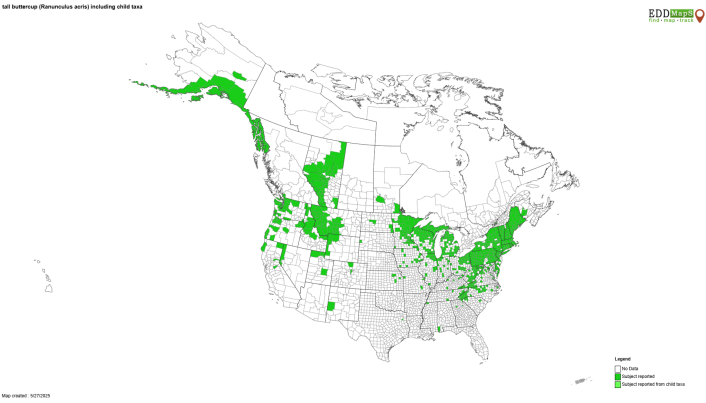


Plant Propagation Protocol for [*Ranunculus acris* L.]

ESRM 412 – Native Plant Production

URL: [https://courses.washington.edu/esrm412/protocols/\[2025\]/\[RAAC3.pdf\]](https://courses.washington.edu/esrm412/protocols/[2025]/[RAAC3.pdf])

TAXONOMY	
Plant Family	
Scientific Name	<i>Ranunculus acris</i> L. ⁷
Common Name	Tall Buttercup ⁷
Species Scientific Name	
Scientific Name	<i>Ranunculus acris</i> L. ⁷
Varieties	var. <i>acris</i> ⁷ var. <i>frigidus</i> Regel ⁷
Sub-species	ssp. <i>friesianus</i> (Jord.) Rouy & Foucaud ⁷
Cultivar	
Common Synonym(s)	<i>Ranunculus acris</i> L. ssp. <i>friesianus</i> (Jord.) Rouy & Foucaud ⁷ <i>Ranunculus acris</i> L. var. <i>acris</i> ⁷ <i>Ranunculus acris</i> L. var. <i>frigidus</i> Regel ⁷
Common Name(s)	Tall buttercup ⁴ Meadow buttercup ⁴
Species Code (as per USDA Plants database)	RAAC3 ⁷
GENERAL INFORMATION	
Geographical range	 <p>Map Source: EDDMapS^{1, 2}</p>
Ecological distribution	Can be found invading wet lowlands, rich woodlands, pastures, meadows, and along roadsides and other disturbed areas. ²

Climate and elevation range	Has been collected from elevations as high as 8,400 ft (2,500 meters). ⁴
Local habitat and abundance	<p>Prefers heavy, moist soils, but can succeed in sandy or gravelly soil if there is enough moisture.²</p> <p>Native range: damp meadows and pastures on calcareous or neutral substrata.⁴</p> <p>Typically found in grazed or mown grassland communities.³</p>
Plant strategy type / successional stage	True perennial, reproducing by rhizomes and seeds. May become weedy or invasive in some regions/habitats. ⁴
Plant characteristics	Perennial forb with rhizomes. Basal leaves grow from the rhizome or root crown. Flower stems are freely branching and erect, standing at 1-3 ft tall. Flowers are regular with radial symmetry and are cymose inflorescences. Flower pedicels are up to 5 inches long and hairy. There are usually 5 petals, but can have up to 8, that are glossy and typically bright yellow (but can be pale yellow or white). Petals are roundish and about 0.5 inches long. ⁴
PROPAGATION DETAILS: FROM SEED	
Ecotype	Wet lowlands, rich woodlands, pastures, meadows, and along roadsides and other disturbed areas. ²
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Field-grown
Stock Type	Plant
Time to Grow	1 year ⁵
Target Specifications	1-3 ft tall ⁴
Propagule Collection Instructions	<p>How: Seeds can be collected from their achenes.⁵</p> <p>When: late summer into autumn⁵</p>
Propagule Processing/Propagule Characteristics	Up to 240 seeds can be produced per plant. Seed survival rate is typically less than two years, as this plant does not have a long-lived seed bank. However, seeds can survive longer than two years if buried deeper than 1 inch. ⁶
Pre-Planting Propagule Treatments	Seeds undergo dormancy when buried. Cold stratification, vernalization, or specific photoperiods are not required to induce flowering. Dormancy is

