

The following is the chapter on defining “native plant” in *Roadside Use of Native Plants*, US Dept. of Transportation. www.fhwa.dot.gov/environment/rdsduse (viewed 1/22/2007)

Defining What is Native--What Is A Native Plant?

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The native plant species in any particular area of interest are those which arrived, established, and survived there without direct or indirect human assistance. It is obvious that plants (or animals) accidentally or deliberately imported by people from faraway places are not native, but it is more difficult to determine whether plants in a general region or state are native to a particular site.

There are many definitions for native plants that differ in minor ways. We here adopt and discuss the definition recently developed for the Native Plant Conservation Initiative: A native plant species is one "that occurs naturally in a particular region, state, ecosystem, and habitat without direct or indirect human actions" (Federal Native Plant Conservation Committee, 1994). Most native plants have been in the same area for centuries or longer. However, natural spread and dispersal of species (without human intervention) continues to occur, occasionally leading to an expansion of a species' natural geographical range.

The distinction between native and non- native species is important because native species have generally adapted and evolved with the competing species, predators, and diseases of an area over many thousands of years. Native species are therefore generally in reasonable ecological balance with their associates and competitors, and have pests, predators, or diseases that limit their abundance. Many non- natives, on the other hand, lack these checks, and can quickly spread and dominate areas they invade, changing habitats and pushing out many native plants and animals there. Technological advances in transportation over the past few centuries have allowed humans to deliberately and accidentally move plant and animal species to new parts of the world at rates unprecedented in the history of our planet. This unnaturally high rate of exotics introductions places a burden on native plants and animals that are often unable to compete with these unrestrained interlopers. Nothing in our native plants' evolutionary heritage has prepared them to compete with large numbers of new species that arrive free of the predators and pests that kept their numbers in check in their original ranges. Plants that are not native at a site are variously called non- native, exotic, alien, adventive, or non-indigenous species. Well- established non- natives are sometimes said to be naturalized, but that does not make them native, no matter how long ago they were introduced. In the Americas, most exotic plants were spread through travel, trade, and commerce in the past few centuries, after European colonization and the major land- use changes that soon followed.

Several concepts are fundamental to this definition of a native plant.

1. Naturally occurring. The plants found growing in a particular area, either currently or in the historical past, are said to occur there. When there is no evidence that human activities brought them there, these plants are considered to occur naturally at that site. Put differently, they are part of the natural landscape of that area, either because they evolved there or because they arrived through natural means, such as dispersal by birds, other animals, the wind, or water.
2. Area of interest. A species may be classified as native to a particular nation, state, region, ecosystem or habitat. Obviously a species native to the U.S. may not be native to all 50 states and a species native to a given state, say California, may not be native to all regions, ecosystems or habitats in the state.
 - a. Native to nation. If a plant species is known to be native to at least one site in a nation it is said to be "native to that nation." Plants native only to other continents cannot be considered native in the U.S.
 - b. Native to state. If a plant is known to be native in at least one site in a particular state, it is considered "native to that state." However, it may or may not be native to a different site in the same state. Since numerous botanical references address the question of which plant species are considered to be native in which states, the state level is often a good starting point for determining whether a species is locally native. Many botanical manuals and horticultural references give generalized native ranges for thousands of commonly encountered plant species.

- c. Native to region. The ecological region which the site represents should also be considered. For example, the state of Maryland has several distinct natural regions, such as the Coastal Plain, Piedmont, Allegheny Mountains, and Appalachian Plateau. If a species is not native to a region of the state, then it is not native to any site in that portion of the state. Tamarack (*Larix laricina*), for instance, is native in Maryland only in the Appalachian Plateau, and therefore would not be considered native at any Maryland site near the Atlantic Ocean or Chesapeake Bay. Similarly, bald cypress (*Taxodium distichum*) is native in Maryland only on the Coastal Plain, and would not be considered native at the Plateau sites where tamarack is found, nor in any of the other ecological regions of Maryland. Nevertheless, both species are considered native to Maryland.
 - d. Native to ecosystem and habitat. Many species are confined to particular ecosystems and habitats within a given state or ecological region, and would not be considered native in substantially different ecosystems or habitats, even within the same state and region. For example, tamarack in Maryland and nearby areas is known naturally only in swamp ecosystems; therefore, tamarack would not be expected to occur naturally on dry ridgetops in Maryland, even in the Appalachian Plateau. Ecosystems include interacting habitats, providing additional ecological resolution in considering whether a species is native at a particular site of interest. For example, a species may be known to be native only in tidal marshes (e.g., *Spartina alterniflora*). This statement gives two clues: it should be expected in the marsh habitat, but only in marshes that are part of tidal ecosystems. However, a different habitat in a tidal ecosystem, such as a densely shaded cypress swamp, would not be a place where this grass would be considered native, even if nearby to the tidal marsh.
3. Direct and indirect human actions. Human actions that move plants (or animals) to new places can be direct or indirect. Most obvious are deliberate introductions of plants to new areas, for example in gardening, forestry, or agriculture. Accidental, or unintentional, introductions of weeds to new places also occur regularly. Once introduced to a new area, plants can spread and disperse further; these newly established populations are attributable to the earlier human-caused introduction, however, and are thus the indirect result of human actions. No matter how long a plant persists in an area, or how far it has subsequently spread, it does not become native to the area if its history there is traceable to a human introduction.

The above definition addresses the question of whether a particular plant species is native to a particular site, but not whether a given individual plant is native there. When plants from elsewhere are brought into an area where the same species already occurs naturally, the introduced plants are not considered native to that site. This distinction is important because we know that local populations are often genetically distinctive and adapted to conditions that prevail where they occur.

In determining whether a species can be considered native at a particular site, evidence of apparent natural, native occurrence should be balanced against evidence of introduction. While most cases are easily resolved, there are borderline cases. Expert assistance from botanists or plant conservationists should be sought in questionable cases before making irreversible management decisions, whether eradicating a species which is suspected to be non-native or planting a species at a site where it is thought to have once been native but does not presently grow. Careful study and consideration whether a plant species is native or non-native may prevent the unintended introduction of a species which is not truly native to a site or the elimination of a disjunct, local population of a species that might be an unusual and perhaps evolutionarily important natural stand.

Further background on the topic of native and exotic species, and the policy and management issues involved, can be found in a variety of sources, of which the following are representative:

- Randall, J.M. 1997. Defining weeds of natural areas. Pages 18- 25 In J. Luken and J. Theiret (eds.) Assessment and management of plant invasions. Springer, New York.
- Randall, J.M., and J. Marinelli (eds.) 1996. Invasive plants: weeds of the global garden. Handbook #149, Brooklyn Botanic Garden, New York.
- Schwartz, M. 1997. Defining native plants. J. Luken and J. Theiret (eds.) Assessment and management of plant invasions. Springer, New York