

Comparison Charts for the Ranunculaceae Key

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Plants in the Ranunculaceae (Buttercup Family) usually have numerous stamens and numerous pistils with a superior ovary; only those species with fewer parts are noted in the comparison charts. Leaf measurements refer to the size range of larger, mature leaves. Important differentiating traits for each species are presented in bold text. In some buttercup species (e.g., *Ranunculus acris*, *R. repens*), garden cultivars have been developed that have numerous petals, rather than the typical 5 petals; these may be found as occasional garden escapes, but are not taxonomically distinct or significant.

Key to the Ranunculaceae Comparison Charts

- 1a. Aquatic species with submergent leaves, finely divided into numerous filiform segments, and/or palmately-lobed floating leaves. **Chart 1**
- 1b. Terrestrial or amphibious plants with simple or compound leaves. **2**
 - 2a. Plants with bipinnately compound leaves, or ternately compound leaves with each of the 3 segments pinnately or bipinnately compound. **Chart 2**
 - 2b. Plants with simple leaves, blades entire, lobed, or shallowly to deeply divided into 3–7 segments; or leaves compound with 3 leaflets. **3**
- 3a. Leaf blades undivided, entire to shallowly 3-lobed, but not deeply divided **4**
- 3b. Leaf blades deeply divided into 3–7 segments or leaves compound, with 3 leaflets. **7**
 - 4a. Leaves simple and undivided, 1.8–12.5 cm long by 2–19 cm wide, with cordate, divergent or sagittate bases. **Chart 3**
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- 5a. Terrestrial plants with erect stems to 2 dm tall, not rooting at the nodes; arctic-alpine plants of Labrador. **Chart 4**
- 5b. Aquatic or wetland plants with creeping stems to 5 dm long, rooting at the nodes; plants of Newfoundland and/or Labrador. **6**
 - 6a. Aquatic or amphibious species; leaf blades with tapering (cuneate) to linear bases. **Chart 5**
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- 7a. Plants 0.3–3.5 dm tall; leaves compound, with 3 leaflets, or leaves deeply divided into 3 lobes (resembling leaflets); basal leaves 0.8–3 cm long by 1.5–4.5 cm wide. **Chart 7**
- 7b. Plants 0.6–15 dm tall; leaves deeply palmately divided into 3–7 segments, or leaves ternately compound with 3 leaflets; basal leaves 1.3–15 cm long by 5–15 cm wide. **8**
 - 8a. Flowers with 4–9 (usually 5) white, pink, or purple petaloid sepals; petals lacking or with 2 small nectariferous petals enclosed within the petaloid sepals. **Chart 8**
 - 8b. Flowers with 3–5 (usually 5) green sepals and 3–5 (usually 5) yellow petals. **9**
- 9a. Plants with simple, entire to deeply palmately divided basal leaves. **Chart 9**
- 9b. Plants with ternately compound basal leaves, each with 3 leaflets. **Chart 10**

Ranunculaceae Chart 1. Aquatic or amphibious species with finely-dissected submergent leaves.

<i>Ranunculus</i> Species:	<i>R. gmelinii</i>	<i>R. trichophyllus</i>	<i>R. subrigidus</i>
	Gmelin's water-crowfoot	threadleaf water-crowfoot	stiff water-crowfoot
Submergent Leaves	flaccid , 0.6–6.5 cm long × 1–9 cm wide, glabrous, kidney-shaped (reniform) to circular (orbicular), 3-parted (ternately divided), main segments 2–4 mm wide, with 1–3 lobes	usually flaccid , 2.5–7 cm long, glabrous or pubescent, fan-shaped (flabellate) to orbicular, dichotomously divided 3–5+ times into 150 ultimate segments	firm to rigid, usually pubescent ; 1–2.5 cm long, flabellate to nearly orbicular; dichotomously divided 3–5 times into 60–80 ultimate segments
Emergent or Floating Leaves	present, palmately-lobed, with 3–5 flat lobes	absent	absent
Sepals	4–5; spreading or reflexed, 2–5 mm long	5; spreading, 2.5–3.5 mm long	5; spreading, 3–4 mm long
Petals	usually 5, golden yellow , 3–7 mm long	5, white with yellow claws , < 5 mm long	5, white with large yellow claws, 7–10 mm long
Stamens	10–45	10–15	10–22
Achenes	1–1.6 mm long, glabrous ; beak 0.4–0.8 mm long	1.2–1.5 mm long, often pubescent; beak absent or minute	1.5–1.7 mm long, pubescent; beak 0.2–0.5 mm long
Habitat	shallow water or muddy shores, wet meadows, swamps, marshes, ponds	calcareous or brackish waters , in rivers, ponds, and lakes	calcareous or brackish waters , wNfld.
Range	swNfld.	Nfld. and Lab.	uncommon; wNfld.

