

## Conservation Plant Characteristics Data Definitions

We have Characteristics for about 2000 conservation plant species and 500 additional cultivars. (A cultivar is a variety, strain, or race that has originated and persisted under cultivation or was specifically developed for cultivation; cultivar is the cultivated plant equivalent of botanical variety.) Mostly we have species (not cultivar) data since conservation plants are primarily native plants without named cultivars. We also have this species data for most of the plants that have cultivar data, and the data ranges for a species generally encompass the ranges for its cultivar(s). In a few cases we have cultivar data only.

These data have been gathered from the scientific literature, gray literature, agency documents, and the knowledge of plant specialists. Characteristics data values are best viewed as approximations since they are primarily based on field observations and estimates from the literature, not precise measurements or experiments. Characteristics for the many conservation plant species native to the U.S. were typically provided by experts familiar with the species in its natural setting. Most values given apply to plants nationwide. Many values are relative to other species since absolute figures are not available. If you think the data can be improved, please contact the [Data Steward](#).

### Summary

**Duration:** From PLANTS core data set.

**Growth Habit:** From PLANTS core data set.

**Native Status** From PLANTS core data set.

**Federal T/E Status:** From PLANTS core data set, established by the USFWS.

**National Wetland Indicator:** From PLANTS core data set, established by the USFWS and USACOE.

### Morphology/Physiology

**Active Growth Period:** Plants have their most active growth in which seasonal period?

- Spring
- Spring & Fall
- Spring & Summer
- Spring, Summer & Fall
- Summer
- Summer & Fall
- Fall
- Fall, Winter & Spring
- Year-round

**After Harvest Regrowth Rate:** What is the relative rate of regrowth of a herbaceous plant after a harvest of above ground herbage? Woody plants are left blank here.

- Slow, Moderate, Rapid

**Bloat:** What is the relative potential of an herbaceous plant to cause bloat in livestock? Woody plants are scored "None" here by default.

- None, Low, Medium, High

**C:N Ratio:** C:N ratio is the percentage of organic carbon divided by the percentage of total nitrogen in organic material. We specify the organic material as either the above ground biomass of an herbaceous plant or the above ground herbaceous material of a woody plant. Our relative values correspond to these numerical ranges: Low: <23; Medium: 23 – 59; High: >59.

- Low, Medium, High

**Coppice Potential:** Is the tree or shrub suitable for the coppice method of silviculture. Coppicing completely removes the canopy of woody plants, cutting them at or just above ground level. Plants other than trees and shrubs are scored "No" here by default.

- Yes, No

**Fall Conspicuous:** Are the leaves or fruits conspicuous during Autumn from a landscaping aesthetics standpoint?

- Yes, No

**Fire Resistant:** Is the plant known to resist burning? If the plant can carry a fire—and most can—this value will be no. This characteristic is best evaluated with reference to problem fires in California.

- Yes, No

**Flower Color:** What is the predominant color of the flowers?

- Blue
- Brown
- Green
- Orange
- Purple
- Red
- White
- Yellow

**Flower Conspicuous:** Are the flowers conspicuous from a landscaping aesthetics standpoint?

- Yes, No

**Foliage Color:** What is the predominant color of the foliage?

- Dark Green
- Green
- Gray-Green
- Red
- White-Gray
- Yellow-Green

**Foliage Porosity Summer:** How porous is the foliage during the summer months?

- Porous, Moderate, Dense

**Foliage Porosity Winter:** How porous is the foliage during the winter months?

- Porous, Moderate, Dense

**Foliage Texture:** What is the general texture of the plant's foliage relative to other species with the same growth habit?

- Fine, Medium, Coarse

**Fruit/Seed Color:** What is the predominant and conspicuous color of the mature fruit or seed from a landscaping aesthetics standpoint?

- Black
- Blue
- Brown
- Green
- Orange
- Purple
- Red
- White
- Yellow

**Fruit/Seed Conspicuous:** Is the fruit or seed conspicuous from a landscaping aesthetics standpoint?

- Yes, No

**Growth Form:** What is the primary growth form on the landscape in relation to soil stabilization on slopes and streamsides? Each plant species is assigned the single growth form that most enhances its ability to stabilize soil.

