



## **Class 2: Soil, Compost, and Gardening Methods**

*May all of you leave tonight with a new or renewed respect for the life underfoot, and the inspiration and knowledge to nurture your soil as if it really matters.*

### **Part 1 Soil: Not Just Dirt!**

#### **I. What is soil?**

Big picture of soil: Earth's realm's meet and mix • Soil forming factors & Puget Sound soils • Healthy soil: three components • Physical: texture • Physical: soil horizons • Chemical: nutrient stores and flows • Chemical: soil pH • Biological: organic matter & soil life

#### **II. Plant and Soil Interactions**

Photosynthesis • Carbon cycle • Nitrogen cycle • Soil food web • Bacteria, actinomycetes and their predators • Fungi • Arthropods • Earthworms • Soil aggregates

#### **III. Gardening for Soil Health**

Principles for maximizing soil health • Know what you have: soil testing • Fertilizing your garden • Benefits of cover crops • Fall and winter cover crops, cover crop mixes • Spring and summer cover crops • Compost and calorie crops • Feed and protect

### **Online Resources**

<http://www.bozemanscience.com/ap-es-006-soil-soil-dynamics>

<http://gardening.wsu.edu/compost-and-mulch/>

<https://www.southernshare.org/Educational-Resources/SARE-Project-Products/Fact-Sheets/Caring-for-the-Soil-as-a-Living-System>

<https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/biology/>

“Methods for Successful Cover Crop Management in Your Home Garden”

<http://cru.cahe.wsu.edu/CEPublications/FS119E/FS119E.pdf>

“Cover Crops for Home Gardens West of the Cascades”

<http://cru.cahe.wsu.edu/CEPublications/FS111E/FS111E.pdf>

### **Books**

*Healthy Soils for Sustainable Gardens* edited by Niall Dunne, Brooklyn Botanic Garden 2009. Short, excellent overview with complete information and abundant illustrations.

*Building Soil: a Down to Earth Approach* by Elizabeth Murphy, Quarto Publishing Group, 2015. Thorough book on soil science, targeted to home gardeners.

*Dirt: The Erosion of Civilizations* by David R. Montgomery, University of California Press, 2007. A big picture look at soil and civilizations, with clearly explained science too. A page-turner!