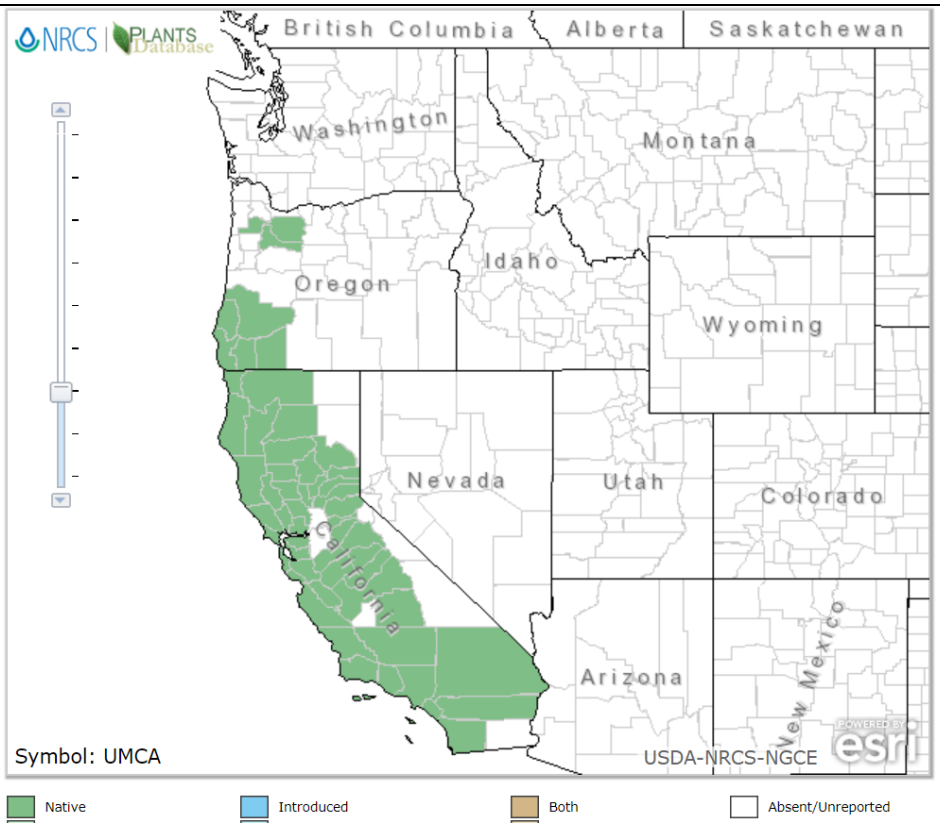
Plant Propagation Protocol for *Umbellularia californica*

ESRM 412 – Native Plant Production

Protocol URL: https://courses.washington.edu/esrm412/protocols/*UMCA.pdf*

TAXONOMY	
Plant Family	
Scientific Name	Lauraceae
Common Name	Laurel family
Species Scientific Name	
Scientific Name	*Umbellularia californica* (Hook. & Arn.) Nutt. Note: This is the only species in the genus *Umbellularia*.
Varieties	*Umbellularia californica* (Hook. & Arn.) Nutt. var. *californica* *Umbellularia californica* (Hook. & Arn.) Nutt. var. *fresnensis* Eastw.
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	N/A
Common Name(s)	Balm of heaven, bay, bay Laurel, cajeput, California bay, California bay laurel, California laurel, California olive, cinnamon bush, laurel, mountain laurel, myrtle, Oregon myrtle, Oregon myrtlewood, peppernut tree, pepperwood, sassafras laurel, spicebush, spice tree (Immel & Anderson, n.d.)(Robson, Richter & Filbert, 2008)
Species Code (as per USDA Plants database)	UMCA
GENERAL INFORMATION	
Geographical range	West of the Cascades in California & Oregon Not found in Washington

