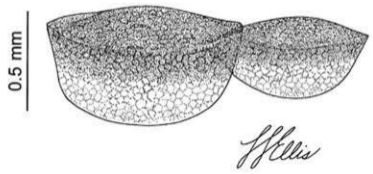
Wolffia borealis



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TAXONOMY	
Family Names	
Family Scientific Name:	Lemnaceae
Family Common Name:	Duckweed family
Scientific Names	
Genus:	Wolffia
Species:	Borealis
Species Authority:	(Engelm. ex Hegelm.) Landolt ex Landolt & Wildi
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s)	
Genus:	Wolffia
Species:	Punctata auct.
Authority:	Non. Griseb (misapplied)
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Name:	dotted watermeal, northern watermeal
Species Code (as per USDA Plants database):	WOBO
GENERAL INFORMATION	
General Distribution (geographical range (states it occurs in), ecosystems, etc):	OR, CA, WA, ID, Midwestern and northeastern US; Southern Canada, Central, South America[1]

Climate and elevation range	350-1500 feet[2]
Local habitat and abundance; may include commonly associated species	Freshwater standing, slow moving waters [3]
Plant strategy type / successional stage:	Opportunistic, R strategy[4]
PROPAGATION DETAILS	
Ecotype (this is meant primarily for experimentally derived protocols, and is a description of where the seed that was tested came from):	
Propagation Goal:	
Propagation Method:	Vegetative. New Plants created via budding process and break off of the mother plant.[4]
Product Type:	
Stock Type:	
Time to Grow:	
Target Specifications:	
Propagule Collection:	
Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):	
Pre-Planting Propagule Treatments:	Sterilized following method of enrichment and sodium hypochlorite treatment per Bowker et. al (1980) method. [5]
Growing Area Preparation / Annual Practices for Perennial Crops:	Floating plant, petri dish in 24 C, photoperiod of 12 hours.[6]
Establishment Phase:	
Length of	

Establishment Phase:	
Active Growth Phase:	Lifespan of mother fronds mean of 15.8 days. Producing daughter fronds at .62 fronds per day. Daughter fronds may be released before maturity.[7]
Length of Active Growth Phase:	Best survey time July through fall [8]
Hardening Phase:	
Length of Hardening Phase:	
Harvesting, Storage and Shipping:	
Length of Storage:	
Guidelines for Outplanting / Performance on Typical Sites:	
Other Comments:	

INFORMATION SOURCES

References:	1. Oregon Flora Project. Dept. of Botany and Plant Pathology. Oregon State University. Rare Plant Guide. http://www.oregonflora.org/rarepdfs/wolbor.pdf 2. Ibid 3. University of North Carolina Herbarium. http://www.herbarium.unc.edu/ 4. http://el.erdc.usace.army.mil/index.cfm U.S. Army Corps of Engineers, Environmental Laboratory, wolffia spp. 5. "Potential and Realized Rates of Vegetative Reproduction in Spirodela polyrhiza, Lemna minor and Wolffia borealis" Lemon, Gordon D., Posluszny, Usher and Husband, Brian C. Aquatic Botany, May 2001, Pages 79-87. 6. Ibid 7. Ibid 8. Oregon Flora Project. Dept. of Botany and Plant Pathology. Oregon State University. Rare Plant Guide. http://www.oregonflora.org/rarepdfs/wolbor.pdf
Other Sources	University of Wisconsin Botanical Information System; Wisconsin State

Consulted:	Herbarium, artist rendering. http://www.botany.wisc.edu/wisflora/scripts/detail.asp?SpCode=WOLBOR Kuban State Agriculture University, Department of Cytology; http://www-saps.plantsci.cam.ac.uk/ "Anatomy and Ultrastructure of Wolffia Columbiana and Wolffia borealis, Two Nonvascular Aquatic Angiosperms" by White, Sandra L. and Wise, Robert R. International Journal of Plant Sciences, Vol. 159, No. 2 (March 1998), pp. 297-304. Bowker, D.W. Duffield, A.N. and Denny, P., 1980 "Methods for the isolation, sterilization and cultivation of Lemnaceae" Freshwater Biology, 10.
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Date Entered or Updated (MM/DD/YY):	05/09/07