Ranunculaceae Chart 2. Species with ternate or bipinnately compound basal leaves.				
Species:	<i>Actaea rubra</i> var. rubra	<i>Aquilegia</i> vulgaris	<i>Thalictrum alpinum</i>	<i>Thalictrum</i> pubescens
	red baneberry	European columbine	alpine meadowrue	tall meadowrue
Height	4–10 dm tall	3–7 dm tall	0.5–2 dm tall	5–30 dm tall
Leaves	ternately compound, ± 45 cm long/wide, segments bipinnate	ternately compound, 10–30 cm long, segments bipinnate	bipinnately compound, 2–10 cm long	ternately compound, to 50+ cm long, segments bipinnate
Leaflets	lanceolate to ovate, 3–9 cm long, apices acute or acuminate, margins sharply serrate	oblong, ovate, to obovate, 1.5–4.7 cm long, 2–7-lobed at the apex, lobes rounded , margins entire	obovate to fan-shaped (flabellate), to 1 cm long, 3–5-lobed at the apex, lobes rounded , margins entire	ovate to obovate, 1–7 cm long, usually 3-lobed at the apex, lobes acute to rounded , margins entire
Inflorescence	terminal raceme, ascending ; flowers bisexual	terminal cyme flowers bisexual, nodding	terminal raceme ; flowers bisexual, nodding	terminal panicle, flowers unisexual , (plants ± dioecious) only male flowers nodding
Sepals	4–5, white, petaloid, caducous	5, purple, petaloid, not caducous	4–5, white to purplish, petaloid, caducous	4–5, purplish, petaloid, caducous
Petals	4–10, white, spatulate	5, purple, prolonged into a long spur	absent	
Ovaries	1	5	2–6	several
Fruit	berries , ovoid, 5–11 mm long, red or white; the stigma persistent as a small black dot	follicles , lanceoloid, 15–25 mm long; the style persistent as a 7–15 mm beak	achenes , obovoid, vertically ridged, 2–3.5 mm long; beakless	achenes , ellipsoid, vertically ridged, 3–5 mm long; beak curved, 1.5–2.5 mm long
Habitat	coniferous forests, thickets on scree slopes, ravines in limestone barrens	introduced along roadsides on the Northern Peninsula; also cultivated	rich fens, alpine and limestone barrens	wet meadows, marshes, fens
Range	NL (N to cLab.)	introduced, nw/eNfld.	NL (S to sw/w/nw/cNfld.)	NL (N to cLab.)

Ranunculaceae Chart 3. Species with undivided leaves and cordate, divergent, or sagittate bases.		
Species:	<i>Caltha palustris</i>	<i>Ficaria verna</i>
	marsh marigold	lesser celandine
Stems	erect or decumbent, 1–8 dm tall, from creeping rhizomes; stems rooting at the nodes; roots fibrous	erect or decumbent, 1–3 dm tall, rhizomes absent; stems not rooting at the nodes; roots tuberous
Basal Leaves	petiolate; blades ovate, cordate, reniform, or ± circular (orbicular)	petiolate; blades ovate-triangular, deltate, cordate, or semicircular
Blade Size	5–12.5 cm long × 1–19 cm wide	1.8–3.7 cm long × 2–4 cm wide
Leaf Base	divergent to cordate, the basal lobes sometimes overlapping	divergent, cordate, or sagittate
Leaf Margins	usually entire or dentate	entire or broadly crenate
Cauline Leaves	flowering stems bear few, alternate, cauline leaves that are similar to, but smaller than the basal leaves, and are sessile or borne on short petioles	
Flowers	1–4.5 cm across; solitary or 2–7 in cymes	2–3 cm across; solitary
Sepals	5–12, yellow, petaloid , 1–2.5 cm long × 0.5–1 cm wide; outer sepals are often green on the lower surface	3, green, not petaloid , 4–9 mm long × 3–6 mm wide
Petals	absent	usually 8–9, yellow , 1–1.5 cm long × 3–7 mm wide
Fruit	follicles , usually 5–15 in circular or ± spherical clusters; follicles glabrous , ellipsoid, 8–15 mm long × 3–4.5 mm wide, with a beak 1.7–2.3 mm long	achenes , up to 15 in hemispherical clusters; achenes pubescent at the tip , obovoid, 2.6–2.8 mm long × 1.8–2 mm wide, and beakless
Habitat	coniferous and alder swamps, forested fens, marshes, streambanks	lawns, parks, and moist disturbed areas
Range	mainly wNfld., N to cLab.	Introduced in St. John's, eNfld.

Ranunculaceae Chart 4. Arctic-alpine buttercups of Labrador; leaves undivided to deeply 3–5-lobed.