	 (USDA NCRS NGCE, n.d.)
Ecological distribution	*U. californica* occurs west of the Cascades, in a wide range of environments. (Robson et al., 2008, p. 496)
Climate and elevation range	*U. californica* grows between 0 and 4,000 feet above sea level, except in southernmost California where it prefers 2,000-5,000 feet above sea level. Adapted to annual rainfall between 13 and 83 inches, and temperatures between, at the most extreme, -13 and 118 F. (Niemiec et al., 1995, p. 45). Shade-tolerant. Low drought tolerance. Requires at least 140 days per year without frost. (USDA NRCS, n.d.)
Local habitat and abundance	*U. californica* occurs in many environments, but does well in shaded, somewhat moist areas with deeps soils. Many species coexist with it, including but not limited to the Pacific madrone, Sitka spruce, redwood, salmonberry, and snowberry (Niemiec, Ahrens, Willits, & Hibbs, 1995, p. 44).
Plant strategy type / successional stage	*U. californica* "can be a climax species" because it has a long lifespan, tolerates a wide range of conditions, and can return after fires (Niemiec et al., 1995, p. 44).
Plant characteristics	Shrub or tree. Lives over 250 years. Can be coppiced. Has a medium ability to return after a fire. (USDA NRCS, n.d.)
PROPAGATION DETAILS	
Ecotype	Presidio, California – applies only to information from (Young, 2001).
Propagation Goal	Plants
Propagation	Seed

Method	
Product Type	Container (plug)
Stock Type	Treeband 14 (Young, 2001)
Time to Grow	Maximum 2-3 years
Target Specifications	Seedlings grow slowly after transplanting (Niemiec et al., 1995, p. 46) so *U. californica* should be outplanted after branches develop, at about 2-3 years old or sooner if the terminal bud is removed (Burns & Honkala, 1990, p. 830)
Propagule Collection Instructions	Collect seeds between October and December (Immel & Anderson, n.d.). Seeds that have been on the ground for a while before collection may have lower viability (Niemiec et al., 1995, p. 46).
Propagule Processing/Propagule Characteristics	300 seeds per pound of fruit is typical (Niemiec et al., 1995, p. 46). Mature fruits and seeds are identifiable by their color: dark purple and dark brown, respectively (Immel & Anderson, n.d.).
Pre-Planting Propagule Treatments	Seed has decent spring germination if planted immediately after harvest in fall (Young & Young, p. 96)(Robson et al., 2008, p. 496) or it can be stored for up to 6 months in cool, moist conditions (Niemiec et al., 1995, p. 46). Stratifying seeds for 3-4 months at refrigerator temperatures may increase germination rates (Young, 2001)(Emery, 1988, p. 102), as may scarification (Burns & Honkala, 1990, p. 828)(Immel & Anderson, n.d.), but neither is necessary for germination.
Growing Area Preparation / Annual Practices for Perennial Crops	*U. californica* can establish itself in any texture of soil, but requires a depth of at least 16 inches (USDA NCRS, n.d.) so standard potting soil is fine but the pots should be fairly large and at least 14 inches deep (Young, 2001)
Establishment Phase Details	For best results, keep pots in humid conditions with moist but not wet growth medium (Niemiec et al., 1995, p. 46).
Length of Establishment Phase	Seeds should germinate within 3 months (Niemiec et al., 1995, p. 46).
Active Growth Phase	N/A
Length of Active Growth Phase	N/A
Hardening Phase	N/A
Length of Hardening Phase	N/A
Harvesting, Storage and Shipping	N/A
Length of Storage	N/A
Guidelines for Outplanting / Performance on	Seedlings grow slowly for several years after planting, but after age 5 *U. californica* can grow up to 2 feet per year in optimal conditions. Flowering may occur after a year, and fruiting will be “abundant” at age

Typical Sites	30-40 (Niemiec et al., 1995, p. 44-46). Compared to other trees and shrubs, survival is medium (USDA NCRS, n.d.). Seedling growth may be improved somewhat by controlling any competing species encroaching on the seedlings (Niemiec et al., 1995, p. 46).
Other Comments	Some sources indicate that vegetative propagation is possible for *U. californica* (Toogood, 1993)(Thompson & Owen, 2005)(Sheat, 1948), but not enough detail was available to create a protocol.

INFORMATION SOURCES

References

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