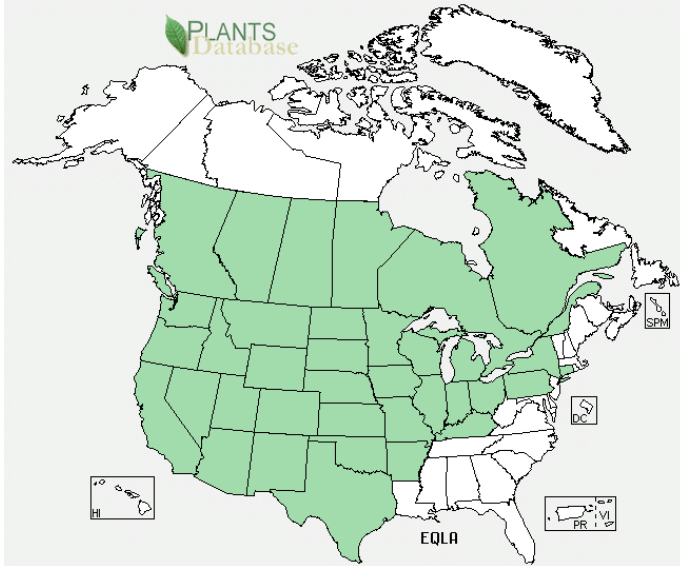


Plant Propagation Protocol for *Equisetum laevigatum*
 ESRM 412 – Native Plant Production



Source: USDA PLANTS Database

North America Distribution



Washington Distribution



Source: USDA PLANTS Database

TAXONOMY

Family Names	
Family Scientific Name:	Equisetaceae
Family Common Name:	Horsetail
Scientific Names	

Genus:	<i>Equisetum</i>
Species:	<i>laevigatum</i>
Species Authority:	A Braun
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonyms:	<i>Equisetum funstonii</i> A.A. Eaton <i>Equisetum kansanum</i> Schaffn. <i>Equisetum laevigatum</i> A. Braun ssp. <i>funstonii</i> (A.A. Eaton) Hartm. <i>Hippochaete laevitgata</i> (A. Braun) Farw.
Common Names:	Smooth scouring rush, smooth horsetail
Species Code:	EQLA
GENERAL INFORMATION	
Geographical range:	North America. See maps above for distribution in North America and Washington State.
Ecological distribution:	Usually found in areas of medium to high moisture, in sandy or gravelly substrates. Moist prairies, riverbanks, roadsides (Rook).
Climate and elevation range	<3000 m (Jepson). Hardy to USDA Zone 3; average minimum annual temperature -40°F (Rook).
Local habitat and abundance; may include commonly associated species	Mostly found in wetlands, occasionally in non-wetlands (Rook).
Plant strategy type / successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)	Not found
Plant characteristics:	Forb. Forms colonies by rhizome growth. Distinguishable from other horsetails by its smooth stems and pointed cones; other horsetails have rough stems and un-pointed cones (Rook). Erect growth form, growing to 5 feet tall. Moderate lifespan. Drought intolerant (Sagebud). Perennial by rhizome in most areas, especially southwest United States (Jepson).
PROPAGATION DETAILS	
Propagation Goal:	Plants
Propagation Method:	Vegetative, by rhizome division; plants reproduce naturally by spores, but propagation by rhizomes is

Product Type:	Container/plug
Stock Type:	Not found
Time to Grow (from seeding until plants are ready to be outplanted):	Not found
Target Specifications:	Not found
Propagule Collection:	NA
Propagule Processing/Propagule Characteristics:	NA
Pre-Planting Propagule Treatments:	NA
Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc):	Requires minimum of 10 inches soil depth for root growth. Requires constant moisture; drought intolerant (Sagebud).
Establishment Phase:	Not found/NA
Length of Establishment Phase:	Not found
Active Growth Phase:	Spring
Length of Active Growth Phase:	Not found
Hardening Phase:	Not found
Length of Hardening Phase:	Not found
Harvesting, Storage and Shipping:	Not found
Length of Storage :	Not found
Guidelines for Outplanting / Performance on Typical Sites:	Not found
Other Comments:	Considered endangered in some parts of New York State (PLANTS).

INFORMATION SOURCES

References:	<p>PLANTS Profile: <i>Equisetum laevigatum</i> A. Braun. United States Department of Agriculture Natural Resources Conservation Service. http://plants.usda.gov/java/profile?symbol=EQLA.</p> <p>Jepson Manual. 1993. <i>Equisetum laevigatum</i>. University of California, Berkeley, CA. http://ucjeps.berkeley.edu/cgi-bin/get_JM_treatment.pl?46,47,50.</p> <p>Rook EJS (2004) “<i>Equisetum laevigatum</i>: Smooth Scouring Rush.” http://www.rook.org/earl/bwca/nature/ferns/equisetumlae.html.</p> <p>Hartman EL (1958) The Taxonomy and Ecology of the <i>Equisetum laevigatum</i> Complex. <i>Transactions of the Kansas Academy of Science</i> 61:2 125-148.</p> <p>Sagebud: A Directory of Plants: “Smooth Horsetail</p>
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	(<i>Equisetum laevigatum</i>)” (2011). http://www.sagebud.com/smooth-horsetail-equisetum-laevigatum/ .
Other Sources Consulted:	<p>Encyclopedia of Life: <i>Equisetum laevigatum</i> A. Braun (2010). http://www.eol.org/pages/596761.</p> <p>Walker ER (1921) The Gametophytes of <i>Equisetum laevigatum</i>. <i>Botanical Gazette</i> 71:5 378-91.</p> <p>Schaffner JH (1912) An Undescribed <i>Equisetum</i> from Kansas. <i>The Ohio Naturalist</i> 13:1 19-22.</p> <p>Hauke RL (1958) Is <i>Equisetum laevigatum</i> a Hybrid? <i>American Fern Journal</i> 48:2 68-72 http://www.jstor.org/stable/1545091.</p> <p>Hauke RL (1960) The Smooth Scouring Rush and Its Complexities. <i>American Fern Journal</i> 50:2 185-93. Stable URL: http://www.jstor.org/stable/1545670.</p>
Protocol Author:	Zachary McCauley
Date Protocol Created or Updated:	05/18/2011

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