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SIMPLY TREES monthly column
Nebraska Forest Service
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What Our Forests Can Teach Us

SIMPLY TREES for June 2015 by Christina Hoyt, Nebraska Forest Service

To design well with trees, it's helpful to understand the native ecosystem they grow in naturally. Trees are adapted to a particular range of climate, terrain, exposure to sun and available moisture. All of these elements play a significant factor in the types of trees that occur in a given place and in the look and feel of the landscape.

Right Tree, Right Place

Terrain is a significant factor as it influences sunlight, moisture and other elements in the small microclimate. In Nebraska's regional lowlands, species like linden, pawpaw and birch are likely to be found on north and eastern slopes while more drought-tolerant species, like bur and black oak, tend to grow on ridge tops and on south- and west-facing slopes. Where forests are intersected by rivers, creeks, prairie edges, roads and paths, light is plentiful and there tends to be a greater diversity of species.

Trees Grow in Layers

Forests are comprised of layers—canopy, understory trees, shrubs, perennials—where a variety of plants share a small amount of space while still receiving the amount of space, sun, water and light each species requires. Layering also makes forests and planted landscapes far more interesting and varied.

In eastern Nebraska, the large trees in the forest canopy are primarily oak, hickory, maple, linden, ash, sycamore, hackberry and cottonwood. Heading west, diversity diminishes and gives way to ponderosa pine forest. These canopy trees create a ceiling, give scale to structures, frame views, act as a screen and, planted on the west and south side of buildings, provide substantial cooling. Large trees, both evergreen and deciduous, protect from the wind—an especially important function on open and rural properties.

Smaller statured trees like redbud, serviceberry and pawpaw thrive in protected, partially-shaded conditions in and among larger trees. Their interesting leaf textures, form and bloom make the understory change dramatically through the seasons and their smaller size visually connects the canopy to the forest floor and provides a comfortable, more human, sense of scale.

Shrubs and herbaceous material grow in the shelter below trees but, importantly, there is no turfgrass to mow or weed whack—with subsequent damage to tree trunks.

Landscapes Change

Forests and other landscapes change seasonally. In the early spring months, ephemerals like Jack-in-the-pulpit, Virginia bluebells and other woodland plants come to life before the trees above them set leaf. They grow, bloom, fruit and go dormant before the dry summer months and dense shade sets in. In fall, foliage turns red or yellow and once again brightens the landscape, and falling leaves add to the wealth of organic material at the base.

Landscapes also change gradually over the course of years and decades as a natural result of growth and of disturbances in the form of storms, pests and diseases, with hardier plants

taking over as more short-lived species decline. In our home landscapes, it's helpful to plant for the future, to be prepared for changes as trees decline and the plant community changes.

Our native forests and prairies give us a rich palette of plants adapted to Nebraska's climate and likely to adapt to the changes ahead as well. They can serve as valuable models of species selection, placement and management for our planted landscapes.