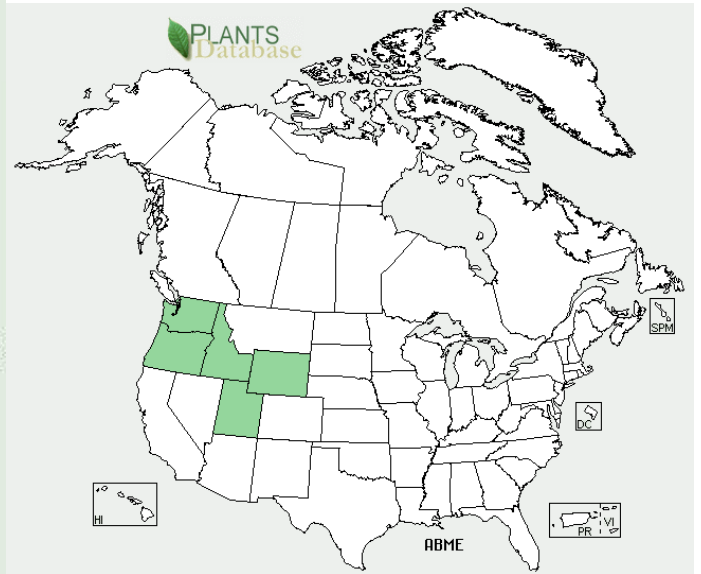
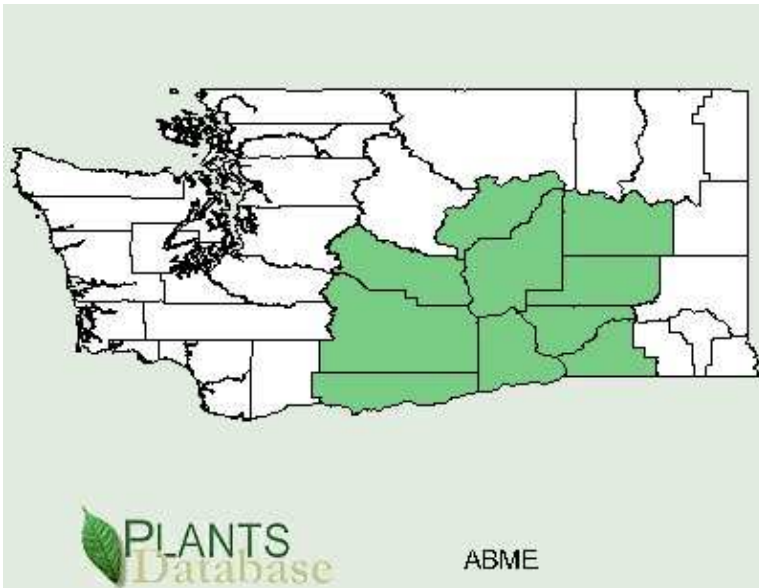


Plant Propagation Protocol for *Abronia mellifera*
 ESRM 412 – Native Plant Production



TAXONOMY	
Family Names	
Family Scientific Name:	Nyctaginaceae
Family Common Name:	Four o'clock family
Scientific Names	
Genus:	<i>Abronia</i> Juss.
Species:	<i>Abronia mellifera</i> Douglas ex Hook.
Species Authority:	Hook.
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s)	
Common Name(s):	White sand verbena
Species Code :	ABME
GENERAL INFORMATION	
Geographical range:	Occurs in Washington, Idaho, Utah, Oregon, and Wyoming ⁶ See maps above. ¹
Ecological distribution :	Shrub-Steppe ecosystems ⁷ , cold desert scrubs, and grasslands ⁶
Climate and elevation range	Elevation ranges from 200-5000 ft. above sea level ^{6,7}
Local habitat and abundance; may include commonly associated	All sources suggest <i>Aborina Mellifera</i> is best adapted to open, sunny areas in “light” soil ² . Reports indicate that

