

# Caragana



- Growth Form: irregular or hedgelike
- Crown Density: dense
- Size: 8-12 feet high
- 5-8 foot spread
- Drought Resistance: excellent
- Cold Hardiness: excellent
- Growth Rate: rapid
- Life Span: moderate
- Elevational Range: to 9,500 feet
- Soil Conditions: good salt and alkaline tolerance
- Possible Insect Problems: aphids and grasshoppers
- Possible Disease Problems: very resistant
- Wildlife Value: good: songbirds
- Seasonal Color: yellow spring flowers
- Miscellany: does well in poor soils

# Caragana or Siberian Peashrub



# Caragana or Siberian Peashrub (*Caragana arborescens*)

## General Description

Drought tolerant legume, long-lived, alkaline-tolerant, tall shrub native to Siberia. Ability to withstand extreme cold and dryness. Major windbreak species.

### Leaves and Buds

Bud Arrangement - Alternate.

Bud Color - Light brown, chaffy in nature.

Bud Size - 1/8 inch, weakly imbricate.

Leaf Type and Shape - Pinnately-compound, 8 to 12 leaflets per leaf.

Leaf Margins - Entire.

Leaf Surface - Pubescent in early spring, later glabrescent.

Leaf Length - 1½ to 3 inches; leaflets 1/2 to 1 inch.

Leaf Width - 1 to 2 inches; leaflets 1/3 to 2/3 inch.

Leaf Color - Light-green, become dark green in summer; yellow fall color.

### Flowers and Fruits

Flower Type - Small, pea-like.

Flower Color - Showy yellow in spring.

Fruit Type - Pod, with multiple seeds. Pods open with a popping sound when ripe.

Fruit Color - Brown when mature.

### Form

Growth Habit - Erect, oval shrub with sparse branches.

Texture - Medium-fine, summer; medium-coarse, winter.

Crown Height - 6 to 14 feet.

Crown Width - 6 to 12 feet.

Bark Color - Olive-green in color, angled from the nodes, with pale, horizontal lenticels.

Root System - Dense, spreading.

## Environmental Requirements

### Soils

Soil Texture - Adapted to a wide range of soils.

Soil pH - 5.0 to 8.0.

Windbreak Suitability Group - 1, 1K, 3, 4, 4C, 5, 6D, 6G, 8, 9C, 9L.

### Cold Hardiness

USDA Zone 2.

### Water

Drought tolerant. Does not perform well on very wet or very dry sandy soils.

### Light

Full sun.

## Uses

### Conservation/Windbreaks

Medium to tall shrub for farmstead and field windbreaks and highway beautification.

### Wildlife

Used for nesting by several species of songbirds. Food source for hummingbirds.

### Agroforestry Products

No known products.

### Urban/Recreational

Screening and border, ornamental flowers in spring.

## Cultivated Varieties

Dwarf Siberian Peashrub (*Caragana arborescens* 'Nana')

Sutherland Peashrub (*C. arborescens* 'Sutherland') - Narrowly-upright in form.

Walker Peashrub (*C. arborescens* 'Walker') - Extremely fine-textured.

Weeping Siberian Peashrub (*C. arborescens* 'Pendula')

## Related Species

Pygmy Peashrub (*Caragana pygmaea*)

Russian Peashrub (*C. frutex*)

## Pests

Common diseases include stem decay, Septoria leaf spot and branch cankers. Common insect pests include blister beetles in mid to late summer.