<i>Ranunculus</i> Species:	<i>R. allenii</i>	<i>R. pygmaeus</i>	<i>R. nivalis</i>	<i>R. sulphureus</i>
	Allen's buttercup	pygmy buttercup	snow buttercup	sulphur buttercup
Stems	5–20 cm tall, erect or ascending	0.6–3.5 cm tall , erect or ascending	5–20 cm tall, erect	3–20 cm tall, erect
Basal Leaves	blades usually undivided, reniform or semicircular, margins crenate ; sometimes 3-parted	blades palmately 3–5-lobed, the segments elliptic to obovate, and often shallowly lobed	blades palmately 3–5-lobed, the lateral or all segments also shallowly lobed	blades undivided, ovate with crenate margins , or palmately 3–5-lobed, segments often 3-lobed
Blade Size	1.4–2.1 cm long, × 1.7–2.8 cm wide	0.5–1 cm long × 0.6–1.3 cm wide	0.5–2 cm long × 1.2–3 cm wide	about 1–3 cm long and wide
Leaf Base	truncate to cordate	truncate to ± cordate	truncate to cordate	obtuse to truncate
Leaf Margins	crenate, with 7–13 rounded teeth	entire	crenate	crenate or shallowly lobed
Cauline Leaves	1–3, alternate, lower leaves short-petiolate, deeply divided into 3–5 oblanceolate segments, these often 2–3 lobed ; upper leaves sessile and deeply divided	0; or 1–2 , alternate, sessile, cauline leaves similar to the basal leaves	1–3, alternate, sessile; deeply palmately divided with narrow segments	1–3, alternate, sessile, deeply palmately divided with narrow segments
Flowers	solitary or 2–4	1–2	usually solitary	solitary or 2–3
Sepals	5, 4–6 mm long × 2–3 mm wide, lower surface hairy, with colorless hairs	5, 2–4 mm long × 1.2–1.6 mm wide, lower surface hairy, with colourless hairs	5, 6–8 mm long × 3–5 mm wide, lower surface densely hairy, with brown hairs	5, 6–11 mm long × 4–6 mm wide, lower surface densely hairy, with brown hairs
Petals	5, yellow, 4–5 mm long × 2–4 mm wide	5, pale yellow, 1.5–3 mm long × 1–3 mm wide	5–6, white or yellow, fading to white , 8–11 mm long × 7–12 mm wide	5–6, yellow, 8–12 mm long × 7–11 mm wide
Achene Head	ovoid to cylindrical; 4–7 mm long × 4–6 mm wide	spherical to short-cylindrical 2.5–7 mm long × 2.5–5 mm wide	short-cylindrical to cylindrical, 7–14 mm long × 5–6 mm wide	ovoid to short-cylindrical, 6–12 mm long × 5–10 mm wide
Achene	1.6–1.8 mm long, beak 0.4–0.6 mm long	0.8–1.2 mm long, beak 0.3–0.7 mm long	1.5–2.5 mm long, beak 1–2 mm long	1.8–2.2 mm long, beak 0.8–1.4 mm long
Habitat	snowbeds, wet alpine meadows, along alpine brooks, marshes	snowbeds, wet meadows, cliffs, scree slopes	calcifuge ; edges of snowbeds, cliffs, alpine meadows, streambanks, tundra	calciphile ; snowbeds, wet meadows, bogs, seepage slopes, streambanks
Range	n/nwLab.	nLab. only	nLab. only	n-most Lab.

Ranunculaceae Chart 5. Aquatic or amphibious species; simple leaves with tapering leaf bases.

Species:	<i>Coptidium pallasii</i>	<i>Ranunculus flammula</i> var. <i>flammula</i>	<i>Ranunculus flammula</i> var. <i>ovalis</i>	<i>Ranunculus flammula</i> var. <i>reptans</i>
	Pallas' buttercup	lesser spearwort	ovalleaf lesser spearwort	creeping spearwort
Stems	rhizomes creeping or floating; rooting at the nodes; shoots ascending, 1–1.5 dm tall	rhizomes prostrate, often rooting at the nodes; shoots erect to ascending, 1–4 dm tall	rhizome creeping, rooting at the nodes; shoots prostrate or sometimes ascending, with erect flower stalks (peduncles)	rhizome creeping, rooting at the nodes; shoots prostrate, with erect flower stalks; often forming dense mats
Basal Leaves	absent	submerged basal leaves with lanceolate to ovate blades	tufted, rosettes forming at rooting nodes	tufted, at nodes
Blade Size	usually 1.5–3.6 cm long × 0.3–2 cm wide; petioles 7–7.5 cm long	1.8–4.5 cm long × 0.3–1 cm wide, lower leaves with petioles 1–3 × longer than the blades; upper leaves sessile or with short petioles	0.8–3.3 cm long × 0.2–0.8 cm wide; petioles 1–2 times longer than blades	0.7–3 cm long less than 1 mm wide
Leaf Margins	entire	entire or finely serrate	entire	entire
Cauline Leaves	alternate, 1 per node; blades undivided, linear, narrowly elliptic, obovate, or deeply 3-lobed	alternate, 1 per node , undivided; lower blades lanceolate to oblanceolate, upper leaves smaller	1–4+ per node, forming loose rosettes ; blades undivided; linear, narrowly elliptic, or oblanceolate	1–3 per node; leaves bladeless or barely developed, then linear to narrowly oblanceolate
Flowers	usually solitary; fragrant	solitary or 2–30 in cymes ; not fragrant	usually solitary; not fragrant	usually solitary; not fragrant
Sepals	3, purple, 6–10 mm long × 4–7 mm wide	4–5, yellow-green, 3–4 mm long	4–5, yellowish, 2–3 mm long	4–5, yellowish, 1–2 mm long
Petals	7–11, white to pinkish, 8–13 mm long × 3–6 mm wide, oblanceolate	5–6, yellow, 5–7 mm long × 3–4 mm wide, obovate	5–6, yellow, 3–5 mm long × 2–3 mm wide, obovate	5–7, yellow, 2.5–5 mm long × 1–2.5 mm wide, elliptic
Achenes	3.5–5.2 mm long; in spherical or hemispheric heads 5–12 mm long	1.2–1.6 long; in spherical or hemispheric heads 2–4 mm long	1.2–1.6 mm long; in spherical heads, 2–4 mm long	1.3–2 mm long; in spherical or hemispheric heads, 1.5–3 mm long
Habitat	bogs, pools in muskeg and tundra, brackish meadows	shallow water or muddy shores	shallow water, muddy shores, or ephemeral pools	shallow water, lake shores, riverbanks, or ephemeral pools
Range	n-most Lab. only	introduced in eNfld. (St. John's)	rare, nw Nfld.	thru Nfld., N to Saglek Bay, nLab.

