



## VEGETATION MANAGEMENT GUIDELINE

Reed canary grass (*Phalaris arundinacea*)

### SPECIES CHARACTER

#### DESCRIPTION

This large, coarse grass has erect, hairless stems, usually from 2-6 feet (0.6-1.8 meters) tall. The ligule is prominent and membranous, 1/4 inch (0.6 cm) long and rounded at the apex. The gradually tapering leaf blades are 3 1/2-10 inches (8.9-25.4 cm) long, 1/4-3/4 inch (0.6-1.9 cm) wide, flat, and often harsh on both surfaces. The compact panicles are erect or sometimes slightly spreading and range from 3-16 inches (7.6-40.6 cm) long with branches 1/2-1 1/2 inches (1.2-3.8 cm) long. Single flowers occur in dense clusters in May to mid-June or August. Inflorescences are green or slightly purple at first, then become tan. Seeds are shiny brown.

The species growth form is highly variable. Reed canary grass is considered by some to be native to parts of Illinois, but a Eurasian ecotype has been introduced widely. Dore and McNiell (1980) suggest that in the Midwest reed canary grass is not native south of Lake Superior. Plant size, panicle shape, and panicle size are not correlated to geographic distribution.

#### SIMILAR SPECIES

It is extremely difficult, if not impossible, to distinguish the native and non-native ecotypes. Reed canary grass should be accurately identified before attempting any control measures. If identification of the species is in doubt, it should be confirmed by a knowledgeable individual and/or by consulting appropriate books.

#### DISTRIBUTION

This grass is found throughout the world except Antarctica and Greenland. It is locally very common in Illinois wetlands, particularly in the northern part of the State where it is often abundant in wet meadows, marshes, ditches, and other wetlands.

#### HABITAT

This species occurs in wetlands, including marshes and forested wetlands, wet to mesic prairies, wet meadows, fens, swales, and stream banks. Stream banks, ditches, and waterways often serve as seed dispersal corridors. It is still being widely used in Illinois for wastewater disposal wetlands, erosion control, and forage. Reed canary grass can survive long periods of inundation.

#### LIFE HISTORY

Reed canary grass is a coarse, sod-forming, cool-season, perennial grass, native to the cool temperate regions of Europe, Asia,



and North America and is adapted to much of the northern half of the United States. It occurs from wet to dry habitats with best growth on fertile and moist or wet soils (shores, swales, meadows). Reproduction is from seed and vegetatively by stout, creeping rhizomes averaging 2 inches in depth. It begins growth in early spring, growing vertically 5-7 weeks after germination, and then expands laterally. Growth peaks in mid-June and declines in mid-August. Vegetative vigor is related to maximum root and shoot production. Seeds ripen in late June, shatter when ripe, and can germinate, without dormancy, immediately after dispersal.

#### EFFECTS UPON NATURAL AREAS

It is a major threat to marshes and natural wetlands because of its hardiness, aggressive nature, and rapid growth. Native wetland and wet prairie species are replaced after several years of reed canary grass presence. It will even crowd out cattails. It is of particular concern because of the difficulty of selective control.

### CONTROL RECOMMENDATIONS

#### RECOMMENDED PRACTICES IN NATURAL COMMUNITIES OF HIGH QUALITY

Fire can help suppress the spread of reed canary grass and keep it out of high quality wetlands. Repeated late autumn or late spring burning for several years can control this species but not eliminate it. Annual burning may be needed for 5-6 years before good control is apparent. Burning is most effective where other species are present or in the seed bank, since fire allows native, fire-adapted species to compete successfully. However, late season burns often hinder forb reproduction. Fire is not very effective in dense monocultures of this grass where seeds or plants of native species are absent.

Before commencing any prescribed burns, open burning permits must be obtained from the Illinois Environmental Protection Agency and often other appropriate agencies. Burns should be administered by persons trained or experienced in conducting prescribed burns, and proper safety precautions should be followed.

Hand-pulling can be a very effective tool for controlling this species in small stands. Stands need to be pulled entirely a few times per year for several years.

