



TREES AND SHRUBS

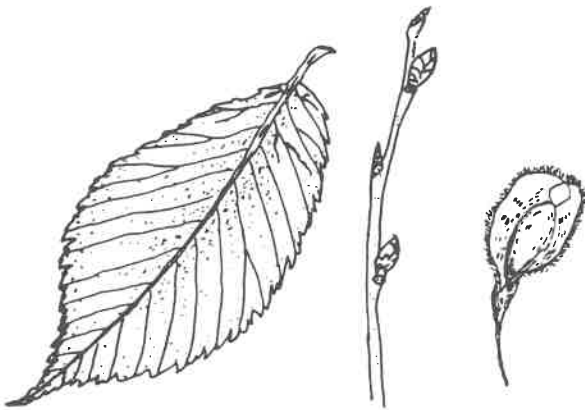
Flood Plain Prairie Forest Species
Urban Forest Species

AMERICAN ELM

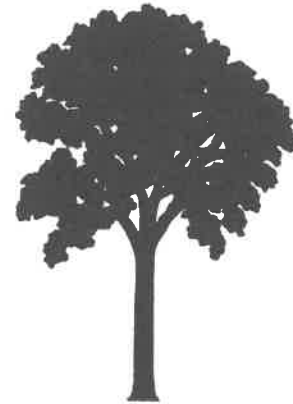
(*Ulmus americana*)

Description

Ulmus is the ancient Latin name for elm. *Americana* is the Latinized name for American in reference to the North American origin of the tree. Other common names are soft elm, water elm, and white elm. It is also known by the Lakota as *p'e'can*, and *ezhoⁿska* by the Omaha people.



The American elm is a member of the elm family, Ulmaceae, along with hackberry (*Celtis occidentalis*). Elm leaves are *deciduous, alternate, simple*, 4 to 6 inches (10 to 15 cm) long, *oblong-ovate*, with a *margin* that is coarsely *doubly serrate*. The flowers are inconspicuous and appear before the leaves in clusters of 3 or 4. They are composed of a green *calyx* and red stamens. Fruits are 1/2 inch (1.27 cm) long, rounded, notched



samara fringed with hairs. The brown twigs zigzag with a *lateral bud* at each turn. The bark is grayish with flat topped ridges and diamond-shaped furrows.

Distribution

American elm has an extensive natural range. It is found from the western border of the plains states to the Atlantic Ocean. It is the state tree of Massachusetts, Nebraska, and North Dakota. American elm is found throughout South Dakota. While it is widely distributed, it is restricted to well-drained, fertile, bottomland soils such as those along the lower Missouri River. At the western edge of its natural range, it is restricted to valley bottoms along water courses. American elm is planted throughout South Dakota.



Native Distribution

American elm is intermediate in tolerance to competition. It generally comes into a forest after ash and boxelder have become established. Sometimes, it also can be found as an understory species in cottonwood stands. Once part of the forest, it tends to perpetuate itself and, barring disturbances, will remain the dominant tree species in the flood plain forest.

Natural History

Two hundred years ago, in the natural forest, the primary problems facing American elm were flooding, drought and fire. It can not withstand flooding as well as willow and cottonwood. Elms can tolerate early spring floods that subside before the tree begins to grow, but if the flooding persists for several months, the trees will die. Though elms are more drought tolerant than willows and cottonwoods, many died during the drought of the 1930's. American elm is also very susceptible to fire injury.

Now one of the greatest problems facing American elm is a disease called Dutch elm disease. This fungal disease was introduced into the United States by diseased elm logs brought in from Europe before 1930. The disease is spread across long distances by bark beetles or people who may bring infected logs or trees into a new area. It is also transmitted tree to tree through root

grafts. Once elms become infected, the trees usually die. The disease was first reported in South Dakota in 1967. It has now spread throughout the state.

Life Span: American elm is a very long-lived tree. Maturity is reached in about 150 years and many trees live to be 300 years old. Dutch elm disease has shortened the life of elm trees. Now it is difficult to find trees over 100 years old.

Size: The largest American elm is in Louisville, Kansas. It is 310 inches (787 cm) in circumference, 95 feet (29 m) tall and has a branch spread of 116 feet (35 m). The South Dakota state champion is in Huron. It is 136 inches (345 cm) in circumference, 84 feet (26 m) tall, and has a branch spread of 74 feet (23 m). Most American elms planted in towns do not get this large. They average about 45 to 60 feet (14 to 18 m) tall.

Significance

American elm is a strong wood. It was once used for things that received a lot of shock or wear, such as ship decks or wagon wheel hubs. The American Indians were the first to recognize the strength of elm, using logs to make mortars for grinding corn and for lodge posts. The wood was also used for fuel and is still used for firewood today. Elm is still a highly prized wood, and now is used for making furniture.

American elm was one of our most popular *ornamental* trees. Many prairie cities, which chose to conduct Dutch elm disease management programs, still have elms along their streets. For early prairie communities the tree was an excellent choice. It grew tall enough so that traffic could pass safely beneath it. Elm also tolerated the harsh growing conditions found in cities. Now Dutch elm disease is so prevalent that few elms are being planted.

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