- **Bunch:** Plant development by intravaginal tillering at or near the soil surface without production of rhizomes or stolons.
- **Colonizing:** A plant that is likely to behave as a colonizer when planted to enhance soil stabilization.
- **Multiple Stems:** Plant development by producing two or more stems. Examples: roundleaf dogwood (*Cornus rugosa*) and red huckleberry (*Vaccinium parvifolium*).
- **Rhizomatous:** Plant development by the production of rhizomes which give rise to vegetative spread.
- **Single Crown:** A herbaceous plant that develops one persistent base.
- **Single Stem:** Plant development by the production of one stem. Examples: corn (*Zea mays*) and American beech (*Fagus grandifolia*).
- **Stoloniferous:** Plant development by the production of stolons which give rise to vegetative spread.
- **Thicket Forming:** A plant that is likely to develop thickets when planted to stabilize soil.

**Growth Rate:** What is the growth rate after successful establishment relative to other species with the same growth habit?

- Slow, Moderate, Rapid

**Height at Base Age, Maximum:** Maximum height (in feet) of a tree, shrub or sub-shrub, under ideal conditions, at a base age. The base age is 20 years for trees in temperate areas (>30 degrees north latitude), 10 years for trees in tropical areas (≤30 degrees north latitude), and 10 years for all shrubs and sub-shrubs. Ideal conditions are defined as soil pH = 5.0-7.8; soil salinity ≤ 4 mmhos/cm; soil depth ≥ 40 inches; effective average annual precipitation ≥ 30 inches; soil texture class = medium; no ponding; rare or no annual flooding; and high water table depth ≥ 1 foot during plant active growth period. Plants other than trees, shrubs, and sub-shrubs are left blank here.

**Height at Maturity:** Expected height (in feet) of plant at maturity. This is an estimate of the median mature height of all plants of a species or cultivar. Within a species mature height is quite variable, so this estimate is provided only to give a rough idea for planning purposes.

**Known Allelopath:** Has this plant species been shown to be allelopathic to at least one other species?

- Yes, No

**Leaf Retention:** Does the tree, shrub, or sub-shrub retain its leaves year round? Plants with other growth habits are scored "No" here by default.

- Yes, No

**Lifespan:** What is the expected lifespan (in years) of a perennial plant relative to other species with the same growth habit? For the Tree growth habit: Short: < 100; Moderate: 100 - 250; Long: >250. Life spans for other growth habits are not quantified.

- Short, Moderate, Long

**Low Growing Grass:** Does the growing point (terminal meristem) of the vegetative grass tiller remain either at or near the crown? Plants other than grasses are scored "No" here by default.

- Yes, No

**Nitrogen Fixation:** How much nitrogen is fixed by this plant in monoculture? Our relative values correspond to these numerical ranges: None: 0 lb. N/acre/year; 0<Low<85; Medium: 85-160; High: >160.

- None, Low, Medium, High

**Resprout Ability:** Will the woody perennial resprout following top (above ground biomass) removal? Herbaceous plants are scored "No" here by default.

- Yes, No

**Shape and Orientation:** What is the growth form or predominant shape of an individual plant? (This characteristic is especially useful for selecting species for windbreaks.)

- Climbing
- Columnar
- Conical
- Decumbent
- Erect
- Irregular
- Oval
- Prostrate
- Rounded
- Semi-Erect
- Vase

**Toxicity:** What is the relative toxicity of the plant to either humans or livestock?

- None, Slight, Moderate, Severe

## Growth Requirements

**Adapted To Coarse Textured Soils:** Can this plant establish and grow in soil with a coarse textured surface layer? See table below for more information.

- Yes, No

**Adapted To Medium Textured Soils:** Can this plant establish and grow in soil with a medium textured surface layer? See table below for more information.

- Yes, No

**Adapted To Fine Textured Soils:** Can this plant establish and grow in soil with a fine textured surface layer? See table below for more information.

- Yes, No

Characteristics soil texture groups and corresponding soil texture classes.

Characteristics soil texture group	Corresponding soil texture classes from the Soil Texture Triangle		
<b>Coarse</b>	Sand	Coarse sand	Fine sand
	Loamy coarse sand	Loamy fine sand	Loamy very fine sand
	Very fine sand	Loamy sand	
<b>Medium</b>	Silt	Sandy clay loam	Very fine sandy loam
	Silty clay loam	Silt loam	Loam
	Fine sandy loam	Sandy loam	Coarse sandy loam
	Clay loam		
<b>Fine</b>	Sandy clay	Silty clay	Clay

Source: The soil texture classes are from the Soil Science Society of America, <http://www.soils.org/>. An NRCS team partitioned the soil textures into the three groups.

