

## 8. SEA LETTUCE IN THE AVON HEATHCOTE ESTUARY

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| Corporate Plan Output: Regional Parks                    |  |

The purpose of this report is to inform Committee members of the situation regarding sea lettuce and advise of initiatives to address some of the negative impacts of the sea lettuce. A copy of this report has also been forwarded to the Parks and Recreation Committee for its information.

### BACKGROUND

The odour from rotting sea lettuce on the shores of the Estuary has been intense this year. The Council is monitoring the situation and collecting the lettuce when it can be picked up from near the high tide line.

Sea lettuce is the bright green algae that grow around the world in sheltered rocky coasts and in estuaries. Sea lettuce grows particularly well in shallow estuaries where light can penetrate the clear water and water temperatures are warmer. Nitrogen and phosphorus in coastal rivers or other discharges aid this growth. Weather patterns that influence the nutrient levels in the oceans also impact on the growth of sea lettuce in tidal waters.

The growth of sea lettuce in the Avon Heathcote Estuary is influenced by all of these factors. The nuisance caused by the sea lettuce results from the large amounts of plant material that is growing over some winter seasons. Given the right conditions it can multiply in the spring and summer period breaking away and washing up on the shores and shallow areas of the estuary in smelly heaps.

The discharge of treated wastewater from the Christchurch Wastewater Treatment Plant is often said to be the cause of the sea lettuce. While the discharge will be one factor in the growth of sea lettuce it is not the major cause of excessive growth. As part of the investigations into wastewater solutions the Council sought the best scientific advice we could obtain, using consultants from NIWA. Their answers indicated that complete removal of the wastewater from the estuary would reduce sea lettuce by up to 50% in some high-growth locations, but overall the reduction would be only about 20%. They also concluded that there would still be the potential for significant growth of sea lettuce with complete removal of the wastewater and a large reduction in nutrient loads from the two rivers. The reason for this is that growth is limited as much by the transparency of the water, and by the shearing effect of wind and tidal flows, as it is by the supply of nutrients.

### COUNCIL INITIATIVES

In 1998 the Council was granted consent from the Regional Council to take vehicles on to the Estuary in order to remove build up sea lettuce near the high tide area. This consent applies to the area on the eastern side of the Estuary south of Ebbtide Street. In each of the last three summers some sea lettuce has been removed from this area. In the last few months three pick-ups of sea lettuce have been carried out. However, when the whole of the intertidal areas are covered in sea lettuce it is not possible to remove it all. The present odour problems relate to the areas of decaying sea lettuce over large parts of the intertidal areas. Vehicle movements on the floor of the estuary do cause significant damage and as most of the decaying sea lettuce is now a jelly like consistency it is not able to be picked up and removed. It is not known how long the odour will last, as this will depend on weather conditions and how quickly the remaining material breaks down

Staff from several units are working on the development of an overall Estuary Management Plan, a Sea Lettuce Management Plan and on the development of the Green Edge proposals. These three initiatives are being co-ordinated. Meanwhile opportunities for other means of reducing sea lettuce nuisance will continue to be investigated.

**SUMMARY**

A Sea Lettuce Management Plan is being developed. This will be reported to City Services and other relevant Committees later in the year. In the meantime Parks and Waterways Unit will continue to collect drifts of sea lettuce from estuary beaches and keep the public informed.

**Chairman's**

**Recommendation:** That the information be received.