species	<p>this species naturally occurs in “loamy, sandy, firm banks”⁵. It also grows best in slightly acidic soil, within a pH range of 5.6-6.5³.</p> <p>Several other sources re-iterate sandy, well-drained soils are key.⁷</p>
Plant strategy type / successional stage	Colonizer ⁸
Plant characteristics (life form (shrub, grass, forb), longevity, key characteristics, etc)	<p>Herb</p> <p>They are low height flowering plants, ranging from 6 to 18 inches high and spread widely.²</p> <p>No information available on the longevity of these plants.</p>
PROPAGATION DETAILS	
Ecotype :	No information available
Propagation Goal :	Plants
Propagation Method :	Seed
Product Type:	Container (plug)
Stock Type:	No information available
Time to Grow :	No information available
Target Specifications :	<p>One source says that <i>Aborina Mellifera</i> can grow as high as three feet.⁴</p> <p>Others suggest between 6—18 inches is more likely with 3 to 6 inch flower cluster heads on top.^{7,2}</p> <p>Leaves are between 2 and 4 inches long.</p> <p>Flowers clustered in head atop 3–6 in.⁷</p>
Propagule Collection :	First allow the seedheads to dry on the plants, then remove the heads and collect the seeds ³
Propagule Processing/Propagule Characteristics:	<p>Make sure to peel of the husk (calyx) before sowing²</p> <p>No information on longevity available</p>
Pre-Planting Propagule Treatments :	Sow onto open ground after frost, or in late summer or early fall in mild climates. ^{2,3}
Growing Area Preparation / Annual Practices for Perennial Crops :	For early and continuous summer bloom, seeds may be sown in pots of sandy earth the previous autumn and wintered in a frame ²
Establishment Phase :	These plants do not tolerate frost, so grow them indoors or in a cool green house during winter and early spring. They can then be moved outside for late spring and summer. Ensure that they receive at least a few hours of sunlight a day.

	Watering takes place only when the soil has been dry for days, usually every 2-3 weeks can be enough; if the climate is particularly hot slightly more water may be necessary. The plants will grow quickly, and some individuals may develop wider stems and require more water during the long summer months. ⁸
Length of Establishment Phase:	No information available
Active Growth Phase :	At the end of winter and the start of fall, adding some slow-release fertilizer or manure will help the plants develop rapidly. And one source recommends fertilizing every 25-30 days in the spring. Try to use fertilizer specific for green or flowering plants. One source suggests that these plants have a climber development, and will grow best near a gate or wall. ⁸
Length of Active Growth Phase:	No information available
Hardening Phase :	No information available
Length of Hardening Phase:	No information available
Harvesting, Storage and Shipping :	No information available
Length of Storage :	No information available
Guidelines for Outplanting / Performance on Typical Sites :	No information available
Other Comments:	<i>Abronia mellifera</i> is distinguishable from its similar relative <i>Abronia ammophila</i> (Yellowstone Sand Verbena) because <i>mellifera</i> has shorter petioles, coarsely pubescent fruit, and sparsely glandular stems ⁹ .
INFORMATION SOURCES	
References (full citations):	1."Abronia Mellifera Douglas Ex Hook." PLANTS Database. USDA, 2010. Web. 18 May 2010. 2. Bailey, Liberty Hyde. <i>The Standard Cyclopedia of Horticulture</i> . New York: Macmillan, 1919. <i>Google Books</i> . Web. 18 May 2010. 3. "PlantFiles: White Sand Verbena." <i>Dave's Garden Website</i> . Web. 19 May 2010. < http://davesgarden.com/guides/pf/go/74080/ >. 4."Abronia Mellifera." <i>Lady Bird Johnson Wildflower Center</i> . The University of Texas at Austin, 2010. Web. 19 May 2010. < http://www.wildflower.org/plants/result.php?id_plant=ABME >. 5. Hooker, William J., David Prian, and Otto Stapf. "Aborina Fragrans." <i>Curtis's Botanical Magazine Vol. 91</i> 1865. <i>Google Books</i> . Web. 17 May 2010.

	<p>6. "Abronia Mellifera Dougl. Ex Hook." Encyclopedia of Life. Web. 19 May 2010. <http://labs1.eol.org/pages/481950?category_id=9>.</p> <p>7. "Abronia Mellifera." <i>Wildflowers of the Pacific Northwest</i>. Turner Photographics, 2010. Web. 19 May 2010. <http://www.pnwflowers.com/flower/abronia-mellifera>.</p> <p>8. "White Sand Verbena, Abronia Mellifera Dougl. Ex Hook." <i>Gardening.eu</i>. Web. 19 May 2010. <http://www.gardening.eu/arc/plants/Climber-plants/Abronia-mellifera-Dougl.-ex-Hook/75/stamp_a.asp>.</p>
Other Sources Consulted :	<p>9. "Abronia Mellifera Comprehensive Species Report." NatureServe. 2009. Web. 19 May 2010. <http://www.natureserve.org/explorer/servlet/NatureServe?searchName=Abronia+mellifera>.</p> <p>10. "White Sand Verbena (Abronia Mellifera)." Sagebud - A Directory Of Plants. 2010. Web. 19 May 2010. <http://www.sagebud.com/white-sand-verbena-abronia-mellifera/>.</p>
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Date Protocol Created or Updated :	5/19/2010

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