

Amur chokecherry

Prunus maackii Rupr.

Synonyms: None.

Other common name: Manchurian cherry

Family: Rosaceae

Invasiveness Rank: 45 The invasiveness rank is calculated based on a species' ecological impacts, biological attributes, distribution, and response to control measures. The ranks are scaled from 0 to 100, with 0 representing a plant that poses no threat to native ecosystems and 100 representing a plant that poses a major threat to native ecosystems.

Description

Amur chokecherry is a deciduous tree native to Korea and northeastern China, growing 4 – 10 m tall. However, tree specimens in cultivation have measured up to 17 m tall with a trunk diameter of 90 cm. The bark on the younger trees is very distinct glossy bronze yellow but becomes full dark grey-brown with age (GBIF 2018). Young branches are pubescent, and at the base of the leafstalk, the small leaf-like appendages (stipules) are linear. Amur chokecherry leaves are alternate, oval to egg-shaped, 4–8 cm long and 2.8–5 cm broad, with a pubescent 1–1.5 cm stalk attaching the leaf to the stem, and an entire or very finely serrated leaf edge. Leaves are dark green above, slightly paler and pubescent on the veins below. The flowers are produced on erect spikes 5–7 cm long, each flower 8–10 mm in diameter, with five white petals. Flowers are produced in late May/early June after the leaf-out. The fruit is a small cherry-like drupe 5–7 mm diameter, green at first, turning first red then dark purple or black at maturity in early autumn (Mitchell, A. F. 1974).

In Michigan, 17 species of cherry species (*Prunus*) were evaluated for anti-fungal properties, only Amur chokecherry was able to significantly inhibit the growth of *Armillaria ostoyae*, which is the most detrimental cherry root rot pathogen in Michigan (Kaniszewski 2015). Anti-fungal agents exist in the outer cork-like bark or periderm of Amur chokecherry.

Similar species: European bird-cherry (*Prunus padus*), and common chokecherry (*Prunus virginiana*) are both in the same genus, but only the Amur chokecherry has the distinctive copper-colored bark.

Distribution and Abundance

Native and current distribution: Amur chokecherry is Native to the Amur River area of northeastern China and Korea (GBIF 2018). Canada does not show Amur chokecherry as being present, however, Sweden, Finland, Poland and Estonia have documented occurrences (GBIF 2018). It has been introduced to North America in a few areas – including Philadelphia, PA (Perez Kibler 2012), near St. Louis, Missouri (GBIF 2018), and Alaska UAA – is an EEO/AA employer and educational institution.

(AKEPIC 2018). In Alaska, amur chokecherry has been documented from the Southern ecogeographic region but has not been recorded elsewhere in the state (AKEPIC 2018, GBIF 2018).



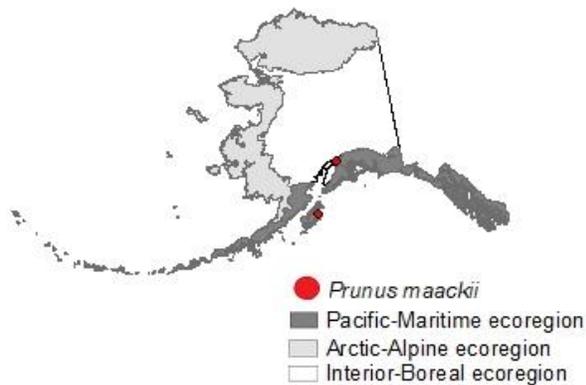
© 2011 AKNHP



© 2011 AKNHP

Amur chokecherry (*Prunus maackii* Rupr.)

AKEPIC database link and information regarding non-native plant species list is available online: <http://accs.uaa.alaska.edu/invasive-species/non-native-plants>



Distribution of Amur chokecherry (*Prunus maackii* Rupr.) in Alaska.

Legal Listings

- Has not been declared noxious
- Listed noxious in Alaska
- Listed noxious by other states
- Federal noxious weed
- Listed noxious in Canada or other countries

Ecological Impact

Impact on community composition, structure, and interactions: Invasiveness of this species is not well documented. Where it is planted as an ornamental tree it does not appear to profusely self-seed. Warm areas in urban and floodplain settings will likely be the most vulnerable to invasion of non-native plant species to native ecosystems in the Arctic (Carlson et al. 2016). However, Amur chokecherry, while tolerant of severe winter cold, does not tolerate heat. Abundant fruit production in late summer will bring both native and non-native birds to feed on the Amur chokecherry, changing the interaction of bird species with native tree species within forest ecosystems.

Impact on ecosystem processes: Mature Amur chokecherry trees produce numerous flowers and bear fruit each season, possibly increasing the likelihood of impacting native ecosystems by outcompeting native vegetation. Amur chokecherry does not appear to self-seed as profusely as congeneric cherry species European bird-cherry or common chokecherry.

