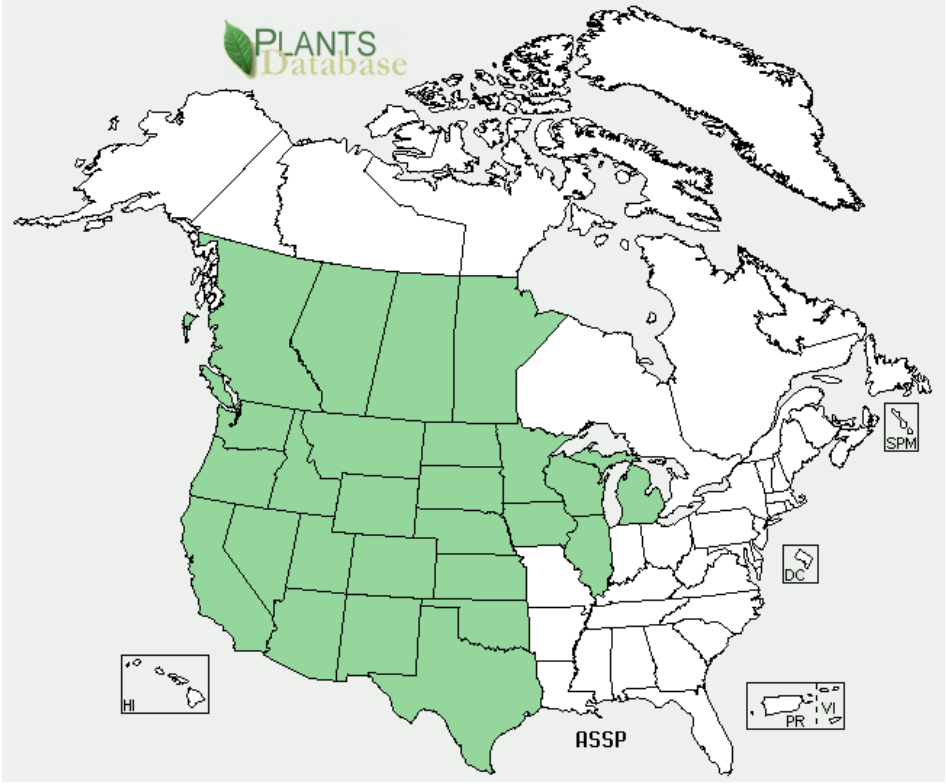
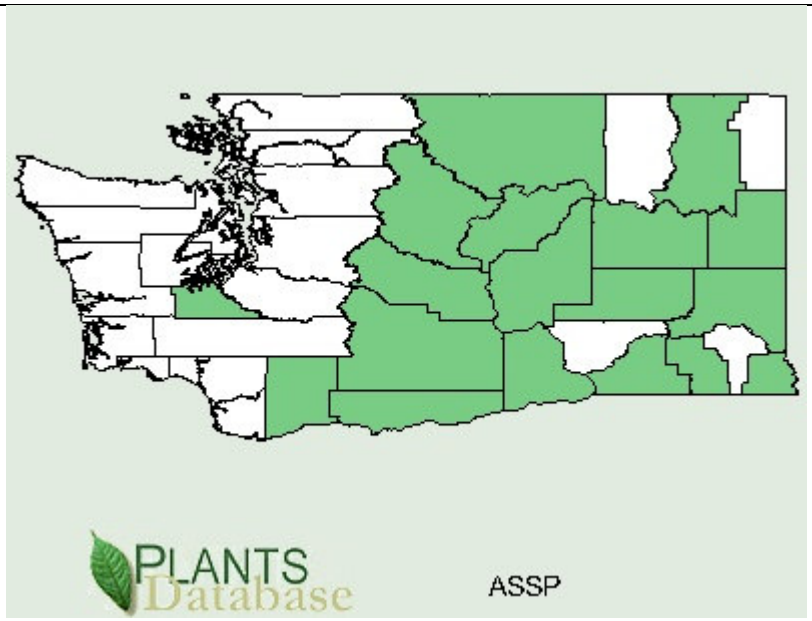
Plant Propagation Protocol for *Asclepias speciosa*
ESRM 412 – Native Plant Production
Spring 2008

A monarch butterfly on showy milkweed. 3.

