By Jessica Kelling
Nebraska Forest Service

They tend to be ignored since they're not visible, but tree roots are just as important as the visible portion of a tree that beautifies communities, captures carbon and shades our homes. In reality, overall tree health is largely determined by the health of the root system.

Tree roots extend even beyond the canopy or drip line. Trees have both woody roots to support the tree and nonwoody or absorbing roots to take in water and nutrients.

Absorbing roots need moisture and oxygen to survive and are usually close to the soil surface layer where moisture, oxygen and organic materials are concentrated. Unless the soil is extremely poor, trees do not need fertilizer since they produce their own food through photosynthesis.

Fertilization may immediately benefit the tree canopy but often to the detriment of the root system.

Toward the end of the growing season trees focus on storing energy in their roots and, surprisingly, root growth often continues even during the winter months. This allows trees newly planted in the fall to get a jump on next year's growing season as they can concentrate on root development rather than leaf and stem growth.

Although many trees are highly adapted to survive in our landscapes, for healthier trees follow some of these tips for planting and care:

• Inspect the root system before purchasing a new tree. Trees with circling or pot bound roots are not likely to thrive, regardless of other growing conditions.

• Mulching trees with a 2-3 inch layer of wood mulch will protect tree roots from weather extremes, conserve moisture and eliminate weed and grass competition.

Keep mulch away from the base of the trunk and don't apply it too thickly as excessive mulching can trap excess moisture at the base of the trunk and around the roots, resulting in insect and disease problems and encouraging roots to grow upward and girdle the trunk

• Unless soil has a known nutrient deficiency that has been identified by a soil test, do not fertilize trees. Overfertilization can destroy beneficial soil organisms, which are part of a healthy soil.

Over-irrigation depletes soil oxygen and is more likely to kill trees than under-irrigation.

Protect existing tree roots from compaction caused by foot traffic or construction and don't add new soil, i.e. planting wells or other hardscaping, on top of root systems.

Start a new tradition this fall, and plant a tree during ReTree Nebraska week (Sept. 18-24), paying special attention to root health and proper planting methods.

For more information about healthy roots, tree planting and care, visit retreenebraska.org.