## Permaculture Plants: Pea Trees and Pea Shrubs



### Common Name: Pea Trees and Pea Shrubs

**Scientific Name:** *Caragana* species

**Family:** Fabaceae (the Legume or Pea or Bean family)

**Common Species** (there are about 80 species):

- **Siberian Pea Tree/Shrub** (*Caragana arborescens*) – large to very large shrub
- **Caragana boisii** (*Caragana boisii*) – large to very large shrub
- **Caragana brevispina** (*Caragana brevispina*) – medium-sized shrub
- **Caragana decorticans** (*Caragana decorticans*) – large to very large shrub
- **Russian Pea Shrub** (*Caragana frutex*) – medium-sized shrub
- **Pygmy Pea Shrub** (*Caragana pygmaea*) – small shrub



Siberian Pea Tree/Shrub (*Caragana arborescens*)

**Description:**

Known as Pea Shrubs or Trees (if they get large enough), the *Caragana* species are in the Legume Family, and they really do produce edible pods and peas. The Pea Shrubs are on my list of Permaculture super-plants! They are edible, fix-nitrogen, attract beneficial insects, can be used as a pioneer plant, a windbreak, and a hedge, are used to stabilize erosion-prone soil, can feed livestock, and are pretty with fragrant flowers. What more could you ask for in one plant?



Figure 111. 1-7 *Caragana pectunculii* (Pallas, 中国植物志, 卷 9, 页 20, 图 20) — 1 Flowering branch — 2 Branch — 3 Leaf — 4 Seed — 5 Anther — 6 Pod — 7 Legume 8-14 *C. orthoceras* (Lamour., 中国植物志, 卷 10, 页 27) — 8 Flowering branch — 9 Branch — 10 Leaf — 11 Seed — 12 Anther — 13 Pod — 14 Legume 15-18 *C. korosensis* (Komarov, 中国植物志, 卷 9, 页 20, 图 20) — 15 Flowering branch — 16 Branch — 17 Leaf — 18 Seed — 19 Anther — 20 Pod — 21 *C. korosensis* (Komarov, 中国植物志, 卷 9, 页 20, 图 20) — 21 Flowering branch (P. H. Raven, 1977, 1980, 1989-1991) Bot. Jahrb. 97, 43, pl. 11 (1947) — 中国植物志 (Shanghai).

**Caragana species**

**History:**

Native and widespread through Asia and eastern Europe, this plant has been used by native peoples for its edible pods and seeds, fiber from the bark, and dye from its leaves. It has been spread around the world first for its pods and seeds by settlers and in more modern times for its ornamental properties. It is also very recently begun to be used as a windbreak, erosion control, and degraded land reclamation plant.

**Trivia:**

- Pea Shrubs are considered invasive species in many locations in the United States... this just tells me there is a void which this plant is filling.

- Pea Shrubs can withstand -40 F (-40 C) temperatures – perfect for very cold locations!



There are many uses for the Pea Shrubs – seen here is Siberian Pea Tree/Shrub (*Caragana arborescens*) being used as a windbreak/hedge.

## USING THIS PLANT

### Primary Uses:

- Ornamental Plant – this has been one of its primary uses around the world due to its small fragrant flowers and attractive leaves
- *Edible Pods* – Young pods are eaten raw or cooked in Summer.
- *Edible Seeds* – Historically, Pea Shrubs were used for food much more than they are now. The pods form 3-4 “peas” each, and these peas can be eaten raw or cooked when young. The seeds may also be dried and then used like dried peas – soaked overnight and then cooked before eating. Some people still enjoy eating from this plant, but others find the taste bland and the small, low-seeding pods bothersome to open and not worth the trouble. The tree does produce a lot of pods though, so it may have potential as a future food source. I have yet to try pods or peas from this plant... I'll let you know when I do
- *Edible Flowers* – reportedly can be used as a salad garnish

### Secondary Uses:

- Nitrogen Fixer – this plant creates its own nitrogen through a symbiotic relationship with microorganisms (bacteria) in its roots. It typically produces an excess of nitrogen that can be used by neighboring plants. This is a leguminous plant; Clover, Cowpea, Lupine, Soybean inoculation groups.
- General insect (especially bees) nectar plant
- Pioneer Plant – helps reestablish overused or damaged land
- Windbreak Plant – fast growing, but not very tall
- Hedge Plant – the thorns on this plant will likely make it a worthwhile food-producing, living fence for livestock
- Wildlife Food – many animals will eat the seeds and hummingbirds enjoy the nectar

