Plant Propagation Protocol for *Beckmannia syzagachne* (Steud.) Fernald
ESRM 412 – Native Plant Production

TAXONOMY	
Family Names	
Family Scientific Name:	Poaceae
Family Common Name:	Grass
Scientific Names	
Genus:	Beckmannia
Species:	Syzagachne
Species Authority:	(Steud.) Fernald
Variety:	N/A
Sub-species:	N/A
Cultivar:	N/A
Authority for Variety/Sub-species:	N/A
Common Synonyms	*Beckmannia syzigachne* (Steud.) Fernald ssp. *baicalensis* (Kusnez.) Koyama & Kawano; *Beckmannia syzigachne* (Steud.) Fernald var. *uniflora*
Common Name:	American Sloughgrass, Beckmann's grass
Species Code:	BESY
GENERAL INFORMATION	
Geographical range	This plant is distributed among the more temperate climates of the US, mostly in the north central and northwest states (map below). In Washington, it is not found on the western side of the Casacades.(Knoke, 2012)(USADA, 2012)
Ecological distribution :	Wet meadows, riparian zones, vernal pools, wetlands
Climate and elevation range	Cool climates at low elevations.
Local habitat and abundance;	American Sloughgrass grows well in vernal pools and riparian zones like sloughs and plains with cool climates and moisture. (USDA, 2012)
Plant strategy type/successi	Ruderal, early succession species, (USDA, 2012)

onal stage:	
Plant chars.	Annual grass, some varieties may demonstrate perennial traits in Alaska (Var. *Egan*)
PROPAGATION DETAILS	
Ecotype:	Near Tensed, Idaho
Propagation Goal:	Plants
Propagation Method:	Seed
Product Type :	Container(Plug)
Stock Type:	10 cu. in.
Time to Grow:	4 Months
Target Specifications:	Tight root plug in container
Propagule Collection (how, when, etc):	When: mid-July to August is when the seed ripens and inflorescences begin to dry. How: Collect seed before it hardens and shatters, store in paper bags at room temp. until cleaned.
Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):	1) Rub small amounts together to free seeds 1a) For larger amounts, thresh with hammermill 2) Separate with an air column separator 2a) Then use air screen equip. to clean 3) Spikelets disarticulate below glumes, which should be left attached to seed. 4) Store at 40° F, and 40% humidity
Pre-Planting Propagule Treatments:	Pre-chill: 5-7 days .2% KNO3 followed by alternating temperatures of 15-25°C. The effects of pre-chilling vary depending on where the seed was sampled from. Recommended for seeds from northern latitudes. For seeds from southern areas, and post pre-chill, subject to alternating day/night temperatures produce highest germination rates. (Skinner & Wedell, 2006)
Growing Area Preparation / Annual Practices for Perennial Crops:	In January plant seeds in 10 cu. In. Ray Leach Super cell conetainers filled with Sunshine #1. Provide deep watering and pea gravel to prevent floating seeds. Place trays in greenhouse in light at 62-75° F for 8 hours, then move to 50° F for 16 hours. After 2 weeks of alternating in this manner leave at constant temperature. (Skinner & Wedell, 2006)
Establishment:	Keep soil moist. Germintation generally begins in 10 days and finishes in 15.
Length of Establishment Phase:	2 weeks

Active Growth:	Water deeply every other day and fertilize once a week with complete, water soluble fertilizer with full micronutrients.
Length of Active Growth Phase:	2-3 months
Hardening Phase:	Move trays to cold frame in late March or by early April, depending on weather conditions. If cool, water every other day. If warm, water daily.
Length of Hardening Phase:	2-4 weeks
Harvesting, Storage and Shipping (of seedlings):	Seedlings should be kept in conetainers until ready for ouplanting and regularly watered.
Length of Storage:	Less than 2 weeks, this species is most commonly an annual, storage past May risks not being able to outplant.
Guidelines for Outplanting / Performance on Typical Sites:	Aim to complete transplanting by mid-May. Survival can be as high as 95%. Abundant seeds will be produced same season. Flowering estimated about 6 months from planting. Grows to approximately 4 ft. Performs well in wet soil, will catch disease in dry soils from stress. (Schlicter, 2009)
Other Comments (including collection restrictions or guidelines, if available):	Slough grass is an important wetland species, serving as food for a variety of birds and mammals. The plant is also hardy and studies indicate it may be able to compete with Reed Canary grass if abundant enough, making it worth consideration in restoration projects.(USDA, 2012)
INFORMATION SOURCES	
References (full citations):	Skinner, David M.; Weddell, Bertie J. 2006. propagation protocol for production of container *Beckmannia syzigachne* (Steud.) Fern. ' ' plants (10 cu. in.); Pullman Plant Materials Center, Pullman, Washington. In: Native Plant Network. URL: http://www.nativeplantnetwork.org (accessed 22 March 2006). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery. Flessner, Theresa. "Propogation and establishment of a Native Wetland Plant Species." . USDA-NRCS, n.d. Web. 18 Apr 2012. M.R. Penskar and S.R. Crispin. 2010. Special Plant Abstract for *Beckmannia syzigachne* (slough grass). Michigan Natural Features Inventory. Lansing, MI. 3 pp. Darris, D., A. Bartow, and R. Wynia. 2004. Plant fact sheet for American sloughgrass (*Beckmannia syzigachne)*. USDA-Natural Resources Conservation Service, Plant Materials Center, Corvallis, OR. Knoke, Don. "Beckmannia syzagachne." *Burke Museum of Natural History and Culture*. Burke Museum, 2012. Web. 16 Apr 2012.

