



**Lesser Celandine**

*Ranunculus ficaria* L.

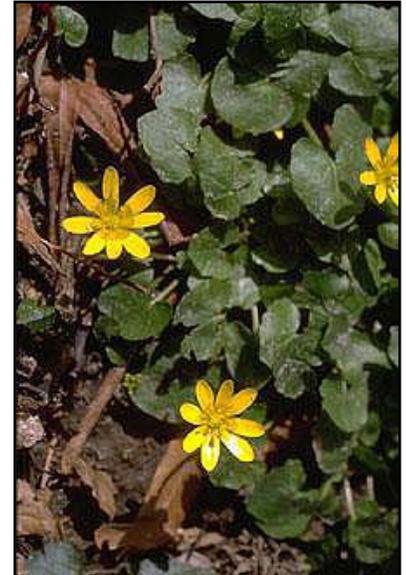
Buttercup family (Ranunculaceae)

**NATIVE RANGE**

Europe

**DESCRIPTION**

Lesser celandine, also known as fig buttercup, is an herbaceous, perennial plant. Plants have a basal rosette of dark green, shiny, stalked leaves that are kidney- to heart-shaped. The flowers open in March and April, have eight glossy, butter-yellow petals, and are borne singly on delicate stalks that rise above the leaves. Pale-colored bulblets are produced along the stems of the above-ground portions of the plant, but are not apparent until late in the flowering period. When in bloom, large infestations of lesser celandine appear as a green carpet with yellow dots, spreading across the forest floor. There are many varieties of lesser celandine including a double-flowered form with many crowded petals and dark green leaves mottled with silvery markings.



**NOTE:** Lesser celandine closely resembles marsh marigold (*Caltha palustris*), a native wetland plant that occurs in the eastern United States. Marsh marigold is a robust plant with glossy, rounded or kidney-shaped leaves and flowers on stalks that are 8 in (20.3 cm) or more in height and consist of five to nine deep yellow "petals" (actually sepals). Marsh marigold does not produce tubers or bulblets, nor does it form a continuous carpet of growth. Extreme care should be taken to correctly identify lesser celandine before undertaking any control measures to avoid impacts to this plant.

**ECOLOGICAL THREAT**

Lesser celandine is an exotic spring ephemeral and a vigorous growing groundcover that forms large, dense patches on the forest floor, displacing and preventing native plants from co-occurring. The ecological impact of lesser celandine is primarily on the native spring-flowering plant community and the various wildlife species associated with them. Spring ephemerals complete the reproductive part of their life cycle and most of their above-ground development before woody plants leaf out and shade the forest floor. Native spring ephemerals include bloodroot, common and cut-leaved toothwort, Dutchman's breeches, harbinger-of-spring, squirrel-corn, trout lily, Virginia bluebells, and many others. Because lesser celandine emerges well in advance of the native species, it can establish and overtake areas rapidly.



**DISTRIBUTION IN THE UNITED STATES**

Lesser celandine is currently found in nineteen states in the Northeast and Pacific Northwest (USDA PLANTS). It is reported to be invasive in nine states (Connecticut, Delaware, Maryland, New Jersey, Oregon, Pennsylvania, Virginia, Wisconsin, West Virginia), and the District of Columbia (WeedUS Database).

**HABITAT IN THE UNITED STATES**

Lesser celandine occurs in moist forested floodplains and in some drier upland areas, and seems to prefer sandy soils.

**BACKGROUND**

Lesser celandine was introduced to the United States as an ornamental plant. It is still available commercially in the U.S., along with many colorful varieties. All varieties of lesser celandine should be assumed to be invasive.

## BIOLOGY & SPREAD

Lesser celandine is an exotic perennial plant and spring ephemeral that spends much of the year (summer through early winter) underground as thickened, fingerlike tubers or underground stems. During the winter, leaves begin to emerge and photosynthesize in preparation for flowering. Flowering usually occurs from late winter through mid-spring (March through May), depending on conditions. Afterwards, the above-ground portions die back. Lesser celandine spreads primarily by vegetative means through abundant tubers and bulblets, each of which is ready to become a new plant once separated from the parent plant. The tubers of lesser celandine are prolific and may be unearthed and scattered by the digging activities of some animals, including well-meaning weed pullers, and transported during flood events.

