



Natural Heritage & Endangered Species Program

Massachusetts Division of Fisheries & Wildlife
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Large-leaved Goldenrod

Solidago macrophylla Pursh

State Status: Threatened

Federal Status: None

Description: Large-leaved Goldenrod is a 30 to 80 cm (1-2.5 ft.) tall, perennial herbaceous plant in the Asteraceae or Daisy family. The lower leaf blades are large, 3 to 15 cm (1.2-6 in.) long, sharply toothed, oval shaped, and taper abruptly to the leafstalk. Basal leaves are likewise toothed but are also tufted, situated on long stalks and usually persistent long after their appearance in late spring. Flowers are golden-yellow and form a narrow, club-shaped elongate inflorescence. Each flower head is large compared to other goldenrods, comprised of many small florets, and rests on a very short stalk. The dry fruits (achenes) are smooth and about 4 to 5 mm long. Flowering season is late July-September.

Similar Species: Cut-leaved Goldenrod (*Solidago arguta*) resembles Large-leaved Goldenrod but the former has a more arching or elm-like inflorescence. It inhabits rocky woodlands generally at lower elevations than Large-leaved Goldenrod.

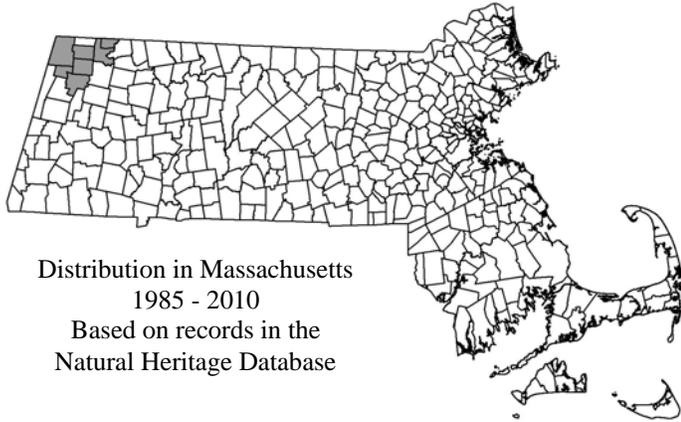
Habitat in Massachusetts: This species is found at higher elevations in cool woods with in filtered light or full sun along roadsides and trails, in thickets, clearings and open summits, and in damp woods with an open understory. Some sites have short, stunted trees. The plants largely occur in canopy openings on shallow, stony soil in High elevation Spruce-Fir Forests or a Spruce – Fir- Northern Hardwoods Forests. The overhead or nearby canopy usually includes Balsam Fir (*Abies balsamea*), Red Spruce (*Picea rubens*), Yellow Birch (*Betula alleghaniensis*), Heart-leaved birch (*B. cordifolia*), Black Cherry (*Prunus serotina*), American Beech (*Fagus grandifolia*), and Red and Sugar Maples (*Acer rubrum* and *A. saccharum*), with American Mountain-ash (*Sorbus americana*), Striped Maple (*A. pensylvanica*), Mountain Maple (*A. spicatum*), Bartram's Shadbush (*Amelanchier bartramiana*), Hobblebush (*Viburnum lantanoides*) and blackberries (*Rubus* spp.). The associated herbaceous layer can include Hay-scented Fern (*Dennstaedtia punctilobula*), Mountain Woodfern (*Dryopteris campyloptera*), Intermediate Woodfern (*D. intermedia*),



Large-leaved Goldenrod. Photo: Jonathan Coddington. Illustration: USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. An illustrated flora of the northern United States, Canada and the British Possessions. 3 vols. Charles Scribner's Sons, New York. Vol. 3: 385

Christmas Fern (*Polystichum acrostichoides*), *Lycopodium* spp., Wood sorrel (*Oxalis acetosella*), Canada Mayflower (*Maianthemum canadense*), Whorled Wood-aster (*Oclemea acuminata*), Yellow Clintonia (*Clintonia borealis*) and various graminoids such as Common Hairgrass (*Deschampsia flexuosa*), Woodland Millet (*Millium effusum*), and Stalked Sedge (*Carex debilis*).

Range: Large-leaved Goldenrod is a northern species found from Newfoundland to Ontario, south to the Green Mountains, Adirondacks, northern Berkshire Plateau, Mt. Greylock, and one historical record from Massachusetts near the Notch in the Holyoke Range. NatureServe ranks Large-leaved Goldenrod as G5, Globally Secure. It is not listed as rare in any other state or province.



Population Status in Massachusetts: Large-leaved Goldenrod is listed under the Massachusetts Endangered Species Act as Threatened. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. It is currently known from Berkshire and Franklin Counties and is historically known from Hampshire County. In Massachusetts, Large-leaved Goldenrod is at the southern limit of its range which, in part, accounts for its rarity. The lack of high elevations, coupled with our relatively high summer temperatures, may also be contributing factors to its rarity.

Management and Threats: Several of the known populations are along trails or access roads to summits and ridges, others are on summits. Widening of trails and erosion and soil disturbance are potential threats, as is mowing trail edges during the growing season. Any trail maintenance should be done with knowledge of the plant locations. Clearing followed by dense regrowth are threats on summits and along road accesses for wind towers and other summit development. Impacts of opening canopies such as drying of the soil, invasion by other species and too much sun exposure are threats. Habitat conditions can be kept suitable for populations by maintaining open areas of filtered sunlight below a sparse canopy. Rare plant locations that receive heavy recreational use should be carefully monitored for plant damage or soil disturbance; trails can sometimes be re-routed to protect population.

All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

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