**Ranunculaceae Chart 6. Coastal or wetland species with creeping stems, rooting at the nodes;
leaf bases truncate, divergent, or cordate.**

Species:	<i>Halerpestes cymbalaria</i>	<i>Ranunculus hyperboreus</i>	<i>Ranunculus hederaceus</i>
	seaside crowfoot	far-northern buttercup	ivyleaf crowfoot
Stems	stems stoloniferous, prostrate, 1–4 dm long; often forming extensive tangled colonies; flowering stems erect, 0.5–3 dm tall	stems stoloniferous, prostrate, 1–4 dm long; often forming dense floating or stranded mats	stems prostrate, 1–5 dm long, often forming floating or stranded mats
Leaf Arrangement	tufts of simple leaves develop at the nodes	cauline leaves alternate, simple; basal leaves absent	cauline leaves opposite, simple; basal leaves absent
Leaf Shape	simple, oblong, ovate, to nearly orbicular, shallowly 3–5-lobed (to 7-lobed) at the apex, lobes blunt-triangular to obtuse; petioles 3+ cm long	simple, reniform to broadly fan-shaped (flabellate), deeply cleft into 3 lobes, lobes oblanceolate, narrowed at the base; petioles 7–12 mm long	simple, reniform to nearly orbicular, with 3–7 blunt to rounded lobes, widest at the lobe bases, blades often with a dark blotch; petioles 1.6–7 cm long
Blade Size	0.6–3.8 cm long × 0.8–3.2 cm wide	0.3–1.2 cm long × 0.5–2 cm wide	0.4–2.5 cm long × 0.3–3.5 cm wide
Leaf Base	usually truncate, or rounded to cordate	truncate, divergent, to shallowly cordate	divergent to cordate
Leaf Margins	entire or crenate	entire, occas. crenulate	entire or crenulate
Flowers	usually solitary locally, or 2–5 flowers in a cyme	solitary, axillary	solitary, axillary
Sepals	5, spreading, 2.5–6 mm long × 1.5–3 mm wide, glabrous, green, scarious	3–4, spreading or reflexed, 2–4 mm long × 1–3 mm wide, glabrous, yellow and brown, scarious	5, spreading, 1.5–2 mm long × 1–1.5 mm wide, glabrous, green
Petals	5, yellow, elliptic to oblanceolate, 2–7 mm long × 1–3 mm wide	3–5 (usually 3), yellow, obovate, 2–5 mm long × 1–3 mm wide	5, white with yellow claws, elliptic, 2–4 mm long × 1–1.5 mm wide
Stamens	20–30	8–12	4–12
Achene Head	ovoid to cylindrical, 6–12 mm long × 3–6 mm wide	spherical to ovoid, 3–5 mm long × 2–5 mm wide	spherical or broadly globose, 3–4 mm long and wide
Habitat	brackish and estuarine marshes, tidal flats, shorelines, bogs, streambanks, ditches	shallow water pools in marshes or tundra, or stranded on wet mud along streambanks or pond margins	pond and lake margins
Range	coastal Nfld., s/e/c Lab.	thru Lab. (except sw), S to the Northern Peninsula, nWNfld.	introduced in eNfld. (native to seUS coastal plain)

Ranunculaceae Chart 7. Low terrestrial species with trifoliolate or deeply 3-lobed leaves.

