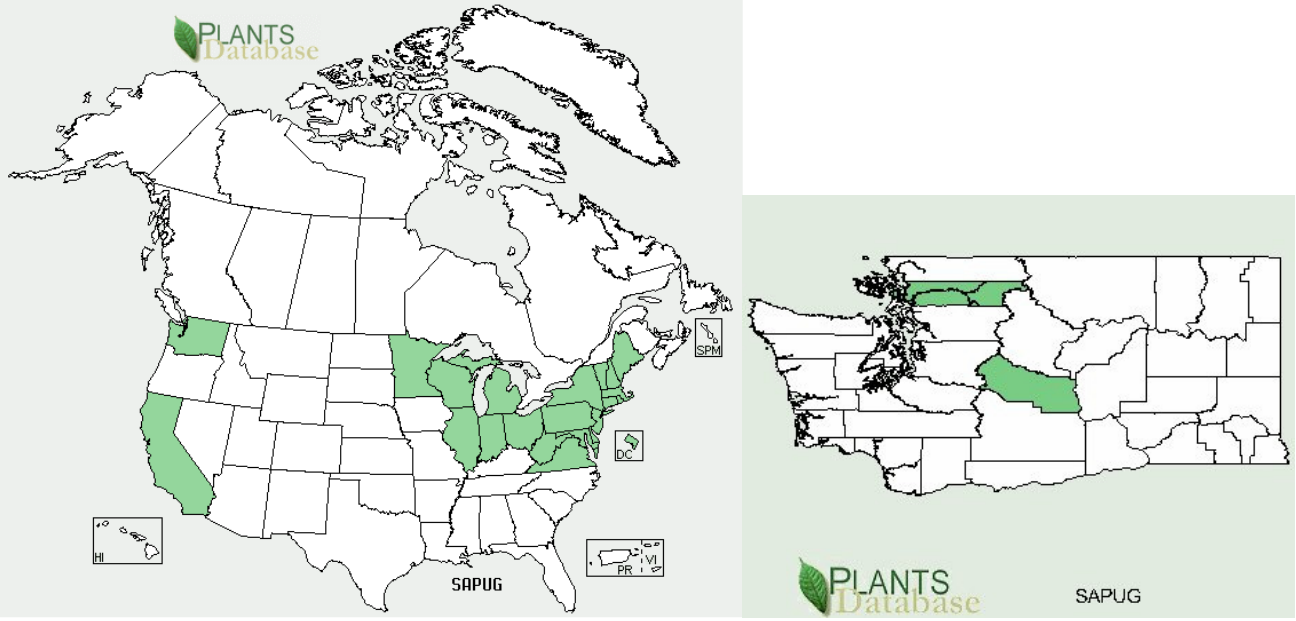
Plant Propagation Protocol for *Sarracenia purpurea L. ssp. gibbosa (Raf.) Wherry*

