

Changing Times, Changing Gardens

presented by *Bess Bronstein, Horticultural Consultant, ISA Certified Arborist, Educator*

Climate Change Impacts and Gardeners

Gardeners notice changes in their gardens and landscapes over time. We notice when native plants start to show stress and perform poorly after doing well for decades. We notice when plants require more irrigation or shade in order to grow well. Impacts of climate change have appeared in our gardens. It is clear that we need to make modifications in how we garden into the future.

First of all, what do we know about climate in the maritime western Pacific Northwest? Generally temperatures are mild year-round, with rainy winters and dry summers. Native plants adapted to the fact that while several months in summer were droughty, there was usually enough water available during the other 9 months. However, things are changing. In recent decades we have experienced warming temperatures over longer periods, declines in summer streamflow due to reduced snowpack, and increases in extreme weather events. This has resulted in increased wildfires, as well as insect pest and disease problems.

Temperature and Precipitation Changes in PNW

Temperatures in the Pacific Northwest have increased 1-2° F. over the past century. Climate models project annual temperature increases up to 5° F by the 2080's. Rising temperatures increase evapotranspiration rates, affecting available amounts of groundwater. In addition, frost-free periods will be longer due to warmer temperatures, meaning longer periods where plants will need irrigation.

Annual precipitation projections indicate changes are small (1-2%), but the type and timing of precipitation is changing. Summers will be drier for longer periods, and rather than typical rainfall, heavy rain events will increase from fall to spring. Unlike snowpack, which melts slowly over many months, heavy rains lead to storm-water runoff that is not always available for plant use. In addition, much precipitation in the mountains will be rain, leading to less snowpack, resulting in less water melting into streams during the summer months when it is needed by plants.

Impacts for Gardeners

Longer warm periods with less available streamwater during summer months impact our gardens, landscapes and native forests. Forests are drier and warmer due to temperature increases, changes in type of precipitation, and less water availability in the soil. These stressed trees are more susceptible to diseases and insect pest infestations, and increase potential for wildfires, even in western Washington rural-urban interface areas. Garden plants are also subject to these same stressors, and gardeners need to monitor irrigation needs more regularly during lengthy periods of drought. Since growing seasons are now less predictable, pollinators and wildlife that depend on plants for habitat and food are also affected.

Actions for Gardeners to Take

There are some interrelated things that gardeners can do to help mitigate climate change impacts. These include

Water management and conservation

- periodically evaluate your garden or landscape for actual water needs
- group plants with like water needs
- use irrigation with smart controllers, use drip irrigation when possible
- water early in the morning or in the evening to decrease evapotranspiration
- water deeply but less often
- use mulch to reduce water evaporation from soil

Soil health and nutrient management

- maintain good soil structure by not overworking or over-tilling the soil
- avoid activities on the soil that lead to compaction
- do soil tests to identify actual nutrient deficiencies or pH issues
- improve soil if necessary with organic matter or by leaving organic waste
- mulch with wood chips rather than compost for longer lasting soil health

Management of organic material waste

- chip or compost organic waste on site
- use compost as soil amendment and wood chips for mulch
- watch for diseased materials that should be removed from the site
- recycle wood from trees (furniture, garden structures)

Equipment and materials selection

- replace equipment that uses fossil fuels with electric when appropriate
- recycle or reclaim materials when possible
- use sustainable wood products
- use permeable paving to decrease water runoff and improve water entry into soil

Garden design and plant selection

- design so that plants with like water and nutrient needs are grouped together
- select low water need or drought tolerant plants
- remove high maintenance plants and replace with plants that need less management
- remove plants with disease and insect pest problems
- use native plants and native plant relatives when appropriate
- plant trees!
- reduce turfgrass

Pollinator protection

- plant a variety of pollen rich plant species that provide food for pollinators
- decrease the use of pesticides in the garden or landscape



BESS BRONSTEIN, Horticultural Consultant, ISA Certified Arborist, Educator

bess2@centurytel.net

360/ 265 -1886