Species:	<i>Coptis trifolia</i>	<i>Coptidium lapponicum</i>	<i>Anemonastrum richardsonii</i>	<i>Anemone parviflora</i>
	goldthread	Lapland buttercup	Richardson's anemone	northern anemone
Stems	flowering stem (scape) erect, 3–17 cm tall, arising from bright yellow to orange, elongate, horizontal rhizomes	flowering stem (scape) erect, 5–15 cm tall, from horizontal, creeping rhizomes buried in moss	flowering stem erect, 5–30 cm tall, from horizontal rhizomes, often growing in <i>Sphagnum</i> moss	flowering stem erect, 5–35 cm tall; from horizontal rhizomes
Basal Leaves	usually 1–4, compound, with 3 leaflets (trifoliolate); evergreen over 1 winter, but new leaves develop after the flowers bloom	1, from the creeping rhizome; simple, deeply 3-parted (appearing trifoliolate)	1, from the creeping rhizome; simple, broadly cordate, palmately divided into 3–5 segments, but not appearing compound	1–7, compound, with 3 leaflets (trifoliolate)
Blade Size	0.8–1.5 cm long × 2–3.5 cm wide	1–2.6 cm long × 1.5–4.3 cm wide	1–3 cm long × 1.5–4.5 cm wide	1.4–1.8 cm long × 1.0–1.4 cm wide
Petiole	2.5–3.5 cm long	4.5–5.5 cm long	1–12 cm long	2–10 cm long
Leaflet/Segment Shape	leaflets are obovate, about 0.5–1.7 cm long, cuneate at the base, apex shallowly 3-lobed; sharply serrate along the margins, with each tooth ending in a short bristle-like tip	segments are obovate to fan-shaped (flabella-form), 1–2.5 cm long, bases are cuneate to obtuse, side margins are entire; lateral segments partially cleft into 2 lobes, apex crenately 2–11-lobed	segments are obovate, 0.1–1.5 cm wide, bases are cuneate; margins are serrate to sharply serrate along the apex of each lobe	leaflets are obovate to fan-shaped (flabellate), 0.5–2.2 cm long × 0.5–1.3 cm wide, bases are cuneate to obtuse; side margins are entire, apices have 1–3 shallow, rounded lobes
Cauline Leaves	absent		absent (but 2 leaf-like involucral bracts are situated part-way up the stem)	
Flowers	solitary, scapose	solitary, scapose	solitary	solitary
Involucral Bracts	absent		2–3, in 1 whorl, 1–3.5 cm long, simple, flabellate or obovate; deeply divided into 3 obovate segments, bases are cuneate to truncate, apices are acute, with 3 sharp teeth on each lobe of the bract; margins are entire between lobes	2–3, in 1 whorl, 4–9 mm long; simple, flabellate; deeply divided into 3 oblanceolate segments, bases are cuneate, apices are blunt, with 1–3 rounded teeth, margins are entire between lobes

Chart 7 continued...	<i>Coptis trifolia</i>	<i>Coptidium lapponicum</i>	<i>Anemonastrum richardsonii</i>	<i>Anemone parviflora</i>
Sepals	4–8, petaloid, white, the lower surface tinged with reddish-brown; elliptic or oblanceolate, 4–11 mm long × 1–4 mm wide	3, yellowish-brown, ovate, 4–7 mm long × 2–5 mm wide, caducous	4–8, petaloid, yellow; elliptic to lanceolate, 8–15 mm long × 4–10 mm wide	4–7, petaloid, white on the upper surface, tinged with blue below; elliptic to ovate, 7–20 mm long × 4–9 mm wide
Petals	4–7, yellow-orange, club-shaped or oblanceolate, 5–10 mm long × 1.5–3 mm wide; producing nectar at the tips	5–8, yellow, elliptic or oblanceolate, 5–6 mm long × 2–3 mm wide	absent	
Fruiting Head	an aggregate of 3–9 follicles, in a circle around the top of the scape	an aggregate of 6–20 achenes, in a hemispherical head, 4–7 mm long × 8–10 mm wide	an aggregate of 20–35 achenes, in a broadly spherical head, about 1.5–2 cm long × 3–4 cm wide	an aggregate of numerous achenes, in a woolly, ovoid to spherical head, 2–3 mm long × 1–1.5 mm wide
Fruit	follicles ellipsoid, 4–7 mm long, smooth (glabrous), end in a 2–4 mm long beak; with a basal stalk (stipe)	achenes ovoid, 3.8–4.2 mm long, glabrous, with a curved beak, 1.6–2.4 mm long, hooked at the tip	achenes ovoid to ellipsoid, 3–4 mm long, glabrous, with a long, recurved beak, 3–6 mm long	achenes obovoid, 2–2.5 mm long, densely woolly, with a straight, slender beak, 1–2.5 mm long
Habitat	wet to mesic, coniferous and mixed-wood forests, bogs, willow scrub, and tundra, often growing in moss	wet coniferous forests, bogs, tundra, muskeg, and under willows thickets	snowbeds, wet alpine meadows, willow thickets, streambanks, and brook margins; prefers acidic to neutral pH	limestone barrens; snow beds, meadows, streambanks, rocky slopes; prefers calcareous soils
Range	throughout NL	c/wLab.	northernmost Lab.	sw/w/nw/cNfld; nw/nLab.

Ranunculaceae Chart 8. Tall terrestrial species with deeply divided simple leaves.