ESRM 412 – Native Plant Production



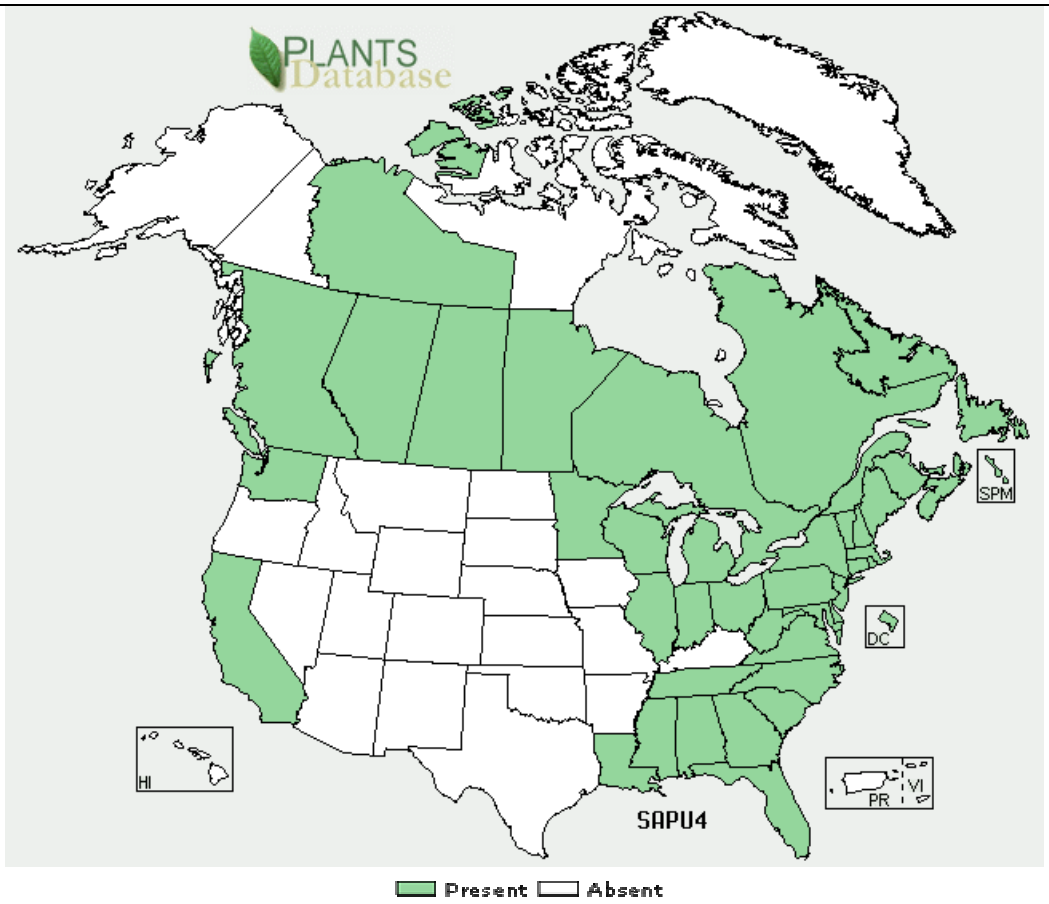
Source: USDA

TAXONOMY	
Family Names	
Family Scientific Name:	*Sarraceniaceae*
Family Common Name:	Pitcher-plant family
Scientific Names	
Genus:	*Sarracenia*
Species:	*Purpurea*
Species Authority:	L.
Variety:	
Sub-species:	*Gibbosa*
Cultivar:	
Authority for Variety/Sub-species:	L., (Raf.) Wherry
Common Synonym(s) (include full scientific names (e.g., *Elymus glaucus* Buckley), including variety or subspecies information)	*Sarracenia heterophylla* Eaton *Sarracenia purpurea* L. ssp. *heterophylla* (Eaton) Torr. *Sarracenia purpurea* L. var. *ripicola* B. Boivin *Sarracenia purpurea* L. var. *stolonifera* Macfarlane & D.W. Steckbeck *Sarracenia purpurea* L. var. *terrae-novae* La Pylaie (USDA)
Common Names:	Purple Pitcherplant, Pitcher Plant, Flytrap, Sidesaddle Plant, Huntsman's Cup, Frog's Britches (Rook)
Species Code:	SAPUG (USDA)

GENERAL INFORMATION	
Geographical range (distribution maps for North America and Washington state)	Canada, USA: CT, DC, DE, IL, IN, MA, MD, ME, MI, MN, NH, NJ, NY, OH, PA, RI, VA, VT, WA, WI, WV (USDA)
Ecological distribution (ecosystems it occurs in, etc):	Sphagnum dominated peatlands, and on sandy and marly shores (Gotsch) Moist to wet meadows and solifluction slopes in the alpine zone (Proulx) Forms dense, floating mats on the water at the edges of bog ponds and lakes and across acid streams (Rook)
Climate and elevation range	
Local habitat and abundance; may include commonly associated species	No information available in sources on local habitat or abundance in Washington state. *Sarracenia purpurea ssp. gibbosa* is listed as Threatened in Florida, Maryland, and Michigan, and Endangered in Georgia and Illinois. It is listed as Exploitably Vulnerable in New York. (USDA) Listed at risk as a species in Fort Nelson, Canada. Global Rank is G5T5; Provincial Rate is S2S3; B.C. Status is Blue. (Proulx)
Plant strategy type / successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)	*Sarracenia purpurea* is a National Wetland Indicator and an Obligate Wetland Indicator in the United States Northeast, Southeast and North Central regions. (USDA)
Plant characteristics (life form (shrub, grass, forb), longevity, key characteristics, etc)	Perennial forb/herb (USDA)

PROPAGATION DETAILS

Note: No information was available for the specific propagation of *Sarracenia purpurea ssp. gibbosa.* Unless otherwise noted, the propagation guidelines below are based on propagation techniques which have proven successful for *Sarracenia purpurea,* and *Sarracenia purpurea* subspecies.



Range for *Sarracenia purpurea* L. (USDA)

Ecotype (this is meant primarily for experimentally derived protocols, and is a description of where the seed that was tested came from):	No Information
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	Plants
Propagation Method (Options: Seed or Vegetative):	Seed – seeds have morphophysiological dormancy (Gotsch) Vegetative – by rhizomes Advanced vegetative techniques : rhizome slicing and leaf pulling (Rice)
Product Type:	Plants: plug and container-field grown plants
Stock Type:	3” x 3” pots (Thomas)
Time to Grow:	Two years from seed (Thomas) Not indicated for rhizome divisions, not indicated for leaf pullings
Target Specifications:	Not indicated
Propagule Collection (how, when, etc):	Seeds collected in September or October (Thomas)