TAXONOMY	
Family Names	
Family Scientific Name:	Asclepiadaceae
Family Common Name:	Milkweed
Scientific Names	
Genus:	*Asclepias*
Species:	*speciosa*
Species Authority:	Torr.
Variety:	
Sub-species:	

Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s):	*Asclepias giffordii* Eastw. 8.
Common Name(s):	Showy Milkweed 1. Greek milkweed 7.
Species Code (as per USDA Plants database):	ASSP
GENERAL INFORMATION	
Geographical range:	 Distribution of Showy milkweed across the U.S. 2.

	 Distribution of showy milkweed across Washington State. 2.
Ecological distribution:	Native to mesic places in western North America from British Columbia to Manitoba and south to Texas. In the Palouse of eastern Washington and northern Idaho it is not common and most frequently found along roadcuts and in road ditches. 1.
Climate and elevation range	Ranges from 0 to 1900 m. 6.
Local habitat and abundance; may include commonly associated species	Showy milkweed is commonly associated with the following species: Ponderosa shrub forest, Western ponderosa forest, California oakwoods, Coastal sagebrush, Grama-buffalo grass, Sandsage-bluestem prairie 7.
Plant strategy type :	Little research has been done addressing the successional status of showy milkweed; however, it is considered a "weedy" species that occurs in early and mid-succession. It has the ability to quickly colonize disturbed sites in open grasslands and partially shaded habitats. 7.
Plant characteristics:	Showy milkweeds have a stout stem and grow up 3 to 6 feet tall. The stem and undersides of the leaves may be coveredwith dense white hairs. Leaves are opposite and oval in shape, 1-6" across and 2-8" long.Flowers are borne in rounded clusters that hang from short, stout stalks. The flowers are over 1" wide and have 5 rose-purple petals and5 pinkish cream, needlelike, pouch-shaped hoods. The seed pods are 3-5" long and are either spiny or smooth. The pods ripen in the summer and the flat seeds have long silky hairs attached to one end. 5.
PROPAGATION DETAILS	
Ecotype :	Paradise Creek drainage near Pullman, Washington. 1.

Propagation Goal:	Plants 1.
Propagation Method	Seed. 1.
Product Type:	Container (plug) 1.
Stock Type:	10 cu. In. 1.
Time to Grow:	4 Months. 1.
Target Specifications:	Tight root plug in container. 1.
Propagule Collection:	Fruit is a follicle and seed is reddish brown in color when mature. Seed is collected by hand when the follicles begin to split in September or October. Seed is attached to a long white coma which aids on wind dispersal. It must be harvested before becoming wind borne. Collected material is stored in paper bags or envelopes at room temperature until cleaned. 1. It is noted again that you should collect seeds after pods have ripened, but before they have split open. 6.  Seeds of Showy milkweed. 7.
Propagule Processing/Propagule Characteristics:	Seeds with the attached coma can be collected by hand removal from the follicle in the field or the follicles can be collected and later opened by hand to extract the seed. The coma can be removed by hand or by rubbing over a 14/64 hand screen. If necessary, seed can be cleaned using a air column separator. 1. 72,000 seeds/lb 1.2.
Pre-Planting	Buhler & Hoffman (1999) state fresh seeds planted in autumn germinate the