Species:	<i>Aconitum napellus</i>	<i>Anemonastrum canadense</i>	<i>Anemone multifida</i>	<i>Anemone virginiana</i> var. <i>alba</i>
	garden monkshood	Canada anemone	cutleaf anemone	riverbank anemone
Stems	erect, 8–15 dm tall, from tuberous roots	erect, 1.5–8 dm, from ± horizontal, slender rhizomes	erect, 3–7 dm tall, from a caudex, rhizomes absent	erect, 3–13 dm tall, from a caudex, rhizomes absent
Basal Leaves	several, petiolate; deeply palmately divided into 3–7 segments, each of which is pinnately divided into 2–3 pairs of lanceolate to linear lobes; segment bases are cuneate; margins entire, apices acute to acuminate	1–5, petiolate, deeply palmately divided into 5–7 segments, each deeply cleft into ± 3 narrow, oblanceolate lobes; segment bases are cuneate; margins coarsely-serrate, apices acuminate	3–6, petiolate, ternately divided into 3 segments, palmately divided 1–2 more times into narrow linear lobes; segment bases are attenuate to cuneate; margins entire, apices acute to acuminate	1–5, petiolate, palmately divided onto 3–5 segments, each partially divided into 3–5 lanceolate to oblanceolate lobes; segment bases are cuneate with concave to straight sides; margins sharply serrate, apices acute to acuminate
Blade Size	5–10 cm across	4–10 cm long × 5–20 cm wide	3–8 cm long × 3–12 cm wide	about 3–15 cm long × 6–20 cm wide
Leaf Pubescence	smooth (glabrous) or nearly so	veins on lower surface finely hairy	mainly lower surface with long silky hairs	mainly lower surface sparsely hairy
Cauline Leaves	alternate, similar to basal leaves, but lower leaves have short petioles, upper leaves are ± sessile	absent (but 2–5 leaf-like involucral bracts are situated part-way up the stem in 1–2 whorls)		
Flowers	1–32+, in a terminal raceme, to 28 cm tall; flowers 2–4 cm long; with bilateral (zygomorphic) symmetry	solitary, or 2–3 in a cyme; flowers have actinomorphic (regular) symmetry	5–7 (rarely 2), in a cyme; flowers have actinomorphic (regular) symmetry	solitary, or 3–9 in a cyme; flowers have actinomorphic (regular) symmetry
Sepals	5, petaloid, blue-violet or purple (rarely white); hairy on the inner surface; the perianth has an upper sepal called a hood (or helmet), 2–2.7 cm long plus a short beak, 2 lateral sepals, and 2 lower sepals (pendants)	4–6, petaloid, white, hairy on the lower surface, obovate, 0.8–2.5 cm long × 0.5–1.5 cm wide	5–9, petaloid, pink, or creamy to brownish-white tinged with pink, hairy on the lower surface, elliptic to obovate, 0.5–1.7 cm long × 0.3–0.9 cm wide	usually 5, petaloid, white, sparsely hairy on the lower surface; oblong, ovate, or obovate, 0.6–2 cm long × 0.3–1 cm wide

Chart 8 Continued...	<i>Aconitum napellus</i>	<i>Anemonastrum canadense</i>	<i>Anemone multifida</i>	<i>Anemone virginiana</i> var. <i>alba</i>
Petals	2, hidden within the hood; composed of a long narrow claw with an S-shaped spur and nectary at the apex	absent		
Fruiting Head	an erect aggregate of usually 3–4 follicles , about 2 cm long	a spherical aggregate of numerous achenes, about 1–2.5 cm in diameter	a spherical to ovoid aggregate of numerous achenes, 0.8–1.8 cm long × 0.8–1.1 cm wide	an ovoid to short-cylindrical aggregate of numerous achenes, 1.2–3 cm long × 0.7–1.1 cm wide
Fruit	follicles oblong , somewhat flattened longitudinally, glabrous ; about 1.5–2 cm long; ending in a straight to curved beak, 2–3 mm long	achenes obovoid, flat, broadly winged, glabrous to slightly hairy , not woolly; 2.5–6 mm long; beak firm, straight, pointing outward , 2–6 mm long	achenes ellipsoid , somewhat flat, densely woolly , not winged; 3–4 mm long; beak straight to slightly curved, erect , 1–6 mm long	achenes obovoid, densely woolly , not winged; 2–3.7 mm long; beak curved, pointed outward to ascending , 1–1.5 mm long
Habitat	abandoned gardens, often bordering cemeteries, occ. persisting along roads from discarded garden refuse	streambanks, damp thickets, meadows; on calcareous or alluvial substrates	rocky slopes, cliffs, or ledges; on calcareous or slate substrates	streambanks, moist river cliffs or ledges; on calcareous or slate substrates
Range	introduced in Nfld.	wNfld.	w/nw/cNfld.	wNfld.