## MANAGEMENT OPTIONS

Lesser celandine is very difficult to control but it can be managed with persistence over time using methods that are site appropriate. While manual methods are possible for some (small) infestations, the use of systemic herbicide kills the entire plant tip to root and minimizes soil disturbance.

### *Biological*

No biological control agents are currently available for lesser celandine.

### *Chemical*

The window of opportunity for controlling lesser celandine is very short, due to its life cycle. In order to have the greatest negative impact to celandine and the least impact to desirable native wildflower species, herbicide should be applied in late winter-early spring (March through May). Apply a 1.5% rate of a 39 to 41% glyphosate isopropylamine salt (e.g., Rodeo® for wetland areas) mixed with water and a non-ionic surfactant to foliage, avoiding application to anything but the celandine. Glyphosate is systemic; that is, the active ingredient is absorbed by the plant and translocated to the roots, eventually killing the entire plant. The full effect on the plant may take 1-2 weeks. Applications can be made during the winter season as long as the temperature is above about 50 degrees Fahrenheit, and no rain is anticipated within 12 hours. Because glyphosate is non-specific, spray should be controlled such that it touches only lesser celandine and does not drift onto desirable plants. To minimize impacts to sensitive-skinned frogs and salamanders, some experts recommend applying herbicide in March and then switching to manual methods.

### *Manual*

For small infestations, lesser celandine may be pulled up by hand or dug up using a hand trowel or shovel. It is very important to remove all bulblets and tubers.

### *Mechanical*

If mechanical removal is to continue after dieback of the plants, individual plants or clumps will need to be marked with some sort of stakes or flagging because it will be impossible to relocate the plants otherwise. When conducting mechanical removal, care should be taken to minimize soil disturbance as much as possible. For this reason, mechanical control may be inappropriate for large infestations in high quality natural areas.



**USE PESTICIDES WISELY:** Always read the entire pesticide label carefully, follow all mixing and application instructions and wear all recommended personal protective gear and clothing. Contact your state department of agriculture for any additional pesticide use requirements, restrictions or recommendations.

**NOTICE:** mention of pesticide products on this page does not constitute endorsement of any material.

## CONTACT

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### **SUGGESTED ALTERNATIVE PLANTS**

Many lovely, perennial, spring-flowering plants are available as non-invasive alternatives to lesser celandine. Some examples of plants native the eastern U.S. include wild ginger (*Asarum canadense*), Dutchman's breeches (*Dicentra cucullaria*), squirrel-corn (*Dicentra canadensis*), cutleaf toothwort (*Cardamine concatenata*), twinleaf (*Jeffersonia diphylla*), and bloodroot (*Sanguinaria canadensis*). Contact your local native plant society for additional suggestions and assistance. The Plant Conservation Alliance provides links to many groups at (<http://www.nps.gov/plants>).

### **OTHER LINKS**

- <http://www.invasive.org/search/action.cfm?q=Ranunculus%20ficaria>
- <http://www.lib.uconn.edu/webapps/ipane/browsing.cfm?descriptionid=89>

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### **REFERENCES**

- Bailey, L.H. and E.Z. Bailey. 1977. Hortus Third: A Concise Dictionary of Plants Cultivated in the United States and Canada, MacMillan Publishing Co., Inc., New York.
- Fernald, M. L. 1970. Gray's Manual of Botany, Eighth edition. D. Van Nostrand Company, New York, NY. p. 648.
- Peterson, R.T. and M. McKenny. 1968. A field guide to wildflowers Northeastern and North-central America: Houghton-Mifflin Co., Boston, MA. 420 pp.
- Salmons, S. 2003. Presentation to Mid-Atlantic Exotic Pest Plant Council, University of Pennsylvania, Philadelphia, PA.
- Strasbaugh, P. D. and E. L. Core. Flora of West Virginia, Second Edition. Seneca Books, Inc. Grantsville, WV.
- Swearingen, J. 2004. WeedUS: Database of Invasive Plants of Natural Areas in the U.S. (in progress).  
<http://www.nps.gov/plants/alien>.