- Wildlife Shelter – mainly birds
- Lacewings prefer to lay eggs on Caranga species
- Parasitic Wasps prefer to rest and hide on Caranga species
- Erosion Control Species – the extensive root system helps stabilize soils prone to erosion
- Fodder Crop – chickens particularly enjoy this plant's pods and seed, but there is also research supporting its use as fodder for sheep, goats, cattle, deer, reindeer, and camels!
- Fiber Plant – a fiber from the bark can be used to make cordage
- Dye Plant – a blue dye can be made from the leaves

**Yield:** No reliable information can be found, but these plant yield high quantities of pods each year.

**Harvesting:** Summer – pods can be harvested when very small (just over an inch). Autumn – if the pods are older but still green, they the peas can be eaten raw or cooked. If the pods have turned brown, pick them before they split and harvest the dried peas.

**Storage:** Use pods and young peas within a few days. The dried peas will keep for years if kept in a dry location.



The pioneering Caragana species will help rebuild poor soils.  
Russian Pea Shrub (*Caragana frutex*).

- **Siberian Pea Tree/Shrub** (*Caragana arborescens*): Zone 2-7
- **Caragana boisii** (*Caragana boisii*): Zone 2
- **Caragana brevispina** (*Caragana brevispina*): Zone 6
- **Caragana decorticans** (*Caragana decorticans*): Zone 6
- **Russian Pea Shrub** (*Caragana frutex*): Zone 2-7
- **Pygmy Pea Shrub** (*Caragana pygmaea*): Zone 2-7
- **Siberian Pea Tree/Shrub** (*Caragana arborescens*): Zone 8-1

**Chill Requirement:** No reliable information is available, but it is likely considering its origination location.

**Plant Type:** Medium to Very Large Shrub

**Leaf Type:** Deciduous

**Forest Garden Use:** Canopy Layer

**Cultivars/Varieties:** There are a number of varieties of *Caragana arborescens* available, but these were all developed for flowers, not for other beneficial characteristics. Other than that, almost no development has been undertaken.

**Pollination:** Self-fertile. Bee pollinated.

**Flowering:** Spring

**Years to Begin Fruiting:** 3-5 years

**Life Span:** Up to 50+ years



There are a variety of sizes in the Caragana genus.  
Here is the medium-sized Russian Pea Shrub (*Caragana frutex*).



And the small Pygmy Pea Shrub (*Caragana pygmaea*)

## PHYSICAL CHARACTERISTICS OF THIS PLANT

### Size:

- **Siberian Pea Tree/Shrub** (*Caragana arborescens*): 8-20 feet (2.4-6 meters) tall and 12-18 feet (3.5-5.5 meters) wide
- **Caragana boisii** (*Caragana boisii*): 8-20 feet (2.4-6 meters) tall and 13 feet (4 meters) wide
- **Caragana brevispina** (*Caragana brevispina*): 8 (2.4 meters) tall
- **Caragana decorticans** (*Caragana decorticans*): 18 feet (5.5 meters) tall
- **Russian Pea Shrub** (*Caragana frutex*): 6-10 feet (1.8-3 meters) tall and wide
- **Pygmy Pea Shrub** (*Caragana pygmaea*): 4 feet (1.2 meters) tall and wide

**Roots:** Fairly deep, but very extensive root system (used for erosion control)

**Growth Rate:** Medium to Fast



Fragrant flowers are just the icing on the cake of this multi-use "wonder-shrub"

## GROWING CONDITIONS FOR THIS PLANT

**Light:** Prefers full sun

**Shade:** Does not tolerate shade

**Moisture:** Dry to medium-moisture soils. Can tolerate fairly dry conditions once established.

**pH:** 5.1-8.5 (tolerates a wide range of soil conditions)

**Special Considerations for Growing:** None.

### Propagation:

Typically from seed. Soak for 24 hrs first. If the seed has not swollen, then scarify and soak again for 12 hrs.

Typically germinates in 2-3 weeks. Not dormant. Can be propagated from cuttings and layering as well.