Ranunculaceae Chart 9. Buttercup species with simple, entire to palmately divided basal leaves.					
Species:	<i>Ranunculus abortivus</i>	<i>Ranunculus acris</i>	<i>Ranunculus arcticus</i>	<i>Ranunculus recurvatus</i>	<i>Ranunculus sceleratus</i>
	kidneyleaf crowfoot	tall buttercup	arctic buttercup	hooked crowfoot	celeryleaf crowfoot
Stems	1–6 dm tall, base not bulbous; stems finely pubescent	to 10 dm tall , base not bulbous; stems glabrous or pubescent	0.6–4.5 dm tall, base not bulbous; stems glabrous or pubescent	2–7.5 dm tall, base bulbous, rhizome corm-like ; stems pubescent	1–6 dm tall; base not bulbous; stems glabrous
Basal Leaves	petioles long, blades undivided, reniform to nearly orbicular , bases cordate, margins crenate , apex rounded	petioles long, blades pentagonal, deeply palmately divided into 5 segments , each 1–2 times divided into narrow lobes; margins toothed	leaves mainly basal , petioles long, blades palmately divided into 3–9 narrow segments , margins entire	petioles long, blades broadly 3–5-lobed; segments obovate, base cordate, margins coarsely toothed near the apex	petioles long, shallowly 3–5-lobed, broadly ovate; lateral segments 2–3-lobed, margins crenate
Blade Size	1.4–4.2 cm long × 2–5.2 cm wide	1.8–5.2 cm long × 2.7–9.8 cm wide	0.8–3.8 cm long × 1–4.8 cm wide	2–7.5 cm long × 3–11.6 cm wide	1–5 cm long × 1.6–6.8 cm wide
Leaf Base	shallowly to deeply cordate	segment bases cuneate	truncate to cordate	cordate	truncate to cordate
Lower or Mid-Cauline Leaves	alternate; deeply divided into 3–5 oblanceolate segments, margins shallowly lobed	alternate; similar to basal leaves, but with narrower lobes	alternate; short-petiolate, lowest leaves similar to the basal leaves	alternate; short-petiolate, more deeply palmately cleft into 3–5 obovate lobes	alternate; reniform to semicircular in outline, 3-lobed or 3-parted
Upper Cauline Leaves	sessile, divided into 3 narrowly elliptic or linear segments, margins entire	sessile, deeply divided into 3–5 linear to narrowly elliptic segments	sessile; divided into 3 elliptic or linear segments, margins entire		short-petiolate; divided into 3 oblanceolate segments, simple, or the apex lobed
Flowers	many, in cymes		solitary or 2–7 in cymes	many, in cymes	
Sepals	5, reflexed , 2.5–4 mm long × 1–2 mm wide, lower surface glabrous	5, spreading, 4–9 mm long × 2–5 mm wide, lower surface hairy	5, spreading, 4–6 mm long × 3–5 mm wide, lower surface hairy	5, spreading to reflexed; 3–6 mm long × 1.5–2.5 mm wide, lower surface hairy	3–5, spreading to reflexed , 2–5 mm long × 1–3 mm wide, glabrous or sparsely hairy
Petals	5, yellow, triangular , 1.5–3.5 mm long × 1–2 mm wide, shorter than the sepals	5 (rarely many), yellow, obovate, 8–17 mm long × 7–13 mm wide , longer than the sepals	5, yellow, obovate, 5–10 mm long × 5–9 mm wide; longer than the sepals	5, yellow, triangular , 3–5 mm long × 1–2 mm wide, shorter than the sepals	3–5, yellow, obovate , 2–5 mm long × 1–3 mm wide, about equal to the sepals
Achene Head	ovoid, 3–6 mm long × 2.5–5 mm wide	spherical, 5–7 mm in diameter	obovate or cylindrical, 7–15 mm long × 5–8 mm wide	spherical, 5–6 mm in diameter	ellipsoid or cylindrical , 5–13 mm long × 3–7 mm wide

Chart 9 <i>continued...</i>	<i>Ranunculus abortivus</i>	<i>Ranunculus acris</i>	<i>Ranunculus arcticus</i>	<i>Ranunculus recurvatus</i>	<i>Ranunculus sceleratus</i>
Achene	1.4–1.6 mm long, glabrous; beak very short, 0.1–0.2 mm long	2–3 mm long, glabrous; beak very short, 0.2–1 mm long	1.8–2.7 mm long, glabrous or finely hairy ; beak short, 0.5–1 mm long	1.6–2.2 mm long, glabrous; beak hooked, 1–1.4 mm long	1–1.2 mm long, glabrous; beak small, about 0.1 mm long
Habitat	woods, fields, meadows, clearings, and streambanks	fields, meadows, roadsides, streambanks	calciphile ; arctic-alpine and rocky or gravelly slopes, cliffs, and barrens	stream banks, alder swamps, and rich woods, often over basic substrates	nitrophile ; preferring moist areas rich in organic matter
Range	Nfld. (except Avalon and Burin) and s/c/wLab.	introduced throughout Nfld. and in se/cLab.	far-north Lab., nwLab., nwNfld.	swNfld	ne/eNfld., introduced in wNfld.

Ranunculaceae Chart 10. Buttercup species with ternately compound basal leaves.