The native reed canary grass should not be totally eliminated, but no reliable method for differentiating between the forms is known. Control measures should be implemented when reed canary grass degrades the natural quality or diversity of a community.

Sethodim (trade name Poast or Poast Plus) has been used successfully in central Illinois, however, only at the maximum label rate and well before culm elongation and with complete coverage (Henry Eilers, Pers. Com.). Poast herbicide is more specific and reduces impacts to native sedges and grasses. However, label restrictions prevent the use of this herbicide near the water's edge is a grass specific herbicide that may control reed canary grass. A 0.3% active ingredient solution is recommended. Clethodim, marketed under several trade names such as Intensity One, is another grass-specific herbicide that may be effective. A 0.08% active ingredient solution is recommended.

## RECOMMENDED PRACTICES IN BUFFER AND SEVERELY DISTURBED SITES

The site should be burned in late spring and reed canary grass should then be sprayed with glyphosate according to label instructions in June and again in September. The second application is especially important as the species is taking nutrients back to the roots. It may be necessary to burn and spray in multiple years.

When burning is not an option, certain herbicides are effective where there is no overriding concern for damaging surrounding native species. Rodeo, a formulation of glyphosate designed for use in wetlands, will kill reed canary grass, especially young plants, when applied to foliage according to label recommendations. Rodeo should be applied in early spring when reed canary grass is green and most native wetland species are still dormant. Paveglio et al. (1996) observed greater dieback of reed canary grass after foliar applications of Rodeo combined with a surfactant (LI-700) applied in late May and again in late August (prior to senescence).

Dalapon also reportedly kills reed canary grass and is licensed for use in aquatic areas. Dalapon should be mixed at 3.5 dry ounces of with 2.5 gallons of water. **Rodeo is a nonselective herbicide that will kill all vegetation contacted.** Dalapon selectively kills only grasses and monocots.

Spraying foliage with Roundup (a formulation of glyphosate) mixed according to label instructions and subsequent burning of dead residue has been moderately effective in northern Illinois. Lyford (1993) found that a 2.5% active ingredient solution of glyphosate as a foliar spray was the most effective treatment, either alone or in combination with cutting. However, Roundup is not licensed for use in aquatic areas and should only be used in areas without standing water.

When using any herbicide, precautions should be taken to avoid contacting non-target species. **Do not spray so heavily that herbicide drips off the target species.** The herbicide should be applied while backing away from the treated area to avoid contacting wet herbicide. By law, herbicides only may be applied as per label instructions and by licensed herbicide applicators or operators when working on public properties.

Where practical, it can be useful to sow in seed of nearby native grasses and forbs after reed canary grass has died (due to control efforts) or gone dormant. This is best accomplished with a no-till drill to minimize soil disturbance. Sowing native seed into post reed canary grass sites with a rake should be avoided because raking disturbs the soil and enhances germination of the seed of reed canary grass in the soil. Reed canary grass seeds can germinate immediately after dispersal without going through dormancy.

## FAILED OR INEFFECTIVE PRACTICES

The herbicides Fusilade has been tested by Illinois natural area managers and appear to be ineffective in controlling reed canary grass. Hand control is far too labor-intensive for large stands.

Mowing and grazing may reduce vigor and seed set. Mowing is ineffective as a control measure unless combined with a herbicide treatment. Grazing is probably not a practical method of control in wetland areas where canary grass usually is a problem. Tillage, like grazing, is not usually practical in wetlands, nor appropriate for high quality sites. The use of heavy equipment is ineffective, as reed canary grass responds quickly

from rhizomes and seed bank deposits. Even a restoration site that was burned in late spring, treated with herbicide twice, tilled, and planted with wheat, still produced dense stands the second summer due to rhizomes and seed germination. The science of restoring water levels is inconclusive and needs more research. There are no known biological control methods that are feasible in natural areas. Finally, planting competitive, less invasive, native species, without first controlling the reed canary grass, will not be successful.

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