

## WHAT IS SEA LETTUCE?

Sea lettuce (*Ulva lactuca*, and other species of the genus *Ulva* that look very similar) is one of more than 100 types of green seaweed found around the coast of New Zealand. Sea lettuce is bright green and forms thin sheets up to 30cm in diameter with wavy, ruffled edges. The sheets are tough and translucent, and can look like wilted lettuce — hence the name.

Sea lettuce is native to New Zealand, but it is not endemic; it is found widely around the world. It provides habitat for small marine invertebrates and is a source of food for invertebrates and some larger animals, including birds.

## WHERE DOES IT GROW?

Sea lettuce grows along the coast, in estuaries and even in brackish water. It requires sunlight, so it does not grow in very deep water. It grows attached to substrate such as rocks, shells, and other seaweeds, but may also detach and live as a free-floating mass. Detached sea lettuce is moved around by winds, waves and currents, and a mass of sea lettuce may accumulate on a beach or in a sheltered bay.

## WHAT INFLUENCES ITS GROWTH?

In addition to sunlight, sea lettuce requires cool water and nutrients to thrive. Under ideal conditions, sea lettuce can grow remarkably rapidly, but in summer high water temperatures (greater than 20°C) may slow growth or even reduce it to zero. Sea lettuce requires both nitrogen and phosphorus to grow and the addition of these nutrients to the water it is growing in will stimulate growth.

For this reason, abundant sea lettuce may be a symptom of high levels of nitrogen and/or phosphorus in the water and it can be used as a “bioindicator” of water pollution.

Sudden rapid growth resulting in a sea lettuce “bloom” can be triggered by nutrient pollution, but blooms can also be part of a natural cycle related to weather and climate. For example, if there are persistent offshore winds, this can drive upwelling at the coast of oceanic bottom water that is cool and naturally nutrient rich. This then provides favourable conditions for a bloom.



Photo: Tim Carruthers



## CAN SEA LETTUCE BE A PROBLEM?

Sea lettuce can be a problem for the natural ecosystem and for humans if it is present in large enough quantities. Lots of sea lettuce can smother seagrass and shellfish. Following a sea lettuce "bloom", detached sea lettuce may pile up in deep drifts along shorelines or in sheltered coves or pools, where it dies and is rotted by bacteria. The bacteria consume oxygen and low oxygen levels may be harmful to animals such as shellfish and worms that live along the shoreline. In extreme cases the bacteria may produce an offensive-smelling and poisonous gas, hydrogen sulphide. People should avoid large piles of rotting sea lettuce.

Generally, sea lettuce can be a nuisance to people. For instance, detached and rotting sea lettuce can be unsightly and smelly, and large expanses of sea lettuce can foul propellers, fishing nets and lines, and block water intakes.

## WHAT IS WAIKATO REGIONAL COUNCIL DOING ABOUT SEA LETTUCE?

Many of the factors that cause blooms, including patterns of circulation in the coastal ocean that are driven by weather and climate, are entirely natural and unmanageable. However, Waikato Regional Council is working to identify and manage sources of nutrient pollution in coastal areas.



## MORE INFORMATION

### Contact

You can contact our coastal science team on Waikato Regional Council's freephone 0800 800 401 or by emailing [info@waikatoregion.govt.nz](mailto:info@waikatoregion.govt.nz)

### Publications

View, download or order the following publications at [www.waikatoregion.govt.nz/Services/Publications/](http://www.waikatoregion.govt.nz/Services/Publications/)

### Web

[www.waikatoregion.govt.nz/sealettuce/](http://www.waikatoregion.govt.nz/sealettuce/)

[www.waikatoregion.govt.nz/TR201315/](http://www.waikatoregion.govt.nz/TR201315/)