	<http://biology.burke.washington.edu/herbarium/imagecollection.php?Page=nomatch.php?Genus=Beckmannia&Species=syzigachne>. . "PLANTS Profile: Beckmannia syzagachne."*Plants.USDA.gov*. USDA, 2012. Web. 16 Apr 2012. <http://plants.usda.gov/java/nameSearch?keywordquery=Beckmannia syzigachne&mode=sciname>. Hunt, Peggy, and Stoney Wright. "'Egan" American Sloughgrass." *plants.alaska.gov*. Alaska Plant Materials center, 01/09/08. Web. 18 Apr 2012. <http://plants.alaska.gov/publications/pdf/plant-flyers/EganBeckmannia.pdf>. Wynia, Richard L.. "American Soughgrass Beckmannia syzigachne." *USDA NRCS*. USDA-NRCS, n.d. Web. 16 Apr 2012. <http://plants.usda.gov/plantguide/pdf/pg_besy.pdf>.
Other Sources Consulted (but that contained no pertinent information) (full citations):	Slichter, Paul. "American Sloughgrass. Sloughgrass."*Michigan NaFlora and fauna Northwesttural Features Inventory*. Paul Slichter, July 2009. Web. 16 Apr 2012. <http://science.halleyhosting.com/Slichter, Paul. "American Sloughgrass. Sloughgrass."*Michigan NaFlora and fauna Northwesttural Features Inventory*. Paul Slichter, July 2009. Web. 16 Apr 2012. <http://science.halleyhosting.com/>.>. USDA, ARS, National Genetic Resources Program. *Germplasm Resources Information Network - (GRIN)* [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?6620 (18 April 2012) "Vegetation Establishment Tables." *Minnesota Board of Water and Soil Resources*. MBWSR, 12/08. Web. 16 Apr 2012. <http://www.bwsr.state.mn.us/publications/wetland_restoration/Appendix-5F.pdf>. Iverson, Louis. "Illinois Plant Information Network ILPIN Information on Beckmannia syzigachne." *US Forest Service*. ILPIN, n.d. Web. 18 Apr 2012. <http://www.fs.fed.us/ne/delaware/ilpin/363.co>.
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Date Protocol Created or Updated:	04/18/2012

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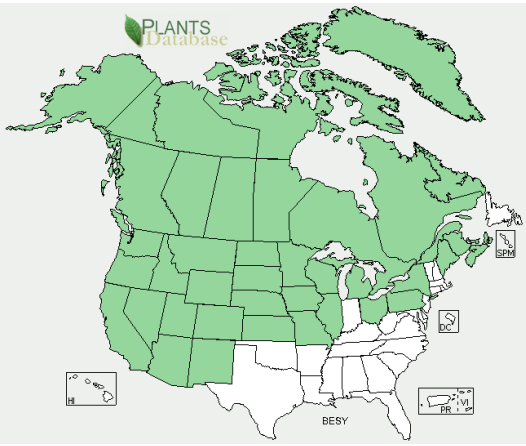

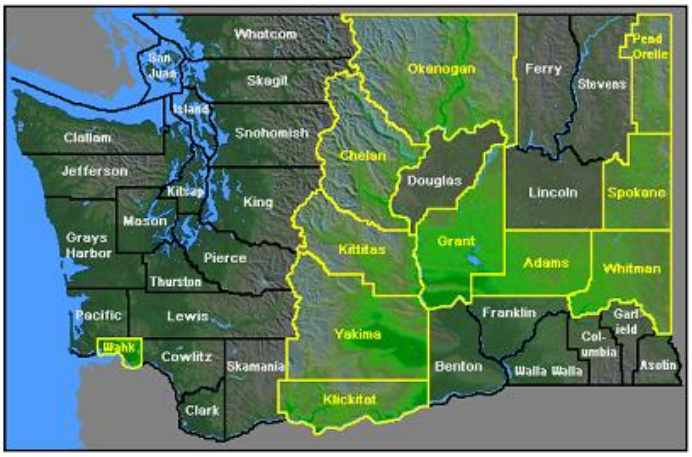

(Skinner & Wedell, 2006) (Schlicter, 2009) (USDA, 2012)