LESSER CELANDINE
[Ranunculus ficaria L.; Ficaria verna Huds; F. ranunculoides Moench]
RAFI

Habit: Erect (diploid type) to reclining (tetraploid type), perennial herb and geophyte[^11,^14]; 30 cm (12 in) or less in height[^14,^6,^5,^11]; spring ephemeral[^3,^7].

Reproduction: By seed and vegetatively by tuberous, adventitious roots; clonal; usually hermaphrodite[^14].

Leaves: Long-petioled with sheathing bases[^14]; blade 5-50 mm (3/16-2 in) long and wide, fleshy, glabrous, shiny, dark green[^5,^14], sometimes with whitish mottling or black blotches[^14]; cordate to oblong cordate, shape variable; entire, toothed, or wavy margin[^6,^5,^11]; rosette of 2-4 basal leaves; 1-2 pairs of opposite, cauline leaves may have some lobing[^14].

Stems: Glabrous and fleshy[^5,^14]; short internodes[^6]; aerial bulblets may be at each node, usually in tetraploids; may branch[^14]; first developmental stem is a spear shoot (one apparent cotyledon; the second is enclosed in the first)[^12].

Flowers: Terminal and solitary on each stem, 2-3 cm (~1 in) diameter; 3-4 green sepals that fall off early; 8-12 bright, shining (on inside), yellow petals that fade to white; 5-72 stamens and carpels[^14]; nectar produced; pollinators include short-tongued insects (bees, small beetles, and flies); flowering more likely on plants with large tubers and under high light[^14]; March-May[^14,^3].

Fruits/Seeds: Fruit a beakless, glabrous or pubescent achene (2.5-4 mm; 1-1.5 in long)^[^2,^6,^5,^11]; 10-15 achenes per flower[^2]; about 60% of all diploid seed is viable; about 2% of tetraploid seed is viable due to low pollen viability; germinate in both light and dark; warm then cold stratification required; germination optimal at 5°C or 11°C (day)/4°C or 9°C (night) (41°F or 52°F/39°F or 48°F)[^14,^1]; seed bank undocumented; evidence for dispersal by deer (in excrement) in native environment[^6]; May to early June[^14].

Supplement 1, July 2006
**LESSER CELANDINE**

*Ranunculus ficaria* L.

**Habitat:** Introduced from Europe (Norway/Russia to the Mediterranean/Portugal)\(^1\) to eastern U.S. in the mid 1700’s\(^3\); shade-tolerant; flowers and fruits before forest leaf-out\(^1\); tolerates dry conditions, but prefers wetter conditions in the spring; often associated with seasonally wet sites; possible preference for alkaline soils; in native England, most common in mixed deciduous forests; diploid is associated with undisturbed, deciduous woodlands and permanent pastures; tetraploid is associated with disturbed ground\(^1\); vegetative growth less susceptible to dry conditions than flowering plants\(^1\).

**Comments:** Plants with larger tubers develop more rapidly; vesicular-arbuscular mycorrhizal association present\(^1\); at least 9 cultivars\(^7\); possibly 100 varieties and 5 subspecies\(^4\), 2 of which appear to predominate—var. or ssp. *ficaria* (diploid) and var. or ssp. *bulbifer* (tetraploid)\(^9,14\); fragmentation of root tubers results in extensive vegetative propagation\(^1\); used medicinally as an anti-inflammatory, astringent, and antibiotic,\(^16\) but documented to cause acute hepatitis\(^13\); contains several flavonoid compounds\(^15\); documented reduction of its population in areas of increased soil acidification over 30 years\(^10\).

**Similar Native Species:** Marsh marigold (*Caltha palustris*), multiple flowers per stem, flowers petaloid (petal-like sepals only), fruit a follicle, stems hollow, leaves larger and lighter green\(^6\).