	broken through exposure with adequate moisture and temperature suitable for growth. ³
Growing Area Preparation / Annual Practices for Perennial Crops	The high water-holding capacity of clay soil aids in establishment. ³
Establishment Phase Details	Germination is more successful in soil than moist filter pads. Establishment is reduced under well-drained or waterlogged conditions. Continuous grazing helps encourage the establishment and spread of the plant. Exposure of buried seeds helps break dormancy and induce germination. ³
Length of Establishment Phase	Many seeds germinate within the first year, but <1% of seedlings survive. ⁴ Seeds typically germinate in late spring. ⁶ There is an autumn and spring flush of emergence. ³
Active Growth Phase	Survival increases under disturbance that removes neighboring vegetation. ⁴ Continuous grazing helps encourage the establishment and spread of the plant. ³
Length of Active Growth Phase	2 months ⁵
Hardening Phase	Cross pollination is needed for seed production. ⁵ Continuous grazing helps encourage the spread of the plant. ³
Length of Hardening Phase	Late summer-autumn ⁵
Harvesting, Storage and Shipping	When storing seedlings, it is important to maintain adequate moisture. Seedling mortality occurs in dry periods. ³
Length of Storage	Reproductive potential doesn't decline with age at least up to 10 years. ⁵
Guidelines for Outplanting / Performance on Typical Sites	This plant spreads short distances (3-5 ft), through rhizomes and seeds. ⁴ Flower buds develop in the late summer the year before flowering, and low winter temperatures promote their formation. Flowering will then occur in late spring, peaking in early summer, and lasting about 2 months. ⁵ Growth and reproduction is reduced under competition from other plant species. It may spread by rhizomes to reduce the impact of competition.
Other Comments	Management/control is recommended due to the invasive nature of this species.
PROPAGATION DETAILS: VEGETATIVE	
Ecotype	Wet lowlands, rich woodlands, pastures, meadows, and along roadsides and other disturbed areas. ²
Propagation Goal	Plants

Propagation Method	Vegetative
Product Type	Field-grown
Stock Type	Plant
Time to Grow	1 year ⁵
Target Specifications	1-3 ft tall ⁴
Propagule Collection Instructions	When: Rhizomes reproduce after flowering, or if the flowering stem is removed. ⁴
Propagule Processing/Propagule Characteristics	Regeneration from rhizomes is reduced in plant communities with high species richness. ⁴ Reproductive potential doesn't decline with age at least up to 10 years. ⁵
Pre-Planting Propagule Treatments	Rhizome reproduction can be induced by removing the flowering stem. This can be done through cutting, defoliation, disease, livestock trampling, or other disturbances. ⁴
Growing Area Preparation / Annual Practices for Perennial Crops	The high water-holding capacity of clay soil aids in establishment. ³
Establishment Phase Details	Establishment is reduced under well-drained or waterlogged conditions. Continuous grazing helps encourage the establishment and spread of the plant. In heavy clays or peaty soils, the rhizome may persist for 2+ years, while in more aerated soils the rhizome may disappear before flowering. ³
Length of Establishment Phase	Rhizomes reproduce after flowering, or if the flowering stem is removed. ⁴ Late winter-early spring ⁸
Active Growth Phase	Survival increases under disturbance that removes neighboring vegetation. ⁴ Continuous grazing helps encourage the establishment and spread of the plant. ³
Length of Active Growth Phase	2 months ⁵
Hardening Phase	Cross pollination is needed for seed production. ⁵ Continuous grazing helps encourage the spread of the plant. ³
Length of Hardening Phase	Late summer-autumn ⁵
Harvesting, Storage and Shipping	When storing seedlings, it is important to maintain adequate moisture. Seedling mortality occurs in dry periods. ³
Length of Storage	Reproductive potential doesn't decline with age at least up to 10 years. ⁵
Guidelines for Outplanting / Performance on Typical Sites	This plant spreads short distances (3-5 ft), through rhizomes and seeds. The plants produced from rhizomes have a <1% survival. ⁴ Flower buds develop in

	the late summer the year before flowering, and low winter temperatures promote their formation. Flowering will then occur in late spring, peaking in early summer, and lasting about 2 months. ⁵ Growth and reproduction is reduced under competition from other plant species. It may spread by rhizomes to reduce the impact of competition. ⁵
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Other Comments	Vegetative propagules are not typically vigorous enough for the development of large colonies. ³ Management/control is recommended due to the invasive nature of this species. ^{4, 5, 6, 8, 9}
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INFORMATION SOURCES

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Date Protocol Created or Updated	05/27/25