

BEST MANAGEMENT PRACTICES For the Control of Common Reed (Interim Guide, Summer 2007)

Applicability

The following document contains acceptable practices for control of the following terrestrial invasive species: Common Reed (*Phragmites australis* ssp. *australis*).

The following management options, should be selected with consideration for the location and size of the infestations, the age of the plants, past control methods used at the site, time of year, weather conditions and adjoining and nearby land uses.

Other management approaches not identified here may be appropriate, but should be carefully researched before implementation.

GENERAL PRACTICES

1. **Erosion Control** - Some of the methods described below require actual digging or pulling of plants from the sand/soil. In all cases they require removal of vegetation whether or not there is actual soil disturbance. Each situation must be studied to determine if the proposed control method and extent of the action will destabilize sand/soils to the point where erosion is threatened. Generally in beach and dune areas, sand fencing is recommended to prevent wind erosion of open sand. Fencing should be installed no later than mid-October, and should remain up through fall, winter and spring. It may be removed during summer, but until native plants stabilize the area, sand fencing should be replaced each fall.

2. **Revegetation** - Although not a specific condition, replanting with native species is highly desired. All of the control methods below are aimed at reducing or eliminating invasive species so that natives are encouraged to grow and re-establish stable conditions that are not conducive to invasive colonization. In most cases removal or reduction of invasive populations will be enough to release native species and re-establish their dominance on a site.

3. **Herbiciding** – Use of herbicide is not a preferred method along the Lake Huron coastline. If an appropriate environmentally friendly product becomes available and registered in Canada, it should only be done by a licensed applicator approved by the local municipality. The only application permitted in beach areas is spot treatment to individual plants using a wick applicator, cloth glove applicator, stem injection or herbicide clippers. **No broadcast herbicide applications should be used.** The only glyphosate herbicides contemplated for use may be used only in situations where there is no standing water including

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wetlands, or wet beach swales. The herbicide RODEO® which can be used where standing water is present, is not an approved herbicide in Canada at this time. **In all cases herbicides should only be used by a licensed applicator or Technician under the direction and authority of the municipality.** All herbicide spot treatments require follow-up inspection later in the growing season or the following year to re-treat any individuals that were missed.

4. Equipment Sanitation - All equipment used for invasive species control, whether it be hand or power driven, must be cleaned prior to entering onto a control site and prior to leaving the site. This is an effort to reduce transport of invasive plant seeds or plant propagules and reduce the potential for new invasive introductions. Use steam or hot water to clean equipment.

5. Material Collection and Transportation – While on the control site place all cut plant material in heavy duty, 3 mil or thicker, black contractor quality plastic clean-up bags. Alternatively, bundle cut plants and place on tarps for carrying and loading onto truck. The tarps will help prevent the dropping of seeds and rhizome fragments that could re-contaminate the site. Securely tie the bags and transport from the site in a covered vehicle in order to prevent spread or loss of the plant material during transport from the control work site to the appropriate staging or disposal location. The main root structure, root fragments and/or horizontal rhizomes from harvested controlled infestation should be bagged only to facilitate transport to an appropriate staging area.

6. Composting - Because of the extremely robust nature of invasive species, composting in a typical backyard compost pile or composting bin is not appropriate. However, methods can be used whereby sun-generated heat can be used to destroy the harvested plant materials. For instance, storage in a sealed 3 mil thickness (minimum) black plastic garbage bags on blacktop in the sun until the plant materials liquefy is effective. If a larger section of blacktop is available, make a black plastic (4 mil thickness minimum) envelope sealed on the edges with sand bags. The plant material left exposed to the sun will liquefy in the sealed envelope without danger of dispersal by wind. The bags or envelopes must be monitored to make sure the plants do not escape through rips, tears or seams in the plastic. **When composting is suggested later in the text it is understood that liquefying the plant material in or under plastic is the desired action; not disposal in backyard composters or open landfill composting piles.**

CONTROL METHODS FOR COMMON REED (Phragmites australis ssp. australis)

PLANT DESCRIPTION

Phragmites is a perennial grass that can grow to 4 metres in height. Flowering and seed set occur between July and September, resulting in a large feathery inflorescence, purple-hued turning to tan. *Phragmites* is capable of vigorous vegetative reproduction and often forms dense, virtually monospecific stands. It is unclear what proportion of the many seeds that *Phragmites* produces are viable. **Please note that identification of *Phragmites* should be done by a professional botanist prior to treatment to distinguish the invasive non-native race from the non-invasive native.**

MANAGEMENT OPTIONS

1. Cutting / Mulching

Effectiveness:

Need to repeat annually for several years to reduce spread of plants. Hand-pulling, though labour intensive, is an effective technique for controlling Common Reed in small areas with sandy soils.

