

A Subtler Loss— Conifer Needles Gradually Replaced by New Ones

SIMPLY TREES for January 2015 by Justin Evertson, Nebraska Forest Service

With all the disease, insect and weather problems facing Nebraska trees, the changes and losses that are natural, gradual and necessary are worth noting and understanding. Among those changes, for conifers, is the gradual loss of old needles as new ones replace them.

Although most conifer trees are considered evergreens, they eventually shed their leaves (needles) just like deciduous trees. What makes them evergreen is their leaves persist more than one year before falling. Since new needles are added every year, there is always an overlap between green needles and those that are due to fall.

Most pine trees retain their needles for three to four years before dropping. Depending on the species, however, the period of retention can range anywhere from two years for some faster-growing types to more than 15 years for slower growers like bristlecone pine. In the Midwest, the evergreen with the most prominent needle drop is white pine. Every fall these trees are sprinkled with yellow needles. People who notice this for the first time often assume the trees are sick or dying.

Sudden temperature drop like we experienced in November can also cause some evergreens to discolor a bit and may cause some needles to be dropped sooner than usual the following year. Such discoloration and needle drop is usually not a significant problem for otherwise healthy trees.

Needle drop is least evident on junipers, spruce and fir trees. On these species, the needles typically persist until they are shaded out by branch growth. Since these needles don't dramatically change color when they drop, the act of shedding usually goes unnoticed. However, walking barefoot under a mature spruce tree would painfully reveal the truth about needle drop.

Deciduous conifers, on the other hand, shed all their needles every year. This includes trees like larch, baldcypress and dawn redwood. Larch needles turn a nice golden yellow in fall and baldcypress and dawn redwood turn bronzy, all of them adding beauty to the fall landscape but leaving them barren for the rest of the winter.

These normal changes stand in contrast to more worrisome problems that are affecting many of our conifers today. Needle blight, pine wilt, bagworms, bark beetles, pine moths, drought and a warming climate are just some of the afflictions affecting so many of our evergreens. Unfortunately, many tree experts anticipate that our future will include fewer evergreens in the landscape.

To learn more, see forest health problems of evergreens at nfs.unl.edu/program-foresthealth.asp.