Biology and Invasive Potential

Reproductive potential: Amur chokecherry reproduces by seeds (presumably more than 10 per tree) (Fordham Undated). Amur chokecherry is cold-hardy but it seems to be less frost resistant than *Prunus padus* (Arnold Arboretum 1986). Unlike *Prunus padus*, this tree is non-suckering (Morgenson 1986).

Role of disturbance in establishment: Amur chokecherry prefers partial to full sun. Disturbance could create more open areas, preferable for seed germination.

Potential for long-distance dispersal: Fruits are attractive to many mammals and birds, and seeds can be dispersed after being ingested (Webb and Wilson 1985). Birds are known to feed on the fruit of other *Prunus* species and are a potential vector for long-distance dispersal of Amur chokecherry. It is possible that the short-growing season of Southcentral and Interior Alaska is too short for effective seed stratification, which would reduce seed viability.

Potential to be spread by human activity: Recognized as a hardy ornamental, Amur chokecherry will continue to be spread by intentional landscape plantings in Southcentral and possibly Interior Alaska. In addition, disturbance of soil near existing Amur chokecherry trees could lead to further propagation of the species.

Germination requirement: Amur chokecherry requires moist, well-drained soil for germination. Water permeability of Amur chokecherry seed is low, and germination is dependent on warm stratification then cold stratification and a germination inhibitory substance (Longfei et al. 2011). It is possible that the short-growing season of Southcentral and Interior Alaska is too short for effective seed warm stratification, which would reduce seed viability.

Growth requirements: Moist, well-drained soil provides a favorable growth medium for Amur chokecherry. Clay, loam, sand and slightly alkaline or acidic soils are tolerated (Gilman and Watson 1994). Propagation by seeds, cuttings, grafting or budding is possible with Amur chokecherry (Fordham Undated).

Congeneric weeds: *Prunus virginiana* and *Prunus padus* are both non-native species found in Alaska (AKEPIC 2018).

Management

Management strategies for Amur chokecherry are undocumented as the introduction of the species to North America is relatively recent, likely around the early 1990's (GBIF 2018). However, similar strategies for managing European bird-cherry would likely be effective for Amur chokecherry, including: plant pulling and herbicide application, specifically focused on removal of mature fruit-bearing trees.

References:

- AKEPIC database. Alaska Exotic Plant Information Clearinghouse Database. 2018. Available: <http://accs.uaa.alaska.edu/>
- Carlson, M.L. and E.J. Trammell, M. Aisu and L. Flagstad. 2016. Patterns of vulnerabilities of Arctic Alaska to non-native plant invasion: estimating current and future susceptibility in the face of climate change and development. Presentation made at 2016 Alaska Botany Forum. Available: <http://www.uaf.edu/ces/pests/cnipm/annual-invasive-species-c/17th-annual-meeting-proce/>
- Arnold Arboretum of Harvard University. 1986. Notes and Quotes on the History and Origins of the Amur Chokecherry (*Prunus Maackii*). *Arnoldia* 46 (2): 13–24. www.jstor.org/stable/42954245.
- Fordham, A.J. Undated. Propagation of *Prunus maackii*. Arnold Arboretum, Harvard. <http://arnoldia.arboretum.harvard.edu/pdf/articles/1986-46-2-propagating-prunus-maackii.pdf> Accessed 28 March 2016.
- Gilman, E.F. and D.G. Watson. 1994. *Prunus maackii* Amur Chokecherry. Fact Sheet ST-510. US Forest Service. http://hort.ufl.edu/database/documents/pdf/tree_fact_sheets/prumaaa.pdf Accessed 28 Nov. 2016.
- GBIF (Global Biodiversity Information Facility). 2018. *Prunus maackii* Rupr. Available: <https://www.gbif.org/species/3021586>
- Longfei, H., W. Qingcheng, Z. Ynadong, P. Hongmei and L. Guojiang. 2011. Dormancy Mechanism and Germination Conditions of *Prunus maackii* seeds. School of Forestry, Northeast Forestry University, Harbin.
- Mitchell, A. F. 1974. *Field Guide to the Trees of Britain and Northern Europe*. Collins ISBN 0-00-212035-6
- Morgenson, G. 1986. Seed Stratification Treatments for Two Hardy Cherry Species. *Tree Planter's Notes* 37 (3): 3538.
- Kaniszewski, L.J. 2015. Novel phytoanticipins from *Prunus maackii*: Possible factors in disease resistance (Order No. 3740251). Available from ProQuest Dissertations & Theses Global. (1752638540). Retrieved from <http://search.proquest.com/proxy.consortiumlibrary.org/docview/1752638540?accountid=14473>
- Perez Kibler, N.M. 2012. Management of the Urban Forest: A Zip Code Level Approach. University of Pennsylvania. 81 pp. http://repository.upenn.edu/mes_capstones/53
- Webb, S., and M. Wilson. 1985. Spatial heterogeneity in post-dispersal predation on *Prunus* and *Uvularia* species. *Oecologia* 67 (1): 150-153 p.

Last Updated: 2018-11-02 by Natalie Konig

<http://accs.uaa.alaska.edu>