

POINT DEFIANCE WESTERN REDCEDAR STUDY

Community science to map and monitor western redcedar tree health in the coolest (°F) part of Tacoma's urban forest.

IMPORTANCE OF WESTERN REDCEDAR

Western redcedar (WRC) are culturally, ecologically, and economically important trees in the Northwest.

Western redcedar is critical to study and monitor because:

- WRC is a key cultural resource to indigenous peoples, providing many gifts for shelter, transport, ceremony and well-being.
- WRC is abundant in northwest forests and communities, providing many important ecological and social services.
- WRC is critical for wildlife habitat, also providing shade for salmon bearing waterways.
- WRC is an important part of the industrial heritage of mill towns like Tacoma. Today WRC wood is still widely used for specialty wood products such as fencing and decking. Some communities still rely on mills specialized in WRC products.

WESTERN REDCEDAR DIEBACK

WRC dieback has been observed throughout the Northwest.

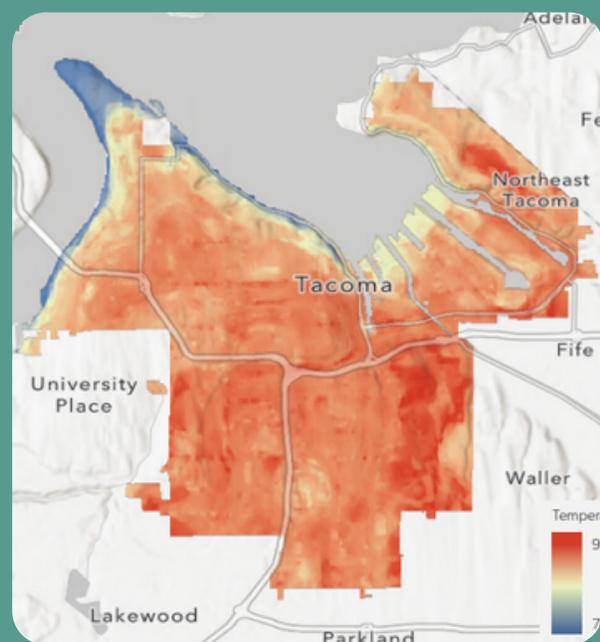
- A recent study found WRC tree mortality and canopy dieback increased with longer, hotter summer droughts (Andrus et al. 2023).
- WRC were stressed from warmer, drier climates in May-June, extending the dry-season and reducing radial growth. Consistent extended dry-seasons resulted in tree dieback and mortality (Andrus et al. 2023).
- Preliminary analyses in the WSU Ravenholt Urban Forest Health lab also indicated WRC dieback increases with urban heat. Trees in areas with warmer afternoon temperatures had higher probabilities of having dead tops.



POINT DEFIANCE AS AN OASIS

Given the vulnerability of WRC to higher urban temperatures, protecting populations in cooler areas is critical for keeping redcedar in our urban forest.

Air temperatures in Point Defiance are much lower than other regions in Tacoma. Therefore, it could serve as a potential oasis for WRC. Monitoring the WRC in Point Defiance is important for ensuring it remains part of Tacoma's urban forest in the future.



3 PM Temperatures in Tacoma in July 2018.
Photo from City of Tacoma Urban Forestry

More information at <https://treehealth.wsu.edu/parks>

STUDY APPROACH

Point Defiance may be an important refuge for western redcedar trees as summers become warmer and dryer. Mapping and monitoring WRC trees in the park will help conserve it in Tacoma's urban forest for future generations.



TAGGING

Each WRC will be given a tree number and be tagged at 4.5 ft above ground



DIAMETER

The diameter of WRC will be measured at metal tag's location in decimal inches (nearest tenth of an inch).



CANOPY SYMPTOMS

Each tree will be assessed by tree health

- Healthy
- Branch Dieback or 'Flagging'
- Thinning Canopy
- Dead Top
- Tree is Dead



OVERALL HEALTH CONDITION

Each tree will be rated for general health condition (good, fair, poor, or dead)



PERCENT DIEBACK

Estimate the percentage of the canopy that is unhealthy or dying.



UNDERSTORY PLANT SPECIES

Plant species below the WRC tree canopy will be recorded.



SIGNS OR SYMPTOMS OF INSECTS, DISEASES, OR DAMAGE

- Insect Damage on Trunk
- Needle or Leaf Disease
- Inner Stem Decay
- Fungal Activity
- Animal Damage
- Mechanical Damage or Fire Scars
- Invasive Plants Present or Growing on Tree
- Evidence of Soil Compaction
- Top Cutting or Intensive Pruning
- Other
- Multiple Factors



Get Involved



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TAGGING

Trees will be given a tree number and be tagged



DIAMETER

The diameter will be measured at metal tag's location



CANOPY SYMPTOMS

Tree symptoms will be assessed



HEALTH CONDITION

Trees will be rated for general health condition



PERCENT DIEBACK

Percentage of the canopy that is unhealthy will be estimated



UNDERSTORY PLANTS

Plant species below the tree canopy will be recorded



SIGNS OR SYMPTOMS OF INSECTS, DISEASES, OR DAMAGE

MORE INFORMATION

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