**Maintenance:** Minimal once established.

### Concerns:

- Most species have thorns which can be annoying to problematic depending on where they are planted and how they are used.
- In some areas, the *Caragana* species are considered invasive; however, this appears to be more of a case in disturbed areas... which is why this is considered a great pioneer species. If the land was not mismanaged in the first place, and repeatedly disturbed, then there would be no place for pioneer species like this, and there would be no "invasive" label to this plant.

## SIBERIAN PEASHRUB

*Caragana arborescens* Lam.

Plant Symbol = CAAR18

Contributed By: USDA NRCS National Plant Data Center



Conservation Trees & Shrubs for Montana  
USDA, NRCS, Montana State Office

### Alternative Names

Ross caragana, Siberian pea tree, pea-tree

### Uses

**Medicinal:** The plant is used for cancer of the breast, the orifice to the womb, and other gynecological problems (Kiangsu 1977).

**Wildlife:** During World War II, the Siberian peasants reportedly carried their chicken flocks through the winter by feeding them *Caragana arborescens* seeds (Snell 1983). The seeds serve as valuable food for wild life. It also provides cover for upland game.

**Agroforestry:** *Caragana arborescens* has been recommended as a nitrogen-fixing windbreaker and groundcover plant that binds the soil and produce fiber and dye. It is often used as a single row field shelterbelt for borders, screen plantings, or flowering hedges.

**Other uses:** Some ethnic groups have used young pods for vegetables. The bark provides a fiber and the leaves yield an azure dye. The wood is used for woodturning.

### Status

Introduced into the U.S. Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status, such as, state noxious status and wetland indicator values.

### Description

**General:** Pea Family (Fabaceae). Siberian peashrub is an introduced, deciduous shrub or small tree ranging between ten to fifteen feet tall. The leaves are alternate, three to five inches long, with each leaf composed of eight to twelve oval leaflets. The flowers are yellow and appear early in the season forming pods in late June or early July. As the pods ripen, they crack and burst, spreading the seeds. The young bark is smooth and olive green and becomes less vivid in color as the bark ages.

**Distribution:** Siberian peashrub is native to Siberia and Manchuria. In the United States, its growth is stunted south of Nebraska. For current distribution, please consult the Plant profile page for this species on the PLANTS Web site.

### Adaptation

Siberian peashrub succeeds in most well drained soils. It prefers full sun but can tolerate some shade. This species is very tolerant of infertile soils, cold winter temperatures, and drought conditions. It tolerates alkaline soils and deicing salt. This plant's chief value is its ability to adapt to poor sites. It also requires little maintenance.

### Establishment

**Propagation by Seed:** Seed is best sown as soon as it is ripe in a cold frame. Stored seeds should be pre-soaked twenty-four hours in warm water and then sown in a cold frame. If the seeds do not swell, then stratify them and re-soak for another twelve hours before sowing. Germination should occur in two to three weeks at 20°C. Certain pesticides can increase germination possibly by inhibiting disease.

**Propagation by cuttings:** Layering should be done in the spring. Cuttings should consist of half ripe wood, three to four inches with a heel, and should be done between July and August. Grafting the cultivars,

especially 'Pendula', 'Lorbergii', and 'Walker', are top worked at four to six inches height on Caragana arborescens seedlings (Dirr & Heuser 1987). *Root cuttings, layering or grafting can also propagate Caragana arborescens.*

### Management

*General:* Siberian peashrub is susceptible to leaf spot diseases, red spider mites, blister beetles, grasshoppers, and aphids, which leads to poor foliage quality in mid to late summer.

### Cultivars, Improved and Selected Materials (and area of origin)

'Sutherland', 'Lorbergii', 'Pendula', 'Walker', and 'Nana' are cultivars of Siberian peashrub. 'Sutherland' has a narrow, upright form. 'Lorbergii' has a graceful form with fine textured leaves. 'Pendula' has a stiffly weeping form with arching branches. 'Walker' is much like 'Lorbergii' in leaf character but strongly weeping (Dirr 1990). 'Nana' has a dwarf form with somewhat contorted branches.

