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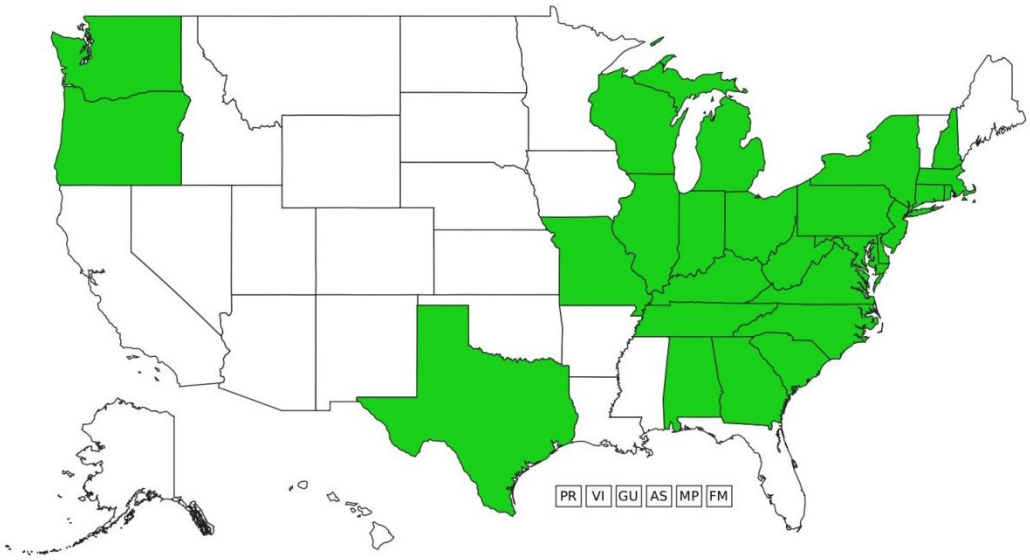
Lesser Celandine (*Ficaria verna* Huds.) Identification and Management

Common name: Fig buttercup, figroot buttercup, figwort, pilewort, and small crowfoot etc.
Scientific name: *Ficaria verna* Huds. formerly *Ranunculus ficaria* L.
Family name*:* *Renunculaceae* - buttercup family.

Pictures (left to right): Lesser celandine plant in bloom (left) and tubers/bulbils (right). Picture courtesy: Les Mehrhoff, University of Connecticut (left), and David L. Clement, University of Maryland (right), Bugwood.org.

US introduction and distribution: Lesser celandine also known as fig buttercup is a perennial herb native to Europe, temperate Asia, and northern Africa. It was introduced into North America from Europe for ornamental use. The earliest record of its presence in the Unites States dates to 1867 from Philadelphia County, Pennsylvania. Historically, lesser celandine has been used as a medicinal plant for treatment of hemorrhoids and scurvy due to high vitamin C content of the young leaves. Five subspecies are known to exist in the United States (Post et al 2009). Of these, *Ficaria verna* or Ranunculus ficaria subsp. calthifolius has the widest distribution and R. ficaria subsp. chrysocephalus has the most limited distribution. Currently, lesser celandine is

present throughout the northeastern United States and west to Missouri, and in the Pacific Northwest. (EDDMaps 2020).



Lesser Celandine US distribution (Map: EDDMapS. 2020. The University of Georgia – Center for Invasive Species and Ecosystem Health. Available online at http://www.eddmaps.org/. Accessed on April 4, 2020.

Biology and Identification: Lesser celandine is an ephemeral plant that can grow about 30 cm in height and attain a diameter of 30 cm. Stems are succulent and can grow up to 30 cm in length. Leaves are dark-green, fleshy, glabrous, and vary from cordate to oblong with entire or sinuate-crenately toothed margins. Leaf size ranges from 40- to 80-mm in width and 40- to 90-mm in length. First leaves appear as early as November in many populations in the Northeastern US. Solitary yellow flowers (2-to 6-cm wide) are borne on petioles 10-to 30-cm tall. Typically, flowers emerge in late March- early April and senesce by mid-May. Achenes are pubescent, beakless, and 3-to 4-mm long. Roots are generally fibrous and produce fig-shaped tubers 5- to 100-mm long. Lesser celandine reproduces sexually via seed and vegetatively via tubers and bulblets. Seed viability varies with the subspecies. Seeds do not germinate immediately after ripening; the embryo is not fully developed after the seed is shed from the mother plant and requires an after ripening period to mature.

Look-Alikes: Lesser celandine is often confused with marsh marigold (*Caltha palustris* L.), a native wetland plant. Therefore, proper identification is necessary before initiating any management plan. Unlike lesser celandine, marsh marigold flowers have five to nine yellow sepals and no petals. Marsh marigold has a fleshy root system; it does not produce tubers or bulbils. Another important difference is that lesser celandine spreads into a thick mat, while marsh marigold does not.

Ecological Impacts: Lesser celandine is adapted to a diverse habitat range including shady, moist woodlands, riverbanks, and lawns in the northeastern United States. Lesser celandine emerges earlier than most native vernal species and creates a monoculture; its dense carpet-like colonies invade the forest floor. In this way it prevents the native plants, especially the spring

ephemeral plant species, from emerging and completing their life cycle. Consequently, the resident wildlife dependent on native plant species for food and shelter is negatively impacted.

Management: Lesser Celandine is a highly difficult-to-control plant. Small patches can be controlled manually by careful removal of all tubers and bulblets followed by their destruction via solarization using clear/black plastic bags or by any other means. Since digging and uprooting causes significant soil disturbance, this method is undesirable in natural areas.

For large scale infestations, chemical control with herbicides is necessary. Glyphosate herbicide has shown good activity on lesser celandine. However, a single glyphosate application will not satisfactorily control lesser celandine; control may be less than 50% by spring next year. Under ideal conditions, two to three annual applications of glyphosate (≥41% strength) at 2.5% solution (3.25 floz glyphosate per gallon water) will be required for lesser celandine control. In turf or lawn settings, a three-way broadleaf weed control product containing MCPA, triclopyr, and dicamba can effectively control lesser celandine. Herbicide should be applied in late winter to early spring (Mid February to end March) when approximately 50% of lesser celandine plants are in bloom. Herbicide treatment in late winter minimizes the risk of injury to the native wildflowers. Also, be sure the air temperature is at least 50 degrees Fahrenheit at the time of herbicide application. Remember, glyphosate is a non-selective herbicide which destroys any green vegetation contacted. Therefore, carefully apply glyphosate to lesser celandine only. Use a wetland-approved concentration of glyphosate (Rodeo, Roundup Custom etc.) in or near the aquatic sites.

The mentioning of trade names in this publication is solely for the purpose of providing specific information. The CAES does not guarantee or warranty the products named, and references to them in this publication do not signify our approval to the exclusion of other products of suitable composition.

Information sources:

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