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FS927

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Phragmites:
Occurrence and Management

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Phragmites (*Phragmites australis*), or common reed, is a widely distributed reedgrass in coastal New Jersey. It is a wetlands species but considered a major weed by property owners and developers throughout the coastal areas of the state. It has invaded lakes, ponds, and waterways, turning them back into dryland. It also invades gardens and landscapes, where it suppresses desirable plants. It may displace plant species that provide food for wildlife and subsequently alter the wetland habitat.

Phragmites is native to wetland areas, typically found growing in marshes and swamps. It is common in brackish (slightly saline) but grows faster in freshwater environments. Phragmites is commonly found along railroad tracks, roadside ditches, piles of dredge spoil, any soil depressions that hold water, and other such disturbed areas. It reproduces rapidly by vegetative means via a rhizome, which forms a dense mat in the water bed. The seed has very poor viability.

Mature plants may reach 6 to 9 feet in height, with leaf blades up to 2 feet long. From July to October, the plant produces a pink-purple flower tassel, up to 1.5 feet in length. The tassel produces large amounts of seed dispersed between November and January. Seed dissemination is primarily by wind, birds, and humans.

The underground rhizomes of phragmites can extend six feet (2 m.) deep into the soil, with the root penetrating deeper. The underground parts thrive in stagnant water, and can survive between 1.2% to 3.9% salinity (salt content of water). For these reasons, phragmites thrives where few other plants can survive. The roots and rhizomes form dense mats which keep other plant species out of the ecosystem. The mat becomes a strong barrier for sediments and moving objects in the water medium. Positively, this attribute has been used favorably for wastewater management and erosion control in different parts of the world. Additionally, the root/rhizome mat provides a habitat for some animals (birds, muskrats) and insects (gall and stem borers, aphids).

Managing Phragmites

Biological Control

Biological control organisms are yet to be identified for phragmites control.

Mechanical Control

1. Mechanical removal of leaf litter may increase phragmites stand density by exposing rhizome buds to light.

2. Burning does not offer complete control because rhizomes are not killed. Note that burning a phragmites stand can be dangerous since spotfires can be produced over 100 feet away. However, a

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well-managed burning removes accumulated leaf litter, allowing seeds of other plant species to germinate.

3. Cutting phragmites may also offer successful control. Timing is critical: Cut in late July to deplete food preserves; repeat cutting for several years. Hedge trimmers and *weed wackers* cut well and perform better than loppers and sickles. Remove all cut stems to prevent re-sprouting.

4. Annual mowing only affects the above-ground plant parts. Continued mowing can gradually reduce phragmites populations over time.

5. Suggestions for the home landscape:
   - Phragmites rhizomes biomass can be reduced significantly within 24 months by regular mowing with a standard lawn mower, followed by adding a thin layer of topsoil and seeding with a desirable turfgrass species. Mow every week to get results by the second year.
   - Place clear plastic over the infested area during the summer, weighing the edges down. This create high temperatures which induces plant dieback within 3 to 10 days. Phragmites may return, but the population will be significantly reduced. Black plastic cover from late summer through the winter has shown up to 90% control.

6. Other methods successfully used to reduce phragmites populations include:
   - grazing by cattle (rhizomes are trampled and lose vigor);
   - draining and dredging (not appropriate on preserves);
   - reintroducing saltwater tidal action (using a self-regulating tide gate);
   - flooding (3 feet of water must cover rhizomes during the 4 month growing season);
   - plugging of ditches and adding culverts to improve drainage and raise soil acidity;
   - disking to expose rhizomes to desiccation. (Note that under favorable conditions, rhizome fragments may produce new plants).

Chemical Control

The recommended herbicide for phragmites control is *glyphosate*. It is sold for application on water or in wet places as Rodeo and Accord. For land application, it is sold as Roundup (a concentrate), or Kleenup (ready-to-use without mixing). This herbicide is non-selective and will kill any live plant it hits. It is absorbed by the plant, translocates to the underground root/rhizome system, and kills it. Within 7 to 10 days, the topgrowth yellows and dies.

Treatments should be applied in late summer (after tasseling). Multiple applications may be required. Do not apply under windy conditions to avoid drift. Do not apply if there is a chance of rain within 12 hours. Follow all label directions. Herbicides for phragmites control may be applied using air or ground sprayers, as well as wick wipers or backpack sprayers. Better results are obtained if old tassels are removed prior to herbicide application.

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Desktop publishing by Rutgers-Cook College Resource Center

Published: December 1998

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