Species:	<i>Ranunculus hispidus</i> var. <i>caricetorum</i>	<i>Ranunculus macounii</i>	<i>Ranunculus pensylvanicus</i>	<i>Ranunculus bulbosus</i>	<i>Ranunculus repens</i>
	northern swamp buttercup	Macoun's buttercup	bristly crowfoot	bulbous buttercup	creeping buttercup
Stems	initially erect and 1–5 dm tall, then decumbent or creeping, rooting at the upper nodes, petioles and lower stems densely hairy, with stiff retrorse hairs ; base not bulbous	trailing to ascending, flowering stems 2–12 dm tall , rooting at the nodes, stems hairy, with stiff, spreading hairs; base not bulbous	erect, 1–12 dm tall ; branching, not rooting at the nodes , stems hairy, with stiff, spreading hairs; base not bulbous	erect, 2–6.5 dm tall , branching, not rooting at the nodes, stems hairy, with long, silky, ascending hairs ; base bulbous and corm-like , 0.5–3.5 cm thick	decumbent or creeping, 1.5–5 dm tall, rooting at the nodes, nearly smooth (glabrous) to hairy, with appressed to ± spreading hairs ; base not bulbous
Basal Leaves	most basal leaves are ternately compound (earliest leaves palmately cleft into 3–5 obovate lobes, margins with broad teeth), petioles long, leaflets 3, cleft into 3–5 ovate to obovate lobes, all leaflets stalked , bases ± truncate to tapering, margins coarsely toothed	ternately compound, petioles long, leaflets 3, deeply cleft into 3 ovate to obovate lobes , all leaflets stalked, lateral leaflets with short stalks , bases nearly truncate to tapering, margins shallowly lobed and toothed	ternately compound, petioles long, leaflets 3, deeply cleft into 3 elliptic to oblanceolate lobes , terminal leaflet long-stalked, lateral leaflets sessile to short-stalked ; bases rounded to tapering, margins incised and sharply toothed	ternately compound, petioles long, leaflets 3, deeply cleft into 3 obovate lobes, terminal leaflet long-stalked, lateral leaflets sessile ; bases nearly truncate to cordate, margins somewhat lobed or coarsely toothed	ternately compound, petioles long, leaflets 3, deeply cleft into 3 oblanceolate to obovate lobes, often marked with pale blotches below the sinus between lobes ; terminal leaflet long-stalked, lateral leaflets short-stalked , bases nearly truncate to obtuse, margins coarsely toothed
Blade Size	2–13.4 cm long × 2.4–16.8 cm wide	3.7–7.5 cm long × 4.5–9.5 cm wide	1.6–7 cm long × 3–9 cm wide	2–5.3 cm long × 2.4–5.4 cm wide	1–8.5 cm long × 1.5–10 cm wide
Cauline Leaves	alternate; similar to the basal leaves, but short-petiolate to sessile, with smaller, narrower leaflets		alternate; similar to the basal leaves, but upper leaves smaller, short-petiolate to sessile	alternate; sessile ; upper cauline leaves with 3 linear mostly entire to sparsely lobed leaflets	alternate; short-stalked to sessile, upper cauline leaves with entire blades
Flowers	2–8, in cymes	2–24, in cymes	3–many, in cymes	solitary	solitary, or 2–4 in cymes

Chart 10 <i>continued...</i>	<i>Ranunculus hispidus</i> var. <i>caricetorum</i>	<i>Ranunculus macounii</i>	<i>Ranunculus pensylvanicus</i>	<i>Ranunculus bulbosus</i>	<i>Ranunculus repens</i>
Sepals	5, spreading to reflexed, 4–10 mm long × 2–5 mm wide, lower surface glabrous to hairy, with stiff hairs	5, spreading to reflexed, 3–6 mm long × 1.5–3 mm wide, lower surface glabrous or hairy, with stiff hairs	5, reflexed , 2.5–5.5 mm long × 1.5–2 mm wide, lower surface with stiff, bristly hairs	5, strongly reflexed , 5–9 mm long × 2–4 mm wide, lower surface with long silky hairs	5, spreading or reflexed, 4–10 mm long × 1.5–4 mm wide, lower surface usually hairy with stiff hairs
Petals	5, yellow, obovate, 7–16 mm long × 3–10 mm wide	5, deep yellow, obovate, 3.5–6 mm long × 2.5–5 mm wide	5, pale yellow, oblong, shorter than the sepals , 2–5 mm long × 1–3 mm wide ,	5, yellow, obovate, 8–14 mm long × 8–11 mm wide	usually 5 (many in cultivars), deep yellow, obovate, 6–18 mm long × 4.5–15 mm wide
Achene Head	spherical or ovoid, 6–10 mm long × 7–11 mm wide	spherical or ovoid, 7–11 mm long × 6–10 mm wide	cylindrical , 6–18 mm long × 5–9 mm wide	ovoid, 6–9 mm long × 5–10 mm wide	spherical or ovoid, 5–10 mm long × 5–10 mm wide
Achene	2.2–5.2 mm long; beak ± straight, lanceolate, 0.8–2.6 mm long	2.4–3.3 mm long; beak straight, 1–1.4 mm long	1.8–2.8 mm long ; beak ± straight, 0.5–1 mm long	2.5–3.5 mm long; beak short, 0.2–0.8 mm long	2.6–3.2 mm long; beak slightly curved, 0.7–1.2 mm long
Habitat	streambanks, alluvial swamps, wet woods, often with sedges and marsh marigold	marshes, wet meadows, streambanks and shores; often emergent in shallow water	stream banks, marshes, pond margins, wet meadows, wet depressions in forests	fields, pastures, meadows, and roadsides; introduced	streambanks, marshes, wet meadows, lawns, and wet roadsides; introduced
Range	seLab. only	sLab., S to w/nw/neNfld.	c/s/sw/w/nwNfld, c/e/seLab.	intr. on Avalon Pen. and wNfld.	intr. thru Nfld., nw/e/seLab.