**Anaerobic Tolerance:** What is the relative tolerance to anaerobic soil conditions?

- None, Low, Medium, High

**CaCO<sub>3</sub> Tolerance:** What is the relative tolerance to calcareous soil? We define calcareous soil as soil containing sufficient free CaCO<sub>3</sub> and other carbonates to effervesce visibly or audibly when treated with cold 0.1M HCl. These soils usually contain from 10 to almost 1000g/kg CaCO<sub>3</sub> equivalent.

- None, Low, Medium, High

**Cold Stratification Required:** Will cold stratification significantly increase the seed germination percentage of this plant?

- Yes, No

**Drought Tolerance:** What is the relative tolerance of the plant to drought conditions compared to other species with the same growth habit from the same geographical region? Drought tolerance is defined here in the following fashion: Imagine that in an acre of land there are low areas that have heavy soil and tend to accumulate more soil moisture, and higher areas that have coarse textured soil and tend to accumulate less soil moisture. Some plant species are most frequently found growing in the higher areas with the coarse soil texture. These plant species are considered to be more drought tolerant than the species that are frequently found in the low areas with fine textured soil.

- None, Low, Medium, High

**Fertility Requirement:** What relative level of nutrition (N, P, K) is required for normal growth and development?

- Low, Medium, High

**Fire Tolerance:** What is the relative ability to resprout, regrow, or reestablish from residual seed after a fire?

- None, Low, Medium, High

**Frost Free Days, Minimum:** The minimum average number of frost-free days within the plant's known geographical range. For cultivars, the geographical range is defined as the area to which the cultivar is well adapted rather than marginally adapted.

**Hedge Tolerance:** What is the relative tolerance of woody perennials to hedging (close cropping) by livestock or wildlife? Herbaceous plants are scored "None" here by default.

- None, Low, Medium, High

**Moisture Use:** Ability to use (i.e., remove) available soil moisture relative to other species in the same (or similar) soil moisture availability region.

- Low, Medium, High

**pH, Minimum:** The minimum soil pH, of the top 12 inches of soil, within the plant's known geographical range. For cultivars, the geographical range is defined as the area to which the cultivar is well adapted rather than marginally adapted.

**pH, Maximum:** The maximum soil pH, of the top 12 inches of soil, within the plant's known geographical range. For cultivars, the geographical range is defined as the area to which the cultivar is well adapted rather than marginally adapted.

**Planting Density Per Acre, Minimum:** Recommended minimum number of individual plants to plant per acre.

**Planting Density Per Acre, Maximum:** Recommended maximum number of individual plants to plant per acre.

**Precipitation, Minimum:** Minimum tolerable rainfall (in inches), expressed as the average annual minimum precipitation that occurs 20% of the time (i.e., the probability of it being this dry in any given year is 20%) at the driest climate station within the known geographical range of the plant. For cultivars, the geographical range is defined as the area to which the cultivar is well adapted rather than marginally adapted.

**Precipitation, Maximum:** Maximum tolerable rainfall (in inches), expressed as the annual average precipitation of the wettest climate station within the known geographical range of the plant. For cultivars, the geographical range is defined as the area to which the cultivar is well adapted rather than marginally adapted.

**Root Depth, Minimum:** The minimum depth of soil (in inches) required for good growth. Plants that do not have roots such as rootless aquatic plants (floating or submerged) and epiphytes are assigned a minimum root depth value of zero.

**Salinity Tolerance:** What is the plant's tolerance to soil salinity? Tolerance to a soil salinity level is defined as only a slight reduction (not greater than 10%) in plant growth. None = tolerant to a soil with an electrical conductivity of the soil solution extract of 0-2 dS/m; Low = tolerant to 2.1-4.0 dS/m; Medium = tolerant to 4.1-8.0 dS/m; High = tolerant to greater than 8.0 dS/m.

- None, Low, Medium, High

**Shade Tolerance:** What is the relative tolerance to shade conditions?

- Intolerant, Intermediate, Tolerant

**Temperature, Minimum (°F):** The minimum tolerable temperature is the lowest temperature recorded in the plant's historical range. If this is not available, the record low January temperature recorded at climate stations within the current geographical range of the plant is used. This definition does not apply to summer annuals.



## Reproduction

**Bloom Period:** During what seasonal period in the U.S. does the plant bloom the most? The bloom period is defined as the time when pollen is shed and stigmas are receptive.

- Spring
- Early Spring
- Mid Spring
- Late Spring
- Summer
- Early Summer
- Mid-Summer
- Late Summer
- Fall
- Winter
- Late Winter
- Indeterminate

**Commercial Availability:** What is the availability of plant propagules in the commercial marketplace?

- No known source
- Routinely available
- Contracting only: available only through contracting with a commercial grower
- Field collections only: not produced by commercial growers

**Fruit/Seed Abundance:** What is the amount of seed produced by the plant compared to other species with the same growth habit?

