The Water Treatment Experts !

Reed Maintenance Guide

Maintaining Reeds without Herbicide

Emergent aquatic plants at Seaford Wetland (Zhang, 2020)

AQUATIC TECHNOLOGIES
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Managing Reeds, Rushes and Sedges

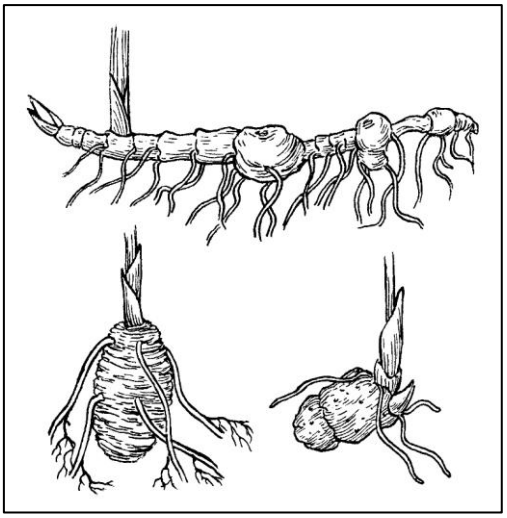
Why do these plants need maintaining?

Emergent plants are characterised by having dense, often rhizomatous roots in shallow soils along the water's edge, with their growth habit emerging from the water. We often refer to these plants as reeds, rushes and sedges. Whilst they can be highly useful at binding soil, reducing erosion and filtering nutrients in run-off, they can become problematic when they take over the water body.

Reeds, rushes and sedges will require continuous maintenance over successive seasons, even after they have been harvested by machinery. The reason for this is because of their root structure, bulbs and seed bank.

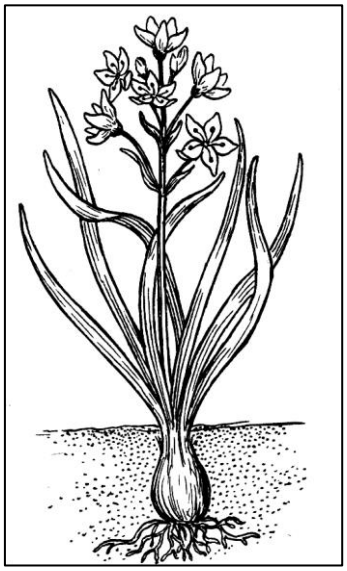
Roots, Bulbs and Seeds

A rhizomatous root structure is a type of root system characterised by the presence of horizontal, underground stems called rhizomes. These rhizomes serve as storage organs and give rise to new roots and shoots, allowing the plant to propagate and spread horizontally. This adaptive structure enables these plants to efficiently colonise new areas, survive adverse conditions, and promote vegetative growth.



Rhizomatous Root Structure (Foresman, 2020)

Bulbs are vital repositories of plant energy and nutrients, crucial for the survival and reproduction of various flowering plants, including emergent aquatic plants. Bulbs store nutrients and energy produced through photosynthesis, allowing the plant to survive adverse conditions or seasons and provide resources for new growth. When reeds, rushes or sedges pop up after having disappeared for a number of seasons, it may be because the bulb has been lying dormant until conditions became favourable.



Plant with a bulb (Foresman, 2020)

A soil seed bank refers to the reservoir of viable seeds present in the soil, representing the potential for future plant growth. Seeds within the soil seed bank can remain dormant until conditions become favourable for germination. Some species such as *Typha latifolia* (cumbungi or bulrush) can have a seed bank that remains dormant for up to 100 years (DiTomaso and Kyser, 2013).

Treatment Options

Harvesting

Harvesting is ideal for larger water bodies with dense coverage of emergent reeds. A Mobitrac machine will be able to harvest up to 2,000 square metres of plant material in an 8-10 hour day, depending on how thick and dense the coverage is.

Harvesting will not be possible if you have a rubber mat or any type of liner. This is because the operator cannot accurately see the water depth and may pierce the liner. The tracks on the machine are also capable of ripping or tearing the liner.

The Mobitrac machine requires adequate access to the waterbody, free of vegetation, tree roots and rocks. Whilst it can move on land and water, it will need a seamless transition from land to water, not a steep drop.

Lake Mower

If the Mobitrac is unsuitable for your water body, the Lake Mower will easily cut through thick reeds.

The Lake Mower will be required to be attached to an aluminium boat. The boat will need around a 5HP outboard motor, or bigger, to be able to push the mower through the water. The ideal size motor would be 10/15HP.

The Lake Mower runs off a 12 volt battery (not included). The cutting depth can be adjusted from 0 to nearly 1 metre using the adjustable collar. The mower has the option to add a 60cm or 1.2m extender.

For more information on the Lake Mower: Click Here

Weed Razor Pro

The Aquatic Weed Razor Pro has an adjustable V shaped blade making it a good option for manually removing tough reeds. For dense reeds, adjust the blade to its narrower setting. This makes it easier to cut thick stems. The blade can then be adjusted to its wider setting once the reeds have begun to thin out.

Removing the bulk of the cut plant material will minimise excess nutrients from entering the water body. Excess nutrients like phosphorous can spur on an algal bloom.

For specifications on the Weed Razor Pro: Click Here

Follow-up Maintenance

Aquatic Blue

Aquatic Blue reduces UV light penetration through the water column. It is best applied after harvesting/cutting of reeds. By reducing the UV penetration, the cut reeds are slower to photosynthesise, thus slowing down the growth rate of the plants. Aquatic Blue decreases the overall water temperature which increases oxygen saturation. Higher dissolved oxygen levels support aerobic bacteria that break down organic matter more efficiently. This process helps metabolise excess nutrients, like nitrogen and phosphorous, which aid weed and algae growth. Higher dissolved oxygen levels also support aquatic life by creating a healthier environment. Aquatic Blue is food-grade, and once diluted it will not stain skin, hair, rocks, sand etc. and is safe for recreation and aquatic wildlife.

Beneficial Bacteria

Beneficial bacteria play a significant role in managing excess nutrients and controlling weed growth in aquatic environments. Beneficial bacteria effectively reduce excess nutrients like nitrogen and phosphorus in water bodies. They metabolise these nutrients, converting them into forms that are less available for algae and weeds to utilise. By occupying ecological niches and consuming available nutrients, beneficial bacteria can outcompete harmful microorganisms and limit resources for unwanted weed growth.

References:

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