Understanding King County Soils for Better Gardening

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What we covered:

Discussed recent local geology and parent materials that created King County soils. This includes the five soil forming factors of parent material, climate, vegetation, topography and time

Discussed USDA soil surveys and USDA web-based soil surveys including major soil associations in King county, applications for using Google Earth

Discussed major soil properties including soil texture, soil structure, soil bulk density, porosity, infiltration, water-holding capacity and soil biology. The soil on your property is a 'soil material mix' created during the home building process. Often only 6 to 12 inches of this mix is filled over glacial till or subsoil

Reviewed soil tilth, quality and health

Summary/take-home messages

- Soil is made, changing all the time; a rock on it's way to the ocean
- Reviewed the 5 soil forming factors
- Discussed soil separates (sand, silt and clay)/ which create soil textures
- Microbial life and plants create soil structure/porosity/infiltration, but humans can destroy this
- Everything is nature is about recycling: life, growth, death, decay, new life
- Soil structure creates water holding capacity for plant growth

Putting it all together

- Soil texture affects soil structure which is affected by climate/topography/parent material
- Texture and structure (aggregate stability) affect water holding capacity (WHC) which is affected by infiltration
- Anything that destroys soil structure will have a negative effect on infiltration and WHC
- Anything that enhances soil structure will have a positive effect on infiltration and WHC
- Confining layers (glacial till, shallow water table) limit rooting and WHC
- Rooting depth and the plant's ability to extract soil water and nutrients are affected by all above

Resources/Reference

USDA Web Soil Survey
http://websoilsurvey.nrcs.usda.gov/app/

Google Earth: Just Google it!

King (county) Conservation District
https://kingcd.org/publications/soils/