of Forestry and Washington Department of Natural resources details the extent of the dieback and shares the finding of research that points to lower precipitation and higher temperatures as major factors associated with areas where cedars are dying.