Consult your local nurseries to choose the right cultivar for your specific landscape. Contact your local Natural Resources Conservation Service (formerly Soil Conservation Service) office for more information. Look in the phone book under "United States Government." The Natural Resources Conservation Service will be listed under the subheading "Department of Agriculture."

### References

Agriculture Handbook. 450. 1974. *Seeds of woody plants in the U.S.* Forest Service, USDA. Washington DC.

Bruggen, T.V. 1976. *The vascular plants of South Dakota.* The Iowa State University Press, Ames, Iowa.

Bush-Brown, J. 1963. *Shrubs and trees for the home landscape.* Chilton Company, Philadelphia, Pennsylvania.

Great Plains Flora Association. 1986. *Flora of the Great Plains.* University Press of Kansas, Lawrence, Kansas.

Dirr, M.A. 1990. *Manual of woody landscape plants: their identification, ornamental characteristics, culture, propagation, and uses.* 4<sup>th</sup> ed. Stipes Publishing Company, Champaign, Illinois.

Dirr, M.A. & C.W. Heuser, Jr. 1987. *The reference manual of woody plant propagation: from seed to tissue culture.* Varsity Press, Athens, Georgia.

Kiangsu-Institute of Modern Medicine. 1977. *Encyclopedia of Chinese drugs.* 2 vols. Shanghai, China.

Preston, R.J. Jr. 1948. *North American trees.* 2<sup>nd</sup> ed. The Iowa State College Press, Ames, Iowa.

Rosendahl, C.O. 1955. *Trees and shrubs of the upper Midwest.* University of Minnesota Press, Minneapolis, Minnesota.

Rehder, A. 1940. *Manual of cultivated trees and shrubs: hardy in North America.* 2<sup>nd</sup> ed. The Macmillan Company, New York, New York.

Snell, T. 1983. Caragana: *The pea shrubs.* In: The International Permaculture Seed Yearbook. Orange, Massachusetts.

Taylor, N. 1965. *The guide to garden shrubs and trees.* Houghton Mifflin Company, Boston Massachusetts.

USDA, NRCS 2000. *Conservation trees and shrubs for Montana.* Custer County Soil Conservation District. Accessed: 11jan02. <<http://www.mt.nrcs.usda.gov/pas/forestry/caragana.html>>

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# How to Grow a Caragana Hedge

by Jaimie Zinski, Demand Media

*Caragana arborescens* (Siberian peashrub) is a cold-hardy shrub that originates from portions of Siberia and Manchuria. Hardy in U.S. Department of Agriculture zones 2 through 10, the deciduous Siberian peashrub features bright green leaves and showy yellow, pea-shaped blossoms that appear in late spring and attract several varieties of animals and songbirds to your backyard. This impenetrable shrub is often planted as a windbreak or for privacy, and it requires little maintenance through the years.

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- 1 Locate a spot in your yard that features well-draining soil and exposure to full sunlight. Siberian peashrub can tolerate partial shade and infertile soil if necessary. Create a chalk or spray paint outline for the parameters of your hedge before planting.
- 2 Dig a hole deep and wide enough to accommodate the root ball. Lower a Siberian peashrub into the hole, ensuring the crown sits 1 to 2 inches below the surrounding soil's surface. Backfill with the original soil, and tamp with the shovel to remove any air pockets.
- 3 Plant additional Siberian peashrubs at a rate of two plants every 5 feet. The closer you plant the shrubs, the more tangled they become as they grow, creating a strong windbreak.
- 4 Water newly planted Siberian peashrubs thoroughly. Monitor the shrubs over the first year after planting, and continue watering enough to keep the soil evenly moist but not soggy. After establishment, Siberian peashrub hedges require little maintenance.

## Things You Will Need

- Chalk or spray paint
- Shovel
- Garden hose

## Tip

Prune Siberian peashrubs to maintain their shape. Cutting back longer, older branches also refreshes the shrubs.

Siberian peashrubs require no fertilizer, because the plant amends nitrogen levels in the soil naturally.