Propagule Treatments:	following spring and summer. We found seed of this ecotype to germinate readily without pretreatment. Unpublished data from trials conducted at the Pullman Plant Materials Center comparing untreated seed with seed treated by cold moist stratification for periods of 45, 90, or 120 days showed no increase in total emergence following stratification. Untreated seed emerged at 85%. Stratified seed emerged at the same time as untreated seed, suggesting that germination does not begin until temperatures warm. 1. Also noted that there is no stratification needed from the USDA plant database. 2.
Growing Area Preparation / Annual Practices for Perennial Crops:	In January seed is sown in the greenhouse in 10 cu. in. Ray Leach Super cell conetainers filled with Sunshine #4 and covered lightly. Head space of ¼ to ½ inch is maintained in conetainers to allow deep watering. A thin layer of coarse grit is applied to the top of the planting soil to prevent seeds from floating during watering. Conetainers are watered deeply. 1.
Establishment Phase:	Medium is kept moist until germination occurs. Germination usually begins in 6 days and is complete in 14 days. 1.
Length of Establishment Phase:	2 weeks. 1.
Active Growth Phase:	Plants are watered deeply every other day and fertilized once per week with a complete, water soluble fertilizer containing micro-nutrients. 1. Spring and Summer 2.
Length of Active Growth Phase:	10-12 weeks. 1.
Hardening Phase:	Plants are moved to the cold frame in late March or early April, depending on weather conditions. They are watered every other day if the weather is cool, and every day during hot, dry spells. 1.
Length of Hardening Phase:	2-4 weeks. 1.
Harvesting, Storage and Shipping:	Plants can be stored in the lath house over winter. They must be afforded some protection from extreme cold temperatures. Containerized material of *A. speciosa* is much more sensitive to winter damage than many of the other native forbs of the Palouse. Mulch or foam sheets provide sufficient protection. The protection should be removed in spring as temperatures begin to rise. 1.
Length of Storage:	
Guidelines for Outplanting :	Transplanting is done in early May by using an electric drill and portable generator to drill 1.5 inch diameter holes at the planting site. Survival in seed increase plantings without competing vegetation averages 85%. Transplanting into sites with existing vegetation may reduce survival and vigor depending on weather conditions following planting. 1.
Other Comments:	Established plants of *A. speciosa* are among the last local native forbs to resume growth in the spring, apparently requiring warm temperatures to break winter dormancy. Plants are strongly rhizomatous and can be propagated by division. This

	method should only be used for plants growing in cultivation. Plants should not be dug up from stands in the wild. Viable seed production in wild plants is highly variable between different years.Flowers are insect pollinated (Bookman 1983a). Bumblebees are the most common pollinator (Finer 2004). 97% of ovaries fail to develop into mature pods (Bookman 1983b). High levels of geitonogamy result in high levels of fruit abortion (Finer & Morgan 2003, Finer 2003).Larva of the monarch butterfly (*Danaus plexippus*) are obligate *Asclepias* feeders (Pyle 2002). Adults of the western milkweed long-horned beetle (*Tetraopes femoratus*) feed on the leaves, buds, and flowers of *A. speciosa*. The larva feed on the roots. 1.
INFORMATION SOURCES	
References :	1. Skinner, David M. 2008. Propagation protocol for production of container *Asclepias speciosa* Torr. plants (10 cu. in.); USDA NRCS - Pullman Plant Materials Center, Pullman, Washington. In: Native Plant Network. URL: http://www.nativeplantnetwork.org (accessed 26 May 2008). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery. 2. USDA plant database. www.Plants.usda.gov 3. The Pond Doctor. www.peak.org/~jnelson/order_form.htm 4. Native Plant Network. Nativeplantnetwork.org 5. Desert USA. http://www.desertusa.com/mag99/nov/papr/milk.html 6. USDA Plant Guide. *USDA NRCS National Plant Data Center* http://plants.usda.gov/plantguide/pdf/cs_assp.pdf 7. USDA Forest Service http://www.fs.fed.us/database/feis/plants/forb/ascspe/all.html 8. The Burke Museum http://biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Asclepias
Other Sources Consulted:	
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