Can be effective in small stands i.e. <100 plants, low-med density (1-75% area) & <1 hectare. The cutting of larger stands having high stem densities is not an effective control method unless coupled with an immediate application of glyphosate to the freshly-cut, stem cross sections or with a cut-stem injection of glyphosate.

Methods:

The best time to cut Common Reed is when most of the food reserves are in aerial portion of plant when close to tassel stage, e.g.: at end of July/early August to decrease plant's vigour. Some patches may be too large to cut by hand, but repeated cutting of the perimeter of a stand can prevent vegetative expansion. Common reed stems should be cut below the lowest leaf, leaving a 10 cm or shorter stump.

Hand-held cutters and gas-powered hedge trimmers work well.

Repeat in second year and then every subsequent year until the plant is under control.

Cautions:

Since Common Reed is a grass, cutting several times during a season, at the wrong times, may increase stand density. However, if cut in late July/early August, most of the food reserves produced that season are removed with the aerial portion of the plant, reducing the plant's vigour. This cutting regime may eliminate smaller colonies if carried out annually for several years. Manual or mechanical cuttings of larger, high density, monospecific Common Reed stands can be difficult from a control standpoint and may require the hand application of glyphosate by a licensed technician approved by the municipality.

Disposal:

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Cut material should be removed from the site and composted or allowed to decay in an area inland to prevent sprouting and formation of rhizomes. Do not attempt to compost rhizomes.

Sanitation:

Clean all clothing, boots, & equipment to prevent spread of seed.

2. Herbicide

Effectiveness:

Herbicide use is a 2 year, 2 step process because the plants may need a “touch-up” application, especially in dense stands since subdominant plants are protected by thick canopy and may not receive adequate herbicide in the first application.

Methods:

Use glyphosate formulations only. Apply after tasseling stage when nutrients going back to rhizome and will translocate herbicide into roots. After 2 to 3 weeks following application of glyphosate, cut or mow down the stalks to stimulate the emergence and growth of other plants previously suppressed. If the plants are too tall to spray, cut back in mid summer and apply glyphosate using a spot spray bottle for individual foliar spot treatments or swab, syringe w/large gauge needle or Nalgene wide-mouth, Unitary wash bottle to apply 1-2 drops of 50% glyphosate solution directly into each cut stem.

Cautions:

Unless an environmentally safe herbicide product can be found, it is not recommended that herbicides be used in the coastal environment. Where it can be used in an appropriate setting, glyphosate herbicide is not selective (kills both monocots & dicots), thus should be applied carefully to prevent killing of non-target species. All tank mixes should be mixed with clean (ideally distilled) water because glyphosate binds tightly to sediments, which reduces toxicity to plants. Do not apply in windy conditions because spray will drift and kill other plants. Do not apply if rain is forecast w/in 12 hours because herbicide will be washed away into the lake before it can act. Do not use around standing water or near the lake.

3. Black Plastic

Effectiveness:

Can be effective in small stands i.e.:<100 plants, low-med density(1-75%area). Plants die off w/in 3-10 days, depending on sun exposure.

Methods:

Cut plants first to less than 10 cm. Gas powered hedge trimmers are very effective for cutting After cutting a stand of Common Reed, anchor a sheet of

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black plastic, geotextile or dark tarp over the cut area using sand bags, logs or rocks. High temperatures under the plastic will eventually kill off the plants. This technique works best when the treated area is in direct sunlight. Plastic should be at least 6 millimeters thick. Hold plastic in place with sandbags, rocks, biodegradable stakes, etc. Can treat runners along the plastic edges with a spot application of Rodeo®. The plastic can be removed the following year when the covered plants have been killed. A few common reed shoots may return. These can be cut or hand-pulled.

Cautions:

Must monitor to determine if shoots are extending out from under the plastic.

Disposal:

Can leave cut material under plastic or bag all plant parts & remove from site (compost at municipal facility, dispose of in approved landfill or incinerate with appropriate municipal permits).

Sanitation:

Clean all clothing, boots, & equipment to prevent spread of seed.

4. Pulling

Effectiveness:

Can be effective in small stands i.e. <100 plants. Very labour intensive control method, best results when infestation occurs in sandy soils.

Methods:

Hand-pull plants <2 years old. Use shovel for plants >2 years old-dig up plant, then replace sand.

Disposal:

Bag all plant parts and remove from site (compost at municipal facility, dispose of in approved landfill or incinerate with appropriate municipal permits).

Sanitation:

Clean all clothing, boots, & equipment to prevent spread of seed.

(Source: The Nature Conservancy)