- None, Low, Medium, High

**Fruit/Seed Period Begin:** Season in which the earliest fruit or seed of the fruit/seed period is visually obvious.

- Spring
- Summer
- Fall
- Winter
- Year-round

**Fruit/Seed Period End:** Season in which the latest fruit or seed of the fruit/seed period is visually obvious.

- Spring
- Summer
- Fall

- Winter
- Year-round

**Fruit/Seed Persistence:** Are the fruit or seed generally recognized as being persistent on the plant?

- Yes, No

**Propagated By Bare Root:** Is it practical to propagate this plant as a bare root product?

- Yes, No

**Propagated By Bulbs:** Is it practical to propagate this plant as bulbs?

- Yes, No

**Propagated By Container:** Does the plant lend itself to being developed as a container product?

- Yes, No

**Propagated By Corms:** Is it practical to propagate this plant as corms?

- Yes, No

**Propagated By Cuttings:** Is it practical to propagate this plant as either stem or root cuttings?

- Yes, No

**Propagated By Seed:** Is it practical to propagate this plant by seed?

- Yes, No

**Propagated By Sod:** Does the plant lend itself to being developed as a sod product?

- Yes, No

**Propagated By Sprigs:** Is it practical to propagate this plant by sprigs?

- Yes, No

**Propagated By Tubers:** Is it practical to propagate this plant by tubers?

- Yes, No

**Seed Per Pound:** How many seeds per pound are in an average seed lot?

**Seed Spread Rate:** What is the capability of the plant to spread through its seed production compared to other species with the same growth habit?

- None, Slow, Moderate, Rapid

**Seedling Vigor:** What is the expected seedling survival percentage of the plant compared to other species with the same growth habit?

- Low, Medium, High

**Small Grain:** Is this plant a small grain?

- Yes, No

**Vegetative Spread Rate:** At what rate can this plant can spread compared to other species with the same growth habit?

- None, Slow, Moderate, Rapid

## **Suitability/Use**

**Berry/Nut/Seed Product:** Is the woody perennial suitable for the commercial production of either berries, nuts, or seeds? Herbaceous plants are scored "No" here by default.

- Yes, No

**Christmas Tree Product:** Is the plant known to be suitable for the Christmas tree market?

- Yes, No

**Fodder Product:** Is the plant known to be used as animal fodder material? The definition of fodder from the Crop Science Society of America is: Coarse grasses such as corn or sorghum harvested with the seed and leaves green or alive, then cured and fed in their entirety as forage.

- Yes, No

**Fuelwood Product:** What is the relative suitability or potential of this tree or shrub to produce fuelwood? If suitability is unknown, we have expressed fuelwood potential in terms of weight (in lbs) per cubic foot of green wood. Our relative values correspond to these numerical ranges: Low: <28; Medium: 28-35; High: >35. Plants other than trees and shrubs are left blank here.

- Low, Medium, High

**Lumber Product:** Is the plant suitable, or does it have potential, for use as a commercial lumber producer?

- Yes, No

**Naval Store Product:** Is the woody perennial suitable for production of naval store products? Naval Store Products are defined as tar, pitch, turpentine, pine oil, rosin, and terpenes obtained from pine and other coniferous trees. Herbaceous plants are scored "No" here by default.

- Yes, No

**Nursery Stock Product:** Is the plant suitable for production of nursery stock?

- Yes, No

**Palatable Browse Animal:** What is the relative palatability of this plant to browsing animals?

- Low, Moderate, High

**Palatable Grazing Animals:** What is the relative palatability of this plant to grazing animals?

- Low, Moderate, High

**Palatable Human:** Does the plant produce berries, nuts, seeds, or fruits that are palatable to humans?

- Yes, No

**Post Product:** Is the tree or shrub commonly used or does it have high potential for the production of posts, poles, mine timbers, or railroad ties? Plants other than trees and shrubs are scored "No" here by default.

- Yes, No

**Protein Potential:** What is the relative protein content of the plant parts that are grazed or browsed by animals?

- Low, Moderate, High

**Pulpwood Product:** Is the woody perennial commonly used or does it have high potential to be used for the production of pulpwood? Herbaceous plants are scored "No" here by default.

- Yes, No

**Veneer Product:** Is the tree commonly used or does it have high potential to be used for commercial veneer or plywood? Plants other than trees are scored “No” here by default.

- Yes, No