Propagule Collection:	Division of rhizome in winter and early spring before bud break (Thomas)
Propagule Processing/Propagule Characteristics:	Seeds shaken out of dry capsules do not require further cleaning. Seeds are reddish-brown at maturity, and are 1.2 – 2.5mm long. Mature seeds stored in sealed containers immediately after collection remain viable for 3-4 years (Thomas) Older seeds may germinate erratically (Toogood) Number of seeds per lb. not indicated.
Pre-Planting Propagule Treatments: Seed stratification method 1	Cold moist stratification is done by coating seeds with fungicide (suggested brand is Captan 50% WP) to prevent damping-off, then direct sowing onto a moist growing medium of milled sphagnum moss and sand 1:1. Water well and seal in a container and refrigerate at ~4'C for 6 weeks to 2 months. (Thomas)(Gotsch)
Pre-Planting Propagule Treatments: Seed stratification method 2	Cold moist stratification is done by coating seeds with fungicide (suggested brand is Captan 50% WP) to prevent damping-off, then sow onto a damp cloth, place into a container and add a small amount of water. Seal and refrigerate at ~4'C for 6 weeks to 2 months. (Thomas)(Gotsch)
Pre-Planting Propagule Treatments: Divisions	Choose 3 + year old plant for division. Remove mature plant from container and wash growing medium off rhizomes with water. Remove any dead or dying portions of rhizome branch. Remove flowering buds from rhizome branch to encourage root and leaf growth. (Thomas) Cut rhizomes in to 2"- 3" lengths (5 – 7.5 cm) with sharp knife (Toogood) Treat exposed surfaces of rhizome with sulfur. (Thomas)
Pre-Planting Propagule Treatments Leaf Pullings:	Pull downward and out, removing leaf and some of stalk. Do not use knife or scissors to cut. (Toogood)
Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc): Seeds:	Growing medium is 1:1 mixture of milled sphagnum moss and sand. (Thomas) Sow seeds in 3" x 3" square plastic containers (420 ml or 7.5 X 7.5 cm) (Thomas) Seeds require light (bright shade/ambient sunlight) to germinate (Gotsch) (Toogood) Alternatively, surface sow in pots then pot in a larger pot filled with constantly moist moss, water from below. (Toogood) Alternatively cover with clear plastic or glass, water from below, with regular ventilation to prevent mold/fungal growth (Toogood)
Growing Area Preparation / Annual	Preferred growing medium is live sphagnum moss, or a

Practices for Perennial Crops Divisions:	1:1 mixture of milled sphagnum moss and sand. Place small cuttings in 3" x 3" square plastic containers (420 ml or 7.5 X 7.5 cm) (Thomas) (Toogood) Use in 1 gallon containers for larger cuttings (0.5 – 0.75 inches or 1.3cm – 1.9 cm) in diameter. Keep moist at 59' F (15' C) (Toogood)
Growing Area Preparation / Annual Practices for Perennial Crops: Divisions:	Add live sphagnum moss to top layer of growing medium. (Toogood) Place divisions horizontal, with root side down and growing points just above surface of growing medium. Irrigate with B-1 solution 1 – 2 drops/gallon of water. (Thomas)
Establishment Phase:	3 to 4 months. Germination occurs over several weeks (Thomas) 2-3 weeks at 61' F until germination. When large enough to handle pot seedlings singly into containers in sphagnum moss or soil mixture. (Toogood)
Length of Establishment Phase:	1 year for seedlings (Thomas)
Active Growth Phase:	1 year in greenhouse, moved to outdoor greenhouse in summer, moved into cold frame in Autumn of 2nd year (Thomas)
Length of Active Growth Phase:	1.5 years (Thomas)
Hardening Phase:	Autumn of 2nd year (Thomas)
Length of Hardening Phase:	Winter – Spring of 2nd year (Thomas)
Harvesting, Storage and Shipping:	No information
Length of Storage:	No information
Guidelines for Outplanting / Performance on Typical Sites:	Seedlings flower 5-7 years after germination Divisions may flower in 1 -2 years (Thomas) Recreate bog conditions/wetlands with sphagnum moss on Outplanting site (Thomas)
Other Comments:	*"Sarracenia purpurea* is a key indicator species for wetland health." (Gray, pg. 134) Nitrogen deposition and nutrient loading in wetlands is a primary concern for *Sarracenia purpurea ssp.* extinction risk. (Gotelli) (Gray) As humans put increasing pressure on freshwater ecosystems, by diverting water for human use and flooding wetlands with nutrient-rich runoff from agriculture, it is worth considering the preservation of this wetlands species through growing *Sarracenia purpurea ssp. gibbosa* for seed production.
INFORMATION SOURCES	
References:	See below
Other Sources Consulted:	See below
Protocol Author:	Lisa Haglund
Date Protocol Created or Updated:	5/4/10

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