

Identifying Common Trees and Shrubs in the Eastern U.S.

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This episode of All Things Wetland Plants focuses on characteristics of woody plant leaves and twigs that can be used to identify tree, shrub, and woody vine species commonly encountered during wetland delineations. Plants are identified using a generic illustrated key and a list of common plant species on the National Wetland Plant List (NWPL). Both are available on the NWPL website (www.wetland-plants.usace.army.mil) Identification booklets for common wetland delineation plant species, such as those for the Southeastern U.S., the L.A. District or the Jacksonville District are also available. Identification booklets group species based on the types of leaf arrangements and leaf margins. These booklets are species limited, only common wetland delineation species are included.

Leaf Arrangements – Broad Leaved Trees

Our illustrated key distinguishes among several types of leaf arrangements. Most leaves sit upon a stalk (petiole). Leaves are either compound, containing several smaller leaflets, or simple (Figure 1b and 1a). To determine whether a leaf is simple or compound look for a bud

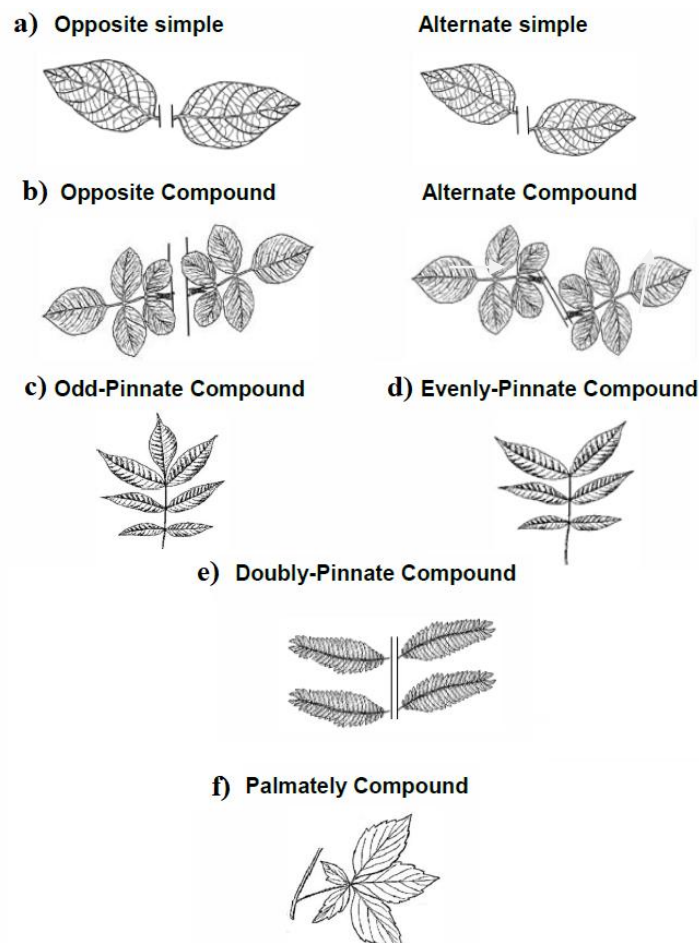


Figure 1. Leaf arrangements used to identify broad-leaved woody plants.

(next year's leaf) directly above the base of the petiole where it connects to the twig. Leaves may be located opposite one another on the twig, or in an alternating fashion (Figure 1a). Compound leaves are further classified as palmate compound, in which the leaflets are joined at a central point (Figure 1f), and pinnate compound, in which the leaflets are opposite one another, (Figure 1c and 1d). The modifiers odd and even refer to the number of leaflets in the leaf. A few species, have leaves that are doubly-pinnate, meaning that pinnate leaflets are arranged opposite one another along a large petiole. Sometimes leaf scars are used for identification purposes. Leaf scars remain on a stem after the leaves have fallen. The circles within each scar are the severed ends of vascular tissues that once connected the twig to the petiole.

The broad leaf key also requires users to distinguish among types of leaf margins (Figure 2). Unbroken leaf margins that lack indentations are referred to as entire (Figure 2a). Lobed leaf margins have indentations (Figure 2d). The lobe is the portion of the leaf that juts out and the indented part of the margin is the sinus. The shape of the sinus, U-shaped or V-shaped, and sinus depth, deep or shallow, is often important when identifying woody plants. Margins that jut in and out are referred to as toothed (Figure 2c). Teeth may be sharply pointed or somewhat rounded. Margins that undulate are described as wavy (Figure 2b).

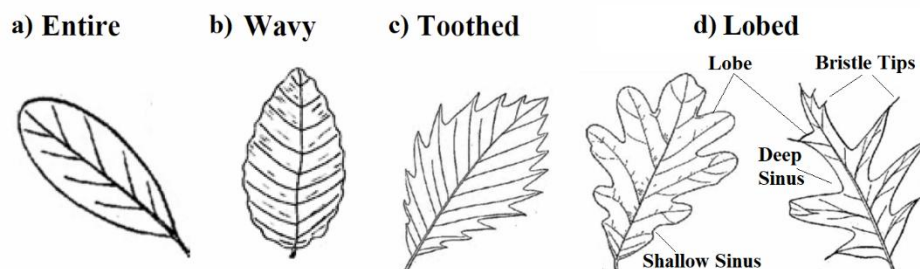


Figure 2. Margin characteristics used to identify broad-leaved woody plants.

Conifers produce seeds on the scales of cones. Conifers are classified as gymnosperms, which means naked seed. Seeds are considered “naked” because they are not enclosed in and protected by a fruit. The size of the cone and whether the cone is stalked or sessile can be diagnostic when identifying conifers (Figure 3).

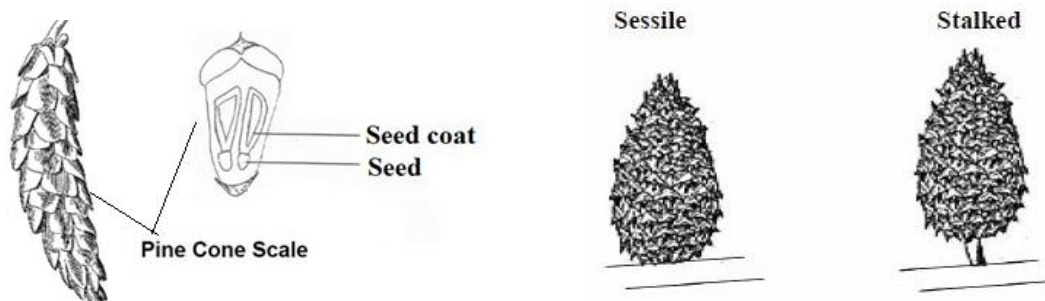


Figure 3. Seed bearing structures in conifers.

Leaf types and leaf arrangements are also important when identifying conifers. This video introduces three types of conifer leaves (Figure 4). Scale-like leaves are flat and overlap each other. Needles may be long or short, flat or rounded in cross-section. Other conifers have sharp, pointy, awl-shaped leaves.

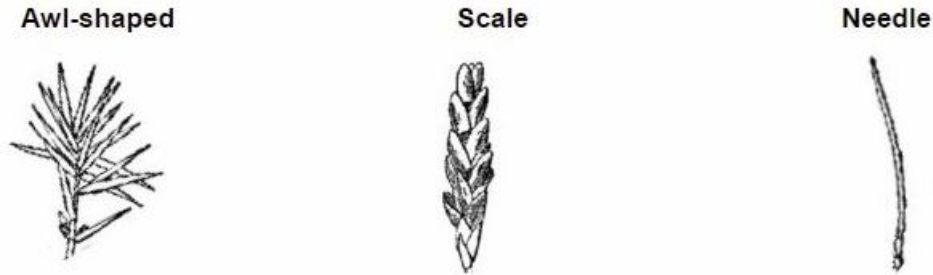


Figure 4. Three leaf types used to identify conifers.

Conifer leaf arrangement is also different, when compared to broad leaved woody plants. In these keys there are three types of leaf arrangements (Figure 5). Two-ranked needles are arranged opposite one another along the twig. Leaves that are spirally arranged, have a whorled appearance, emerging from all sides of the twig. Other needles are arranged in groups known as bundles or fascicles. Bundles are held together at the base by a sheath. The number of needles in a bundle is an important characteristic for species identification.

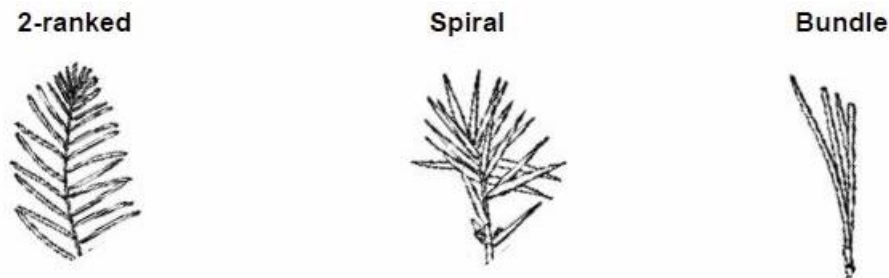


Figure 5. Three leaf arrangements used to identify conifers.

If you have questions about woody plants, email us at nwpl@usace.army.mil