



low impact development technical workshop series

Bioretention Plants

Topics

Selection

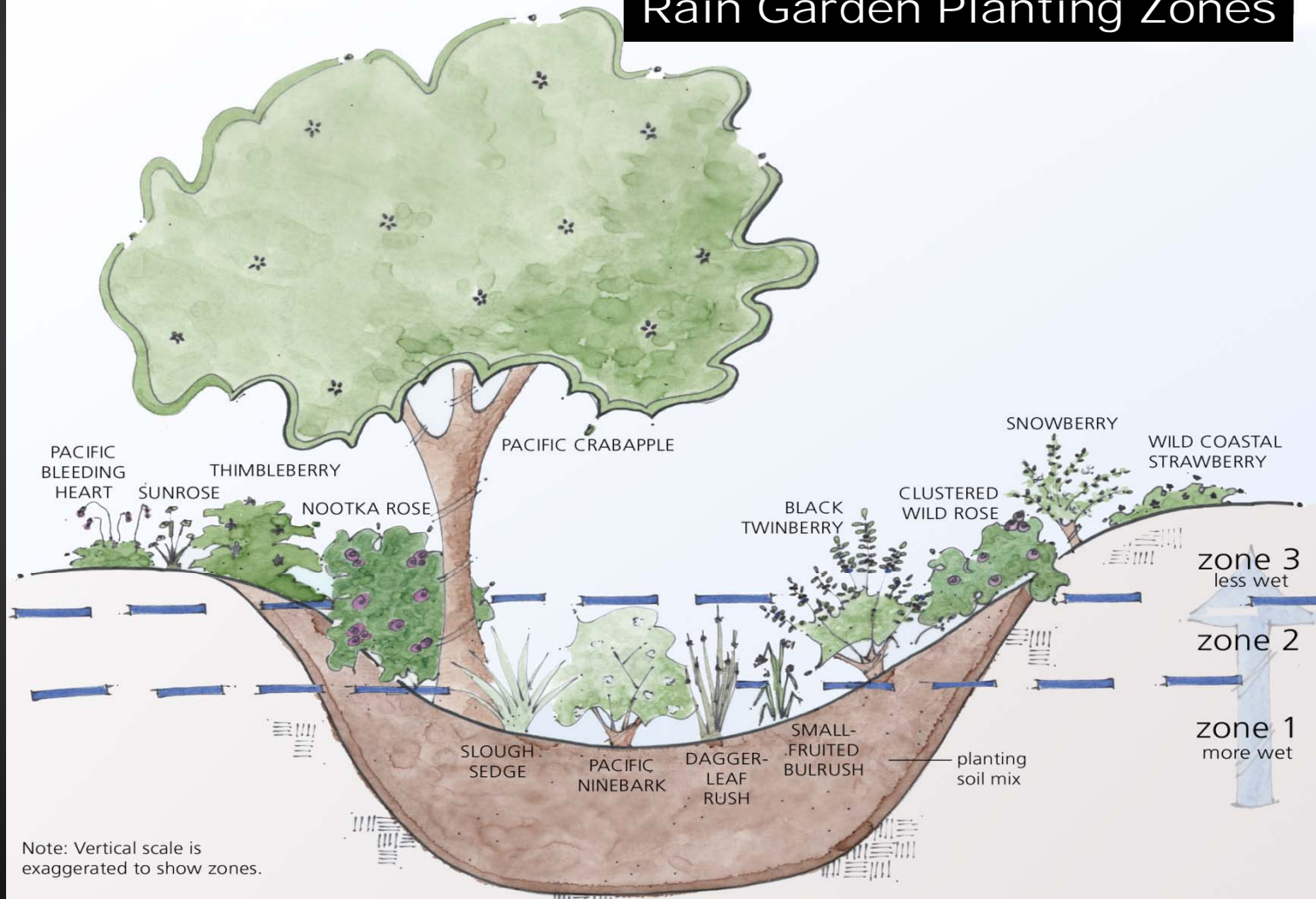
Siting

Soil structure and bioretention Performance

Mulch

The PNW (west of the Cascades) has a large plant palette that performs well in rain gardens

Rain Garden Planting Zones







Primary design considerations for plant selection



- Soil moisture conditions.
- Sun exposure.
- Above and below ground infrastructure.
- Site distances and setbacks along roadways.
- Pedestrian use.
- Adjacent plant communities and potential invasive species control.
- Visual buffering.
- Aesthetics.

bioretention plants

Bioretention areas rely on a plant-soil system to process pollutants and reduce stormwater volume

- Agricultural literature documents well the role of plants for building soil structure (Buckman and Brady 1969, Angers and Caron 1998).



- City of Portland OR documents increasing infiltration rates in 12-year old commercial parking bioretention areas. 1995~8"/hr, 2005~13"/hr (BES 2006).
- Lucas observes increased phosphate removal in vegetated vs non-vegetated bioretention... removal more than plant uptake.

A photograph showing two workers in orange shirts and dark pants applying mulch to a garden bed. One worker is bent over, using a rake to spread the mulch, while the other stands nearby. The garden bed contains various plants, including tall green grasses and small shrubs. A black plastic bag is visible on the ground. The background shows a paved area and a building.

Pollutant removal

Mulch reduces weed establishment, regulates soil temperature and moisture, and adds OM to soil.

Mulch should be:

- 2-3 inches thick.
- Chipped or shredded softwood or hardwood.
- Coarse compost for bottom of facility.
- Fine beauty bark not preferable.

