

Dense Oxygen Weed

Egeria Densa

**Total Control Plant under the
West Coast Regional Pest Plant
Management Strategy**



**Suspected sightings of this Total Control Plant should be reported promptly to
the West Coast Regional Council or DOC Conservancy Office, Hokitika**

National Pest Plant Accord Status

Dense Oxygen Weed (as *Egeria densa*) is listed in the 2008 National Pest Plant Accord (NPPA) and is banned from sale, propagation and distribution in New Zealand. For more information refer to the MAF Biosecurity New Zealand website at www.biosecurity.govt.nz/nppa

Where has Dense Oxygen Weed come from?

Dense Oxygen Weed, also known as 'Egeria' and previously called *Elodea densa*, is native to Brazil, Uruguay and Argentina in eastern South America. It was introduced into New Zealand as an ornamental aquarium and small garden pond plant. It has since escaped both through accidental and deliberate release, into many natural waterways. It was first recorded growing wild in the Waikato River in 1946 and has continued to spread into many parts of the North Island. Outbreaks in the South Island are confined to a few waterways in Marlborough and Canterbury and isolated ponds on the West Coast, all targeted for total control (eradication).

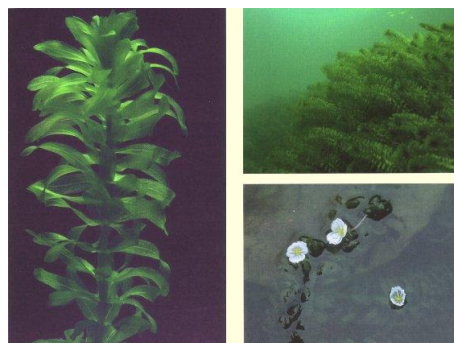
What does Dense Oxygen Weed look like?

Dense Oxygen Weed is a robust, perennial aquatic plant which forms dense mats of submerged, bottom rooted vegetation. The roots are branched and thread-like while the stems, which can grow up to 5m long in still waters, are much-branched and flexible. Leaves are lance-shaped, dark green and arranged around the stems in whorls of 4-6 (sometimes more). Leaves are 15-40mm long and 2-5mm wide.

During summer and into autumn the plants send up short flower stalks to the surface where white, three petalled flowers with yellow anthers float. Viable seed is not set in New Zealand as all plants are males only. However the plant revegetates readily from stem and root fragments and can be spread by flooding, people (both deliberately and accidentally), fishing/eel nets, boats, boat trailers, diggers and other farm machinery.

Note that Dense Oxygen Weed is sometimes confused with another aquatic plant, Canadian Pondweed (*Elodea canadensis*), which has also naturalised in many parts of New Zealand. However Canadian Pondweed, which is fairly widespread on the West Coast, is a smaller, more delicate plant which does not grow as tall as Dense Oxygen Weeds and has less impact on native aquatic systems.

*Top right: Dense Oxygen Weed, Egeria densa [flora.nhm-wien.ac.at]
At right: Leaf, growth and flower detail [left RNZIH, right NIWA]*



Why is Dense Oxygen Weed a Pest Plant?

Dense Oxygen Weed forms dense mats of vegetation which can block lakes and waterways causing flooding and affecting recreational users (fishing, boating, swimming). The dense growth forms monocultures which displace native aquatic plants and the biodiversity (fish, invertebrates) which live amongst them. Large areas of mature plants can also de-oxygenate the water so nothing else will grow. This plant is a serious threat to non-affected waterways.

What are the best methods of control?

The best method of control for Dense Oxygen Weed is prevention through Prevention public education and vigilance. For large infestations, control methods are generally only 'holding techniques' but a combination of methods may eradicate smaller outbreaks. Ongoing monitoring of all treated sites is advised.

Manual Methods

Weeding by hand or with machinery is not recommended because fragmented stems/roots will revegetate, spreading the weed even more. Covering the affected area with weed mat to prevent light access is more effective but ensure any plant material taken from the site is sent to landfill in black plastic bags. Do not compost or leave by waterways to rot.

Herbicide Methods

Diquat is the only effective chemical for Dense Oxygen Weed. This herbicide is registered for use in New Zealand in or over water. Under the West Coast Regional Council's Proposed Regional Land & Water Plan, the use of Diquat as a spray or gel is a permitted activity provided a number of conditions are met (Rules 65 & 66). For more information about these conditions, contact the West Coast Regional Council.

For personal safety please use all herbicides as per manufacturer's labelling

Biocontrols

Grass carp (NOT to be confused with the pest fish, Koi Carp) have been found to be a useful tool for biological control of large infestations of Dense Oxygen Weed, providing the fish can be contained. However for the small outbreaks on the West Coast other methods are recommended as the use of grass carp can be expensive and there are a number of conditions on their use. For more information contact WCRC.

Where can I get more help?

For further information call either of the Regional Weedbusters Co-ordinators. They are:

Mary Traves: Environmental Information Officer, West Coast Regional Council (768 0466 or 0508 800 118)

Tom Belton: Technical Support Officer Biosecurity & Weeds, Department of Conservation, West Coast - Tai Poutini Conservancy, Hokitika (03 756 9100)



www.weedbusters.org.nz

The West Coast Regional Council does not accept liability for any advice given on this sheet regarding application of herbicides for pest plant control. The brand names listed imply neither endorsement of those